REBUILDING AMERICA'S DEFENSES

Strategy, Forces and Resources For a New Century

A Report of
The Project for the New American Century
September 2000

ABOUT THE PROJECT FOR THE NEW AMERICAN CENTURY

Established in the spring of 1997, the Project for the New American Century is a non-profit, educational organization whose goal is to promote American global leadership. The Project is an initiative of the New Citizenship Project. William Kristol is chairman of the Project, and Robert Kagan, Devon Gaffney Cross, Bruce P. Jackson and John R. Bolton serve as directors. Gary Schmitt is executive director of the Project.

> "As the 20th century draws to a close, the United States stands as the world's most preeminent power. Having led the West to victory in the Cold War, America faces an opportunity and a challenge: Does the United States have the vision to build upon the achievement of past decades? Does the United States have the resolve to shape a new century favorable to American principles and interests?
>
> "[What we require is] a military that is strong and ready to meet both present and future challenges; a foreign policy that boldly and purposefully promotes American principles abroad; and national leadership that accepts the United States' global responsibilities.
>
> "Of course, the United States must be prudent in how it exercises its power. But we cannot safely avoid the responsibilities of global leadership of the costs that are associated with its exercise. America has a vital role in maintaining peace and security in Europe, Asia, and the Middle East. If we shirk our responsibilities, we invite challenges to our fundamental interests. The history of the 20th century should have taught us that it is important to shape circumstances before crises emerge, and to meet threats before they become dire. The history of the past century should have taught us to embrace the cause of American leadership."
>
> – From the Project's founding *Statement of Principles*

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INTRODUCTION

The Project for the New American Century was established in the spring of 1997. From its inception, the Project has been concerned with the decline in the strength of America's defenses, and in the problems this would create for the exercise of American leadership around the globe and, ultimately, for the preservation of peace.

Our concerns were reinforced by the two congressionally-mandated defense studies that appeared soon thereafter: the Pentagon's Quadrennial Defense Review (May 1997) and the report of the National Defense Panel (December 1997). Both studies assumed that U.S. defense budgets would remain flat or continue to shrink. As a result, the defense plans and recommendations outlined in the two reports were fashioned with such budget constraints in mind. Broadly speaking, the QDR stressed current military requirements at the expense of future defense needs, while the NDP's report emphasized future needs by underestimating today's defense responsibilities.

Although the QDR and the report of the NDP proposed different policies, they shared one underlying feature: the gap between resources and strategy should be resolved not by increasing resources but by shortchanging strategy. America's armed forces, it seemed, could either prepare for the future by retreating from its role as the essential defender of today's global security order, or it could take care of current business but be unprepared for tomorrow's threats and tomorrow's battlefields.

Either alternative seemed to us shortsighted. The United States is the world's only superpower, combining preeminent military power, global technological leadership, and the world's largest economy. Moreover, America stands at the head of a system of alliances which includes the world's other leading democratic powers. At present the United States faces no global rival. America's grand strategy should aim to preserve and extend this advantageous position as far into the future as possible. There are, however, potentially powerful states dissatisfied with the current situation and eager to change it, if they can, in directions that endanger the relatively peaceful, prosperous and free condition the world enjoys today. Up to now, they have been deterred from doing so by the capability and global presence of American military power. But, as that power declines, relatively and absolutely, the happy conditions that follow from it will be inevitably undermined.

Preserving the desirable strategic situation in which the United States now finds itself requires a globally preeminent military capability both today and in the future. But years of cuts in defense spending have eroded the American military's combat readiness, and put in jeopardy the Pentagon's plans for maintaining military superiority in the years ahead. Increasingly, the U.S. military has found itself undermanned, inadequately equipped and trained, straining to handle contingency operations, and ill-prepared to adapt itself to the revolution in military affairs. Without a well-conceived defense policy and an appropriate increase in

defense spending, the United States has been letting its ability to take full advantage of the remarkable strategic opportunity at hand slip away.

With this in mind, we began a project in the spring of 1998 to examine the country's defense plans and resource requirements. We started from the premise that U.S. military capabilities should be sufficient to support an American grand strategy committed to building upon this unprecedented opportunity. We did not accept pre-ordained constraints that followed from assumptions about what the country might or might not be willing to expend on its defenses.

In broad terms, we saw the project as building upon the defense strategy outlined by the Cheney Defense Department in the waning days of the Bush Administration. The Defense Policy Guidance (DPG) drafted in the early months of 1992 provided a blueprint for maintaining U.S. preeminence, precluding the rise of a great power rival, and shaping the international security order in line with American principles and interests. Leaked before it had been formally approved, the document was criticized as an effort by "cold warriors" to keep defense spending high and cuts in forces small despite the collapse of the Soviet Union; not surprisingly, it was subsequently buried by the new administration.

At present the United States faces no global rival. America's grand strategy should aim to preserve and extend this advantageous position as far into the future as possible.

Although the experience of the past eight years has modified our understanding of particular military requirements for carrying out such a strategy, the basic tenets of the DPG, in our judgment, remain sound. And what Secretary Cheney said at the time in response to the DPG's critics remains true today: "We can either sustain the [armed] forces we require and remain in a position to help shape things for the better, or we can throw that advantage away. [But] that would only hasten the day when we face greater threats, at higher costs and further risk to American lives."

The project proceeded by holding a series of seminars. We asked outstanding defense specialists to write papers to explore a variety of topics: the future missions and requirements of the individual military services, the role of the reserves, nuclear strategic doctrine and missile defenses, the defense budget and prospects for military modernization, the state (training and readiness) of today's forces, the revolution in military affairs, and defense-planning for theater wars, small wars and constabulary operations. The papers were circulated to a group of participants, chosen for their experience and judgment in defense affairs. (The list of participants may be found at the end of this report.) Each paper then became the basis for discussion and debate. Our goal was to use the papers to assist deliberation, to generate and test ideas, and to assist us in developing our final report. While each paper took as its starting point a shared strategic point of view, we made no attempt to dictate the views or direction of the individual papers. We wanted as full and as diverse a discussion as possible.

Our report borrows heavily from those deliberations. But we did not ask seminar participants to "sign-off" on the final report. We wanted frank discussions and we sought to avoid the pitfalls of trying to produce a consensual but bland product. We wanted to try to define and describe a defense strategy that is honest, thoughtful, bold, internally consistent and clear. And we wanted to spark a serious and informed discussion, the essential first step for reaching sound conclusions and for gaining public support.

New circumstances make us think that the report might have a more receptive audience now than in recent years. For the first time since the late 1960s the federal government is running a surplus. For most of the 1990s, Congress and the White House gave balancing the federal budget a higher priority than funding national security. In fact, to a significant degree, the budget was balanced by a combination of increased tax revenues and cuts in defense spending. The surplus expected in federal revenues over the next decade, however, removes any need to hold defense spending to some preconceived low level.

Moreover, the American public and its elected representatives have become increasingly aware of the declining state of the U.S. military. News stories, Pentagon reports, congressional testimony and anecdotal accounts from members of the armed services paint a disturbing picture of an American military that is troubled by poor enlistment and retention rates, shoddy housing, a shortage of spare parts and weapons, and diminishing combat readiness.

Finally, this report comes after a decade's worth of experience in dealing with the post-Cold War world. Previous efforts to fashion a defense strategy that would make sense for today's security environment were forced to work from many untested assumptions about the nature of a world without a superpower rival. We have a much better idea today of what our responsibilities are, what the threats to us might be in this new security environment, and what it will take to secure the relative peace and stability. We believe our report reflects and benefits from that decade's worth of experience.

Our report is published in a presidential election year. The new administration will need to produce a second Quadrennial Defense Review shortly after it takes office. We hope that the Project's report will be useful as a road map for the nation's immediate and future defense plans. We believe we have set forth a defense program that is justified by the evidence, rests on an honest examination of the problems and possibilities, and does not flinch from facing the true cost of security. We hope it will inspire careful consideration and serious discussion. The post-Cold War world will not remain a relatively peaceful place if we continue to neglect foreign and defense matters. But serious attention, careful thought, and the willingness to devote adequate resources to maintaining America's military strength can make the world safer and American strategic interests more secure now and in the future.

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KEY FINDINGS

This report proceeds from the belief that America should seek to preserve and extend its position of global leadership by maintaining the preeminence of U.S. military forces. Today, the United States has an unprecedented strategic opportunity. It faces no immediate great-power challenge; it is blessed with wealthy, powerful and democratic allies in every part of the world; it is in the midst of the longest economic expansion in its history; and its political and economic principles are almost universally embraced. At no time in history has the international security order been as conducive to American interests and ideals. The challenge for the coming century is to preserve and enhance this "American peace."

Yet unless the United States maintains sufficient military strength, this opportunity will be lost. And in fact, over the past decade, the failure to establish a security strategy responsive to new realities and to provide adequate resources for the full range of missions needed to exercise U.S. global leadership has placed the American peace at growing risk. This report attempts to define those requirements. In particular, we need to:

ESTABLISH FOUR CORE MISSIONS for U.S. military forces:

- **defend the American homeland;**
- **fight and decisively win multiple, simultaneous major theater wars;**
- **perform the "constabulary" duties associated with shaping the security environment in critical regions;**
- **transform U.S. forces to exploit the "revolution in military affairs;"**

To carry out these core missions, we need to provide sufficient force and budgetary allocations. In particular, the United States must:

MAINTAIN NUCLEAR STRATEGIC SUPERIORITY, basing the U.S. nuclear deterrent upon a global, nuclear net assessment that weighs the full range of current and emerging threats, not merely the U.S.-Russia balance.

RESTORE THE PERSONNEL STRENGTH of today's force to roughly the levels anticipated in the "Base Force" outlined by the Bush Administration, an increase in active-duty strength from 1.4 million to 1.6 million.

REPOSITION U.S. FORCES to respond to 21st century strategic realities by shifting permanently-based forces to Southeast Europe and Southeast Asia, and by changing naval deployment patterns to reflect growing U.S. strategic concerns in East Asia.

MODERNIZE CURRENT U.S. FORCES SELECTIVELY, proceeding with the F-22 program while increasing purchases of lift, electronic support and other aircraft; expanding submarine and surface combatant fleets; purchasing Comanche helicopters and medium-weight ground vehicles for the Army, and the V-22 Osprey "tilt-rotor" aircraft for the Marine Corps.

CANCEL "ROADBLOCK" PROGRAMS such as the Joint Strike Fighter, CVX aircraft carrier, and Crusader howitzer system that would absorb exorbitant amounts of Pentagon funding while providing limited improvements to current capabilities. Savings from these canceled programs should be used to spur the process of military transformation.

DEVELOP AND DEPLOY GLOBAL MISSILE DEFENSES to defend the American homeland and American allies, and to provide a secure basis for U.S. power projection around the world.

CONTROL THE NEW "INTERNATIONAL COMMONS" OF SPACE AND "CYBERSPACE," and pave the way for the creation of a new military service – U.S. Space Forces – with the mission of space control.

EXPLOIT THE "REVOLUTION IN MILITARY AFFAIRS" to insure the long-term superiority of U.S. conventional forces. Establish a two-stage transformation process which

- **maximizes the value of current weapons systems through the application of advanced technologies, and,**
- **produces more profound improvements in military capabilities, encourages competition between single services and joint-service experimentation efforts.**

INCREASE DEFENSE SPENDING gradually to a minimum level of 3.5 to 3.8 percent of gross domestic product, adding $15 billion to $20 billion to total defense spending annually.

Fulfilling these requirements is essential if America is to retain its militarily dominant status for the coming decades. Conversely, the failure to meet any of these needs must result in some form of strategic retreat. At current levels of defense spending, the only option is to try ineffectually to "manage" increasingly large risks: paying for today's needs by shortchanging tomorrow's; withdrawing from constabulary missions to retain strength for large-scale wars; "choosing" between presence in Europe or presence in Asia; and so on. These are bad choices. They are also false economies. The "savings" from withdrawing from the Balkans, for example, will not free up anywhere near the magnitude of funds needed for military modernization or transformation. But these are false economies in other, more profound ways as well. The true cost of not meeting our defense requirements will be a lessened capacity for American global leadership and, ultimately, the loss of a global security order that is uniquely friendly to American principles and prosperity.

I
WHY ANOTHER DEFENSE REVIEW?

Since the end of the Cold War, the United States has struggled to formulate a coherent national security or military strategy, one that accounts for the constants of American power and principles yet accommodates 21st century realities. Absent a strategic framework, U.S. defense planning has been an empty and increasingly self-referential exercise, often dominated by bureaucratic and budgetary rather than strategic interests. Indeed, the proliferation of defense reviews over the past decade testifies to the failure to chart a consistent course: to date, there have been half a dozen formal defense reviews, and the Pentagon is now gearing up for a second Quadrennial Defense Review in 2001. Unless this "QDR II" matches U.S. military forces and resources to a viable American strategy, it, too, will fail.

These failures are not without cost: already, they place at risk an historic opportunity. After the victories of the past century – two world wars, the Cold War and most recently the Gulf War – the United States finds itself as the uniquely powerful leader of a coalition of free and prosperous states that faces no immediate great-power challenge.

The American peace has proven itself peaceful, stable and durable. It has, over the past decade, provided the geopolitical framework for widespread economic growth and the spread of American principles of liberty and democracy. Yet no moment in international politics can be frozen in time; even a global *Pax Americana* will not preserve itself.

Paradoxically, as American power and influence are at their apogee, American military forces limp toward exhaustion, unable to meet the demands of their many and varied missions, including preparing for tomorrow's battlefield. Today's force, reduced by a third or more over the past decade, suffers from degraded combat readiness; from difficulties in recruiting and retaining sufficient numbers of soldiers, sailors, airmen and Marines; from the effects of an extended "procurement holiday" that has resulted in the premature aging of most weapons systems; from an increasingly obsolescent and inadequate military infrastructure; from a shrinking industrial base poorly structured to be the "arsenal of democracy" for the 21st century; from a lack of innovation that threatens the technological and operational advantages enjoyed by U.S. forces for a generation and upon which American strategy depends. Finally, and most dangerously, the social fabric of the military is frayed and worn. U.S. armed forces suffer from a degraded quality of life divorced from middle-class expectations, upon which an all-volunteer force depends. Enlisted men and women and junior officers increasingly lack confidence in their senior leaders, whom they believe will not tell unpleasant truths to their civilian leaders. In sum, as the American peace reaches across the globe, the force that preserves that peace is increasingly overwhelmed by its tasks.

This is no paradox; it is the inevitable consequence of the failure to match military means to geopolitical ends. Underlying the failed strategic and defense reviews of the past decade is the idea that the collapse of

the Soviet Union had created a "strategic pause." In other words, until another great-power challenger emerges, the United States can enjoy a respite from the demands of international leadership. Like a boxer between championship bouts, America can afford to relax and live the good life, certain that there would be enough time to shape up for the next big challenge. Thus the United States could afford to reduce its military forces, close bases overseas, halt major weapons programs and reap the financial benefits of the "peace dividend." But as we have seen over the past decade, there has been no shortage of powers around the world who have taken the collapse of the Soviet empire as an opportunity to expand their own influence and challenge the American-led security order.

Beyond the faulty notion of a strategic pause, recent defense reviews have suffered from an inverted understanding of the military dimension of the Cold War struggle between the United States and the Soviet Union. American containment strategy did not proceed from the assumption that the Cold War would be a purely military struggle, in which the U.S. Army matched the Red Army tank for tank; rather, the United States would seek to deter the Soviets militarily while defeating them economically and ideologically over time. And, even within the realm of military affairs, the practice of deterrence allowed for what in military terms is called "an economy of force." The principle job of NATO forces, for example, was to deter an invasion of Western Europe, not to invade and occupy the Russian heartland. Moreover, the bipolar nuclear balance of terror made both the United States and the Soviet Union generally cautious. Behind the smallest proxy war in the most remote region lurked the possibility of Armageddon. Thus, despite numerous miscalculations through the five decades of Cold War, the United States reaped an extraordinary measure of global security and stability simply by building a credible and, in relative terms, inexpensive nuclear arsenal.

	Cold War	**21st Century**
Security system	Bipolar	Unipolar
Strategic goal	Contain Soviet Union	Preserve *Pax Americana*
Main military mission(s)	Deter Soviet expansionism	Secure and expand zones of democratic peace; deter rise of new great-power competitor; defend key regions; exploit transformation of war
Main military threat(s)	Potential global war across many theaters	Potential theater wars spread across globe
Focus of strategic competition	Europe	East Asia

Over the decade of the post-Cold-War period, however, almost everything has changed. The Cold War world was a bipolar world; the 21st century world is – for the moment, at least – decidedly unipolar, with America as the world's "sole superpower." America's strategic goal used to be containment of the Soviet Union; today the task is to preserve an international security environment conducive to American interests and ideals. The military's job during the Cold War was to deter Soviet expansionism. Today its task is to secure and expand the "zones of democratic peace;" to deter the rise of a new great-power competitor; defend key regions of Europe, East Asia and the Middle East; and to preserve American preeminence through the coming transformation of war made

possible by new technologies. From 1945 to 1990, U.S. forces prepared themselves for a single, global war that might be fought across many theaters; in the new century, the prospect is for a variety of theater wars around the world, against separate and distinct adversaries pursuing separate and distinct goals. During the Cold War, the main venue of superpower rivalry, the strategic "center of gravity," was in Europe, where large U.S. and NATO conventional forces prepared to repulse a Soviet attack and over which nuclear war might begin; and with Europe now generally at peace, the new strategic center of concern appears to be shifting to East Asia. The missions for America's armed forces have not diminished so much as shifted. The threats may not be as great, but there are more of them. During the Cold War, America acquired its security "wholesale" by global deterrence of the Soviet Union. Today, that same security can only be acquired at the "retail" level, by deterring or, when needed, by compelling regional foes to act in ways that protect American interests and principles.

Today, America spends less than 3 percent of its gross domestic product on national defense, less than at any time since before the United States established itself as the world's leading power.

This gap between a diverse and expansive set of new strategic realities and diminishing defense forces and resources does much to explain why the Joint Chiefs of Staff routinely declare that they see "high risk" in executing the missions assigned to U.S. armed forces under the government's declared national military strategy. Indeed, a JCS assessment conducted at the height of the Kosovo air war found the risk level "unacceptable." Such risks are the result of the combination of the new missions described above and the dramatically reduced military force that has emerged from the defense "drawdown" of the past decade. Today, America spends less than 3 percent of its gross domestic product on national defense, less than at any time since before World War II – in other words, since before the United States established itself as the world's leading power – and a cut from 4.7 percent of GDP in 1992, the first real post-Cold-War defense budget. Most of this reduction has come under the Clinton Administration; despite initial promises to approximate the level of defense spending called for in the final Bush Administration program, President Clinton cut more than $160 billion from the Bush program from 1992 to 1996 alone. Over the first seven years of the Clinton Administration, approximately $426 billion in defense investments have been deferred, creating a weapons procurement "bow wave" of immense proportions.

The most immediate effect of reduced defense spending has been a precipitate decline in combat readiness. Across all services, units are reporting degraded readiness, spare parts and personnel shortages, postponed and simplified training regimens, and many other problems. In congressional testimony, service chiefs of staff now routinely report that their forces are inadequate to the demands of the "two-war" national military strategy. Press attention focused on these readiness problems when it was revealed that two Army divisions were given a "C-4" rating, meaning they were not ready for war. Yet it was perhaps more telling that *none* of the Army's ten divisions achieved the highest "C-1" rating, reflecting the widespread effects of slipping readiness standards. By contrast, *every* division that deployed to Operation Desert Storm in 1990 and 1991 received a "C-1" rating. This is just a snapshot that captures the state of U.S. armed forces today.

These readiness problems are exacerbated by the fact that U.S. forces are poorly positioned to respond to today's

crises. In Europe, for example, the overwhelming majority of Army and Air Force units remain at their Cold War bases in Germany or England, while the security problems on the continent have moved to Southeast Europe. Temporary rotations of forces to the Balkans and elsewhere in Southeast Europe increase the overall burdens of these operations many times. Likewise, the Clinton Administration has continued the fiction that the operations of American forces in the Persian Gulf are merely temporary duties. Nearly a decade after the Gulf War, U.S. air, ground and naval forces continue to protect enduring American interests in the region. In addition to rotational naval forces, the Army maintains what amounts to an armored brigade in Kuwait for nine months of every year; the Air Force has two composite air wings in constant "no-fly zone" operations over northern and southern Iraq. And despite increasing worries about the rise of China and instability in Southeast Asia, U.S. forces are found almost exclusively in Northeast Asian bases.

Yet for all its problems in carrying out today's missions, the Pentagon has done almost nothing to prepare for a future that promises to be very different and potentially much more dangerous. It is now commonly understood that information and other new technologies – as well as widespread technological and weapons proliferation – are creating a dynamic that may threaten America's ability to exercise its dominant military power. Potential rivals such as China are anxious to exploit these transformational technologies broadly, while adversaries like Iran, Iraq and North Korea are rushing to develop ballistic missiles and nuclear weapons as a deterrent to American intervention in regions they seek to dominate. Yet the Defense Department and the services have done little more than affix a "transformation" label to programs developed during the Cold War, while diverting effort and attention to a process of joint experimentation which restricts rather than encourages innovation. Rather than admit that rapid technological changes makes it uncertain which new weapons systems to develop, the armed services cling ever more tightly to traditional program and concepts. As Andrew Krepinevich, a member of the National Defense Panel, put it in a recent study of Pentagon experimentation, "Unfortunately, the Defense Department's rhetoric asserting the need for military transformation and its support for joint experimentation has yet to be matched by any great sense of urgency or any substantial resource support.…At present the Department's effort is poorly focused and woefully underfunded."

In sum, the 1990s have been a "decade of defense neglect." This leaves the next president of the United States with an enormous challenge: he must increase military spending to preserve American geopolitical leadership, or he must pull back from the security commitments that are the measure of America's position as the world's sole superpower and the final guarantee of security, democratic freedoms and individual political rights. This choice will be among the first to confront the president: new legislation requires the incoming administration to fashion a national security strategy within six months of assuming office, as opposed to waiting a full year, and to complete another quadrennial defense review three months after that. In a larger sense, the new president will choose whether today's "unipolar moment," to use columnist Charles Krauthammer's phrase for America's current geopolitical preeminence, will be extended along with the peace and prosperity that it provides.

This study seeks to frame these choices clearly, and to re-establish the links between U.S. foreign policy, security strategy, force planning and defense spending. If an American peace is to be maintained, and expanded, it must have a secure foundation on unquestioned U.S. military preeminence.

II
FOUR ESSENTIAL MISSIONS

America's global leadership, and its role as the guarantor of the current great-power peace, relies upon the safety of the American homeland; the preservation of a favorable balance of power in Europe, the Middle East and surrounding energy-producing region, and East Asia; and the general stability of the international system of nation-states relative to terrorists, organized crime, and other "non-state actors." The relative importance of these elements, and the threats to U.S. interests, may rise and fall over time. Europe, for example, is now extraordinarily peaceful and stable, despite the turmoil in the Balkans. Conversely, East Asia appears to be entering a period with increased potential for instability and competition. In the Gulf, American power and presence has achieved relative external security for U.S. allies, but the longer-term prospects are murkier. Generally, American strategy for the coming decades should seek to consolidate the great victories won in the 20th century – which have made Germany and Japan into stable democracies, for example – maintain stability in the Middle East, while setting the conditions for 21st-century successes, especially in East Asia.

A retreat from any one of these requirements would call America's status as the world's leading power into question. As we have seen, even a small failure like that in Somalia or a halting and incomplete triumph as in the Balkans can cast doubt on American credibility. The failure to define a coherent global security and military strategy during the post-Cold-War period has invited challenges; states seeking to establish regional hegemony continue to probe for the limits of the American security perimeter. None of the defense reviews of the past decade has weighed fully the range of missions demanded by U.S. global leadership: defending the homeland, fighting and winning multiple large-scale wars, conducting constabulary missions which preserve the current peace, and transforming the U.S. armed forces to exploit the "revolution in military affairs." Nor have they adequately quantified the forces and resources necessary to execute these missions separately and successfully. While much further detailed analysis would be required, it is the purpose of this study to outline the large, "full-spectrum" forces that are necessary to conduct the varied tasks demanded by a strategy of American preeminence for today and tomorrow.

None of the defense reviews of the past decade has weighed fully the range of missions demanded by U.S. global leadership, nor adequately quantified the forces and resources necessary to execute these missions successfully.

HOMELAND DEFENSE. America must defend its homeland. During the Cold War, nuclear deterrence was the key element in homeland defense; it remains essential. But the new century has brought with it new challenges. While reconfiguring its nuclear force, the United States also must counteract the effects of the proliferation of ballistic missiles and weapons of mass destruction that may soon allow lesser states to deter U.S. military action by threatening U.S. allies and the American homeland itself. Of all the new and current missions for U.S. armed forces, this must have priority.

LARGE WARS. Second, the United States must retain sufficient forces able to rapidly deploy and win multiple simultaneous large-scale wars and also to be able to respond to unanticipated contingencies in regions where it does not maintain forward-based forces. This resembles the "two-war" standard that has been the basis of U.S. force planning over the past decade. Yet this standard needs to be updated to account for new realities and potential new conflicts.

CONSTABULARY DUTIES. Third, the Pentagon must retain forces to preserve the current peace in ways that fall short of conduction major theater campaigns. A decade's experience and the policies of two administrations have shown that such forces must be expanded to meet the needs of the new, long-term NATO mission in the Balkans, the continuing no-fly-zone and other missions in Southwest Asia, and other presence missions in vital regions of East Asia. These duties are today's most frequent missions, requiring forces configured for combat but capable of long-term, independent constabulary operations.

TRANSFORM U.S. ARMED FORCES. Finally, the Pentagon must begin now to exploit the so-called "revolution in military affairs," sparked by the introduction of advanced technologies into military systems; this must be regarded as a separate and critical mission worthy of a share of force structure and defense budgets.

Current American armed forces are ill-prepared to execute these four missions. Over the past decade, efforts to design and build effective missile defenses have been ill-conceived and underfunded, and the Clinton Administration has proposed deep reductions in U.S. nuclear forces without sufficient analysis of the changing global nuclear balance of forces. While, broadly speaking, the United States now maintains sufficient active and reserve forces to meet the traditional two-war standard, this is true only in the abstract, under the most favorable geopolitical conditions. As the Joint Chiefs of Staff have admitted repeatedly in congressional testimony, they lack the forces necessary to meet the two-war benchmark as expressed in the warplans of the regional commanders-in-chief. The requirements for major-war forces must be reevaluated to accommodate new strategic realities. One of these new realities is the requirement for peacekeeping operations; unless this requirement is better understood, America's ability to fight major wars will be jeopardized. Likewise, the transformation process has gotten short shrift.

To meet the requirements of the four new missions highlighted above, the United States must undertake a two-stage process. The immediate task is to rebuild today's force, ensuring that it is equal to the tasks before it: shaping the peacetime environment and winning multiple, simultaneous theater wars; these forces must be large enough to accomplish these tasks without running the "high" or "unacceptable" risks it faces now. The second task is to seriously embark upon a transformation of the Defense Department. This itself will be a two-stage effort: for the next decade or more, the armed forces will continue to operate many of the same systems it now

does, organize themselves in traditional units, and employ current operational concepts. However, this transition period must be a first step toward more substantial reform. Over the next several decades, the United States must field a global system of missile defenses, divine ways to control the new "international commons" of space and cyberspace, and build new kinds of conventional forces for different strategic challenges and a new technological environment.

Nuclear Forces

Current conventional wisdom about strategic forces in the post-Cold-War world is captured in a comment made by the late Les Aspin, the Clinton Administration's first secretary of defense. Aspin wrote that the collapse of the Soviet Union had "literally reversed U.S. interests in nuclear weapons" and, "Today, if offered the magic wand to eradicate the existence and knowledge of nuclear weapons, we would very likely accept it." Since the United States is the world's dominant conventional military power, this sentiment is understandable. But it is precisely because we have such power that smaller adversarial states, looking for an equalizing advantage, are determined to acquire their own weapons of mass destruction. Whatever our fondest wishes, the reality of the today's world is that there is no magic wand with which to eliminate these weapons (or, more fundamentally, the interest in acquiring them) and that deterring their use requires a reliable and dominant U.S. nuclear capability.

While the formal U.S. nuclear posture has remained conservative through the 1994 Nuclear Posture Review and the 1997 Quadrennial Defense Review, and senior Pentagon leaders speak of the continuing need for nuclear deterrent forces, the Clinton Administration has taken repeated steps to undermine the readiness and effectiveness of U.S. nuclear forces. In particular, it has virtually ceased development of safer and more effective nuclear weapons; brought underground testing to a complete halt; and allowed the Department of Energy's weapons complex and associated scientific expertise to atrophy for lack of support. The administration has also made the decision to retain current weapons in the active force for years beyond their design life. When combined with the decision to cut back on regular, non-nuclear flight and system tests of the weapons themselves, this raises a host of questions about the continuing safety and reliability of the nation's strategic arsenal. The administration's stewardship of the nation's deterrent capability has been aptly described by Congress as "erosion by design."

A new assessment of the global nuclear balance, one that takes account of Chinese and other nuclear forces as well as Russian, must precede decisions about U.S. nuclear force cuts.

Rather than maintain and improve America's nuclear deterrent, the Clinton Administration has put its faith in new arms control measures, most notably by signing the Comprehensive Test Ban Treaty (CTBT). The treaty proposed a new multilateral regime, consisting of some 150 states, whose principal effect would be to constrain America's unique role in providing the global nuclear umbrella that helps to keep states like Japan and South Korea from developing the weapons that are well within their scientific capability, while doing little to stem nuclear weapons proliferation. Although the Senate refused to ratify the treaty, the administration continues to abide by its basic strictures. And while it may

make sense to continue the current moratorium on nuclear testing for the moment – since it would take a number of years to refurbish the neglected testing infrastructure in any case – ultimately this is an untenable situation. If the United States is to have a nuclear deterrent that is both effective and safe, it will need to test.

That said, of all the elements of U.S. military force posture, perhaps none is more in need of reevaluation than America's nuclear weapons. Nuclear weapons remain a critical component of American military power but it is unclear whether the current U.S. nuclear arsenal is well-suited to the emerging post-Cold War world. Today's strategic calculus encompasses more factors than just the balance of terror between the United States and Russia. U.S. nuclear force planning and related arms control policies must take account of a larger set of variables than in the past, including the growing number of small nuclear arsenals – from North Korea to Pakistan to, perhaps soon, Iran and Iraq – and a modernized and expanded Chinese nuclear force. Moreover, there is a question about the role nuclear weapons should play in deterring the use of other kinds of weapons of mass destruction, such as chemical and biological, with the U.S. having foresworn those weapons' development and use. It addition, there may be a need to develop a new family of nuclear weapons designed to address new sets of military requirements, such as would be required in targeting the very deep underground, hardened bunkers that are being built by many of our potential adversaries. Nor has there been a serious analysis done of the benefits versus the costs of maintaining the traditional nuclear "triad." What is needed first is a global net assessment of what kinds and numbers of nuclear weapons the U.S. needs to meet its security responsibilities in a post-Soviet world.

The administration's stewardship of the nation's deterrent capability has been described by Congress as "erosion by design."

In short, until the Department of Defense can better define future its nuclear requirements, significant reductions in U.S. nuclear forces might well have unforeseen consequences that lessen rather than enhance the security of the United States and its allies. Reductions, upon review, might be called for. But what should finally drive the size and character of our nuclear forces is not numerical parity with Russian capabilities but maintaining American strategic superiority – and, with that superiority, a capability to deter possible hostile coalitions of nuclear powers. U.S. nuclear superiority is nothing to be ashamed of; rather, it will be an essential element in preserving American leadership in a more complex and chaotic world.

Forces for Major Theater Wars

The one constant of Pentagon force planning through the past decade has been the recognized need to retain sufficient combat forces to fight and win, as rapidly and decisively as possible, multiple, nearly simultaneous major theater wars. This constant is based upon two important truths about the current international order. One, the Cold-War standoff between America and its allies and the Soviet Union that made for caution and discouraged direct aggression against the major security interests of either side no longer exists. Two, conventional warfare remains a viable way for aggressive states to seek major changes in the international order.

Iraq's 1990 invasion of Kuwait reflected both truths. The invasion would have been highly unlikely, if not impossible, within the context of the Cold War, and Iraq overran Kuwait in a matter of hours. These two truths revealed a third: maintaining or restoring a favorable order in vital regions in

the world such as Europe, the Middle East and East Asia places a unique responsibility on U.S. armed forces. The Gulf War and indeed the subsequent lesser wars in the Balkans could hardly have been fought and won without the dominant role played by American military might.

Thus, the understanding that U.S. armed forces should be shaped by a "two-major-war" standard rightly has been accepted as the core of America's superpower status since the end of the Cold War. The logic of past defense reviews still obtains, and received its clear exposition in the 1997 Quadrennial Defense Review, which argued:

> *A force sized and equipped for deterring and defeating aggression in more than one theater ensures that the United States will maintain the flexibility to cope with the unpredictable and unexpected. Such a capability is the sine qua non of a superpower and is essential to the credibility of our overall national security strategy….If the United States were to forego its ability to defeat aggression in more than one theater at a time, our standing as a global power, as the security partner of choice and the leader of the international community would be called in to question. Indeed, some allies would undoubtedly read a one-war capability as a signal that the United States, if heavily engaged elsewhere, would no longer be able to defend their interests…A one-theater-war capacity would risk undermining…the credibility of U.S. security commitments in key regions of the world. This, in turn, could cause allies and friends to adopt more divergent defense policies and postures, thereby weakening the web of alliances and coalitions on which we rely to protect our interests abroad.*

In short, anything less than a clear two-war capacity threatens to devolve into a no-war strategy.

Unfortunately, Defense Department thinking about this requirement was frozen in the early 1990s. The experience of Operation Allied Force in the Balkans suggests that, if anything, the canonical two-war force-sizing standard is more likely to be too low than too high. The Kosovo air campaign eventually involved the level of forces anticipated for a major war, but in a theater other than the two – the Korean peninsula and Southwest Asia – that have generated past Pentagon planning scenarios. Moreover, new theater wars that can be foreseen, such as an American defense of Taiwan against a Chinese invasion or punitive attack, have yet to be formally considered by Pentagon planners.

To better judge forces needed for building an American peace, the Pentagon needs to begin to calculate the force necessary to protect, independently, U.S. interests in Europe, East Asia and the Gulf at all times. The actions of our adversaries in these regions bear no more than a tangential relationship to one another; it is more likely that one of these regional powers will seize an opening created by deployments of U.S. forces elsewhere to make mischief.

The Joint Chiefs have admitted they lack the forces necessary to meet the two-war benchmark.

Thus, the major-theater-war standard should remain the principal force-sizing tool for U.S. conventional forces. This not to say that this measure has been perfectly applied in the past: Pentagon analyses have been both too optimistic and too pessimistic, by turns. For example, the analyses done of the requirement to defeat an Iraqi invasion of Kuwait and Saudi Arabia almost certainly overestimates the level of force required. Conversely, past analyses of a defense of South Korea may have underestimated the difficulties of such a war, especially if North Korea employed weapons of mass destruction, as intelligence estimates anticipate. Moreover, the theater-war analysis done for

the QDR assumed that Kim Jong Il and Saddam Hussein each could begin a war – perhaps even while employing chemical, biological or even nuclear weapons – and the United States would make no effort to unseat militarily either ruler. In both cases, past Pentagon wargames have given little or no consideration to the force requirements necessary not only to defeat an attack but to remove these regimes from power and conduct post-combat stability operations. In short, past Defense Department application of the two-war standard is not a reliable guide to the real force requirements – and, of course, past reviews included no analysis of the kind of campaign in Europe as was seen in Operation Allied Force. Because past Pentagon strategy reviews have been budget-driven exercises, it will be necessary to conduct fresh and more realistic analyses even of the canonical two-war scenarios.

In sum, while retaining the spirit of past force-planning for major wars, the Department of Defense must undertake a more nuanced and thoroughgoing review of real requirements. The truths that gave rise to the original two-war standard endure: America's adversaries will continue to resist the building of the American peace; when they see an opportunity as Saddam Hussein did in 1990, they will employ their most powerful armed forces to win on the battle-field what they could not win in peaceful competition; and American armed forces will remain the core of efforts to deter, defeat, or remove from power regional aggressors.

Forces for 'Constabulary' Duties

In addition to improving the analysis needed to quantify the requirements for major theater wars, the Pentagon also must come to grips with the real requirements for constabulary missions. The 1997 Quadrennial Defense Review rightly acknowledged that these missions, which it dubbed "smaller-scale contingencies," or SSCs, would be the frequent and unavoidable diet for U.S. armed forces for many years to come: "Based on recent experience and intelligence projections, the demand for SSC operations is expected to remain high over the next 15 to 20 years," the review concluded. Yet, at the same time, the QDR failed to allocate any forces to these missions, continuing the fiction that, for force planning purposes, constabulary missions could be considered "lesser included cases" of major theater war requirements. "U.S. forces must also be able to withdraw from SSC operations, reconstitute, and then deploy to a major theater war in accordance with required timelines," the review argued.

The increasing number of 'constabulary' missions for U.S. troops, such as in Kosovo above, must be considered an integral element in Pentagon force planning.

The shortcomings of this approach were underscored by the experience of Operation Allied Force in the Balkans. Precisely because the forces engaged there would not have been able to withdraw, reconstitute and redeploy to another operation – and because the operation consumed such a large part of overall Air Force aircraft – the Joint Chiefs of Staff concluded that the United States was running "unacceptable" risk in the event of war elsewhere. Thus, facing up to the realities of multiple constabulary missions will require a permanent allocation of U.S. armed forces.

Nor can the problem be solved by simply withdrawing from current constabulary missions or by vowing to avoid them in the future. Indeed, withdrawing from today's ongoing missions would be problematic. Although the no-fly-zone air operations over northern and southern Iraq have continued without pause for almost a decade, they remain an essential element in U.S. strategy and force posture in the Persian Gulf region. Ending these operations would hand Saddam Hussein an important victory, something any American leader would be loath to do. Likewise, withdrawing from the Balkans would place American leadership in Europe – indeed, the viability of NATO – in question. While none of these operations involves a mortal threat, they do engage U.S. national security interests directly, as well as engaging American moral interests.

Further, these constabulary missions are far more complex and likely to generate violence than traditional "peacekeeping" missions. For one, they demand American political leadership rather than that of the United Nations, as the failure of the UN mission in the Balkans and the relative success of NATO operations there attests. Nor can the United States assume a UN-like stance of neutrality; the preponderance of American power is so great and its global interests so wide that it cannot pretend to be indifferent to the political outcome in the Balkans, the Persian Gulf or even when it deploys forces in Africa. Finally, these missions demand forces basically configured for combat. While they also demand personnel with special language, logistics and other support skills, the first order of business in missions such as in the Balkans is to establish security, stability and order. American troops, in particular, must be regarded as part of an overwhelmingly powerful force.

With a decade's worth of experience both of the requirements for current constabulary missions and with the chaotic political environment of the post-Cold War era, the Defense Department is more than able to conduct a useful assessment to quantify the overall needs for forces engaged in constabulary duties. While part of the solution lies in repositioning existing forces, there is no escaping the conclusion that these new missions, unforeseen when the defense drawdown began a decade ago, require an increase in overall personnel strength and U.S. force structure.

Transformation Forces

The fourth element in American force posture – and certainly the one which holds the key to any longer-term hopes to extend the current *Pax Americana* – is the mission to transform U.S. military forces to meet new geopolitical and technological challenges. While the prime directive for transformation will be to design and deploy a global missile defense system, the effects of information and other advanced technologies promise to revolutionize the nature of conventional armed forces. Moreover, the need to create weapons systems optimized for operations in the Pacific theater will create requirements quite distinct from the current generation of systems designed for warfare on the European continent and those new systems like the F-22 fighter that also were developed to meet late-Cold-War needs.

Although the basic concept for a system of global missile defenses capable of defending the United States and its allies against the threat of smaller and simpler ballistic missiles has been well understood since the late 1980s, a decade has been squandered in developing the requisite technologies. In fact, work on the key elements of such a system, especially those that would operate in space, has either been so slowed or halted completely, so that the process of deploying robust missile defenses remains a long-term project. If for no other reason, the mission to create such a missile defense system should be considered a matter of military transformation.

As will be argued more fully below, effective ballistic missile defenses will be the central element in the exercise of American power and the projection of U.S. military forces abroad. Without it, weak states operating small arsenals of crude ballistic missiles, armed with basic nuclear warheads or other weapons of mass destruction, will be a in a strong position to deter the United States from using conventional force, no matter the technological or other advantages we may enjoy. Even if such enemies are merely able to threaten American allies rather than the United States homeland itself, America's ability to project power will be deeply compromised. Alas, neither Administration strategists nor Pentagon force planners seem to have grasped this elemental point; certainly, efforts to fund, design and develop an effective system of missile defenses do not reflect any sense of urgency. Nonetheless, the first task in transforming U.S. military to meet the technological and strategic realities of a new century is to create such a system.

For the United States to retain the technological and tactical advantages it now enjoys, the transformation effort must be considered as pressing a military mission as preparing for today's theater wars.

Creating a system of global missile defenses is but the first task of transformation; the need to reshape U.S. conventional forces is almost as pressing. For, although American armed forces possess capabilities and enjoy advantages that far surpass those of even our richest and closest allies, let alone our declared and potential enemies, the combination of technological and strategic change that marks the new century places these advantages at risk. Today's U.S. conventional forces are masters of a mature paradigm of warfare, marked by the dominance of armored vehicles, aircraft carriers and, especially, manned tactical aircraft, that is beginning to be overtaken by a new paradigm, marked by long-range precision strikes and the proliferation of missile technologies. Ironically, it has been the United States that has pioneered this new form of high-technology conventional warfare: it was suggested by the 1991 Gulf War and has been revealed more fully by the operations of the past decade. Even the "Allied Force" air war for Kosovo showed a distorted version of the emerging paradigm of warfare.

Yet even these pioneering capabilities are the residue of investments first made in the mid- and late 1980s; over the past decade the pace of innovation within the Pentagon has slowed measurably. In part, this is due to reduced defense budgets, the overwhelming dominance of U.S. forces today, and the multiplicity of constabulary missions. And without the driving challenge of the Soviet military threat, efforts at innovation have lacked urgency. Nonetheless, a variety of new potential challenges can be clearly foreseen. The Chinese military, in particular, seeks to exploit the revolution in military affairs to offset American advantages in naval and air power, for example. If the United States is to retain the technological and tactical advantages it now enjoys in large-scale conventional conflicts, the effort at transformation must be considered as pressing a mission as preparing for today's potential theater wars or constabulary missions – indeed, it must receive a significant, separate allocation of forces and budgetary resources over the next two decades.

In addition, the process of transformation must proceed from an appreciation of American strategy and political goals. For example, as the leader of a global

network of alliances and strategic partnerships, U.S. armed forces cannot retreat into a "Fortress America." Thus, while long-range precision strikes will certainly play an increasingly large role in U.S. military operations, American forces must remain deployed abroad, in large numbers. To remain as the leader of a variety of coalitions, the United States must partake in the risks its allies face; security guarantees that depend solely upon power projected from the continental United States will inevitably become discounted.

Moreover, the process of transformation should proceed in a spirit of competition among the services and between service and joint approaches. Inevitably, new technologies may create the need for entirely new military organizations; this report will argue below that the emergence of space as a key theater of war suggests forcefully that, in time, it may be wise to create a separate "space service." Thus far, the Defense Department has attempted to take a prematurely joint approach to transformation. While it is certain that new technologies will allow for the closer combination of traditional service capabilities, it is too early in the process of transformation to choke off what should be the healthy and competitive face of "interservice rivalry." Because the separate services are the military institutions most attuned to providing forces designed to carry out the specific missions required by U.S. strategy, they are in fact best equipped to become the engines of transformation and change within the context of enduring mission requirements.

Finally, it must be remembered that the process of transformation is indeed a process: even the most vivid view of the armed forces of the future must be grounded in an understanding of today's forces. In general terms, it seems likely that the process of transformation will take several decades and that U.S. forces will continue to operate many, if not most, of today's weapons systems for a decade or more. Thus, it can be foreseen that the process of transformation will in fact be a two-stage process: first of transition, then of more thoroughgoing transformation. The break-point will come when a preponderance of new weapons systems begins to enter service, perhaps when, for example, unmanned aerial vehicles begin to be as numerous as manned aircraft. In this regard, the Pentagon should be very wary of making large investments in new programs – tanks, planes, aircraft carriers, for example – that would commit U.S. forces to current paradigms of warfare for many decades to come.

In conclusion, it should be clear that these four essential missions for maintaining American military preeminence are quite separate and distinct from one another – none should be considered a "lesser included case" of another, even though they are closely related and may, in some cases, require similar sorts of forces. Conversely, the failure to provide sufficient forces to execute these four missions must result in problems for American strategy. The failure to build missile defenses will put America and her allies at grave risk and compromise the exercise of American power abroad. Conventional forces that are insufficient to fight multiple theater wars simultaneously cannot protect American global interests and allies. Neglect or withdrawal from constabulary missions will increase the likelihood of larger wars breaking out and encourage petty tyrants to defy American interests and ideals. And the failure to prepare for tomorrow's challenges will ensure that the current *Pax Americana* comes to an early end.

III
REPOSITIONING TODAY'S FORCE

Despite the centrality of major theater wars in conventional-force planning, it has become painfully obvious that U.S. forces have other vital roles to play in building an enduring American peace. The presence of American forces in critical regions around the world is the visible expression of the extent of America's status as a superpower and as the guarantor of liberty, peace and stability. Our role in shaping the peacetime security environment is an essential one, not to be renounced without great cost: it will be difficult, if not impossible, to sustain the role of global guarantor without a substantial overseas presence. Our allies, for whom regional problems are vital security interests, will come to doubt our willingness to defend their interests if U.S. forces withdraw into a Fortress America. Equally important, our worldwide web of alliances provides the most effective and efficient means for exercising American global leadership; the benefits far outweigh the burdens. Whether established in permanent bases or on rotational deployments, the operations of U.S. and allied forces abroad provide the first line of defense of what may be described as the "American security perimeter."

Since the collapse of the Soviet empire, this perimeter has expanded slowly but inexorably. In Europe, NATO has expanded, admitting three new members and acquiring a larger number of "adjunct" members through the Partnership for Peace program. Tens of thousands of U.S, NATO and allied troops are on patrol in the Balkans, and have fought a number of significant actions there; in effect, the region is on the road to becoming a NATO protectorate. In the Persian Gulf region, the presence of American forces, along with British and French units, has become a semi-permanent fact of life. Though the immediate mission of those forces is to enforce the no-fly zones over northern and southern Iraq, they represent the long-term commitment of the United States and its major allies to a region of vital importance. Indeed, the United States has for decades sought to play a more permanent role in Gulf regional security. While the unresolved conflict with Iraq provides the immediate justification, the need for a substantial American force presence in the Gulf transcends the issue of the regime of Saddam Hussein. In East Asia, the pattern of U.S. military operations is shifting to the south: in recent years, significant naval forces have been sent to the region around Taiwan in response to Chinese provocation, and now a contingent of U.S. troops is supporting the Australian-led mission to East Timor. Across the globe, the trend is for a larger U.S. security perimeter, bringing with it new kinds of missions.

Guarding the American security perimeter today – and tomorrow – will require changes in U.S. deployments and installations overseas.

The placement of U.S. bases has yet to reflect these realities – if anything, the

worldwide archipelago of U.S. military installations has contracted as the perimeter of U.S. security interests has expanded. American armed forces far from ideally positioned to respond to the needs of the times, but the Pentagon remains tied to levels of forward-deployed forces that bear little relationship to military capabilities or realities. The air war in Kosovo provides a vivid example: during Operation Allied Force, U.S. and NATO warplanes were spread out across the continent of Europe and even into Asiatic Turkey, forced into a widely dispersed and very complex pattern of operations – requiring extensive refueling efforts and limiting the campaign itself – by a lack of adequate air bases in southeastern Europe. The network of American overseas installations and deployments requires reconfiguration. Likewise, the structure of U.S. forces needs to be reconsidered in light of the changing mission of the American military. Overall U.S. military force structure must be rationalized to accommodate the fact that the presence of these forces in far-flung outposts or on patrol overseas may be as important as their theater-warfighting missions, especially in Europe. The requirements of Balkans stabilization, NATO expansion (including Partnership for Peace) and other missions within the theater render it unrealistic to expect U.S. forces in Europe to be readily available for other crises, as formal Pentagon planning presumes. The continuing challenges from Iraq also make it unwise to draw down forces in the Gulf dramatically. Securing the American perimeter today – and tomorrow – will necessitate shifts in U.S. overseas operations.

American armed forces stationed abroad and on rotational deployments around the world should be considered as the first line of American defenses, providing reconnaissance and security against the prospect of larger crises and conducting stability operations to prevent their outbreak. These forces need to be among the most ready, with finely honed warfighting skills – and only forces configured for combat indicate the true American commitment to our allies and their security interests – but they also need to be highly versatile and mobile with a broad range of capabilities; they are the cavalry on the new American frontier. In the event of a large-scale war, they must be able to shape the battlefield while reinforcing forces based primarily in the United States arrive to apply decisive blows to the enemy. Not only must they be repositioned to reflect the shifting strategic landscape, they also must be reorganized and restructured to reflect their new missions and to integrate new technologies.

Europe

At the end of the Cold War, the United States maintained more than 300,000 troops in Europe, including two Army corps and 13 Air Force wings plus a variety of independent sub-units, primarily based in Germany. The central plain of Germany was the central theater of the Cold War and, short of an all-out nuclear exchange, a Soviet armored invasion of western Europe the principal threat faced by the United States and its NATO allies. Today Germany is unified, Poland and the Czech Republic members of NATO, and the Russian army has retreated to the gates of Moscow while becoming primarily engaged in the Caucasus and to the south more generally. Though northern and central Europe are arguably more stable now than at any time in history, the majority of American forces in Europe are still based in the north, including a theater army and a corps of two heavy divisions in Germany and just five Air Force wings, plus a handful of other, smaller units.

But while northern and central Europe have remained extraordinarily stable, and the eastern Germany, Poland and the Czech Republic have become reintegrated into the mainstream of European political, economic and cultural life, the situation in southeastern Europe has been a tumultuous one. The Balkans, and southeastern Europe more

generally, present the major hurdle toward the creation of a Europe "whole and free" from the Baltic to the Black Sea. The delay in bringing security and stability to south-eastern Europe has not only prevented the consolidation of the victory in the Cold War, it has created a zone of violence and conflict and introduced uncertainty about America's role in Europe.

The continuing deployment of forces in the Balkans reflects a U.S. commitment to the region's security. By refusing to treat these deployments as a shift of the permanent American presence in Europe, the Clinton Administration has increased the burden on the armed services exponentially.

At the same time, the continuing deployment of forces in the Balkans reflects what is in fact a long-term American commitment to the security of the region. But by refusing to treat these deployments as an expansion – or shift – of the permanent American presence in Europe, reflecting an enduring interest, the Clinton Administration has increased the burden on the armed services exponentially. Rather than recognizing the need to reposition and reconfigure U.S. forces in Europe away from the north to the southeast, current policy has been to rotate units in and out of the Balkans, destroying their readiness to perform other missions and tying up an increasingly large slice of a significantly reduced force.

Despite the shifting focus of conflict in Europe, a requirement to station U.S. forces in northern and central Europe remains. The region is stable, but a continued American presence helps to assure the major European powers, especially Germany, that the United States retains its longstanding security interest in the continent. This is especially important in light of the nascent European moves toward an independent defense "identity" and policy; it is important that NATO not be replaced by the European Union, leaving the United States without a voice in European security affairs. In addition, many of the current installations and facilities provide critical infrastructure for supporting U.S. forces throughout Europe and for reinforcement in the event of a crisis. From airbases in England and Germany to headquarters and Army units in Belgium and Germany, much of the current network of U.S. bases in northern and central retains its relevance today as in the Cold War.

However, changes should be made to reflect the larger shift in European security needs. U.S. Army Europe should be transformed from a single corps of two heavy divisions and support units into versatile, combined-arms brigade-sized units capable of independent action and movement over operational distances. U.S. Air Force units in Europe need to undergo a similar reorientation. The current infrastructure in England and Germany should be retained. The NATO air base at Aviano, Italy, long the primary location for air operations over the Balkans, needs to be substantially improved. As with ground forces, serious consideration should be given to establishing a permanent and modern NATO and U.S. airfield in Hungary for support to central and southern Europe. In Turkey, Incirlik Air Base, home of Operation Northern Watch, also needs to be expanded, improved and perhaps supplemented with a new base in eastern Turkey.

Although U.S. Navy and Marine forces generally operate on a regular cycle of deployments to European waters, they rely on a network of permanent bases in the region, especially in the Mediterranean. These should be retained, and consideration given to establishing a more robust presence in the Black Sea. As NATO expands and the pattern of U.S. military operations in Europe continues to shift to the south and east, U.S. naval presence in the Black Sea is sure to increase. However, as will be discussed in detail below, this presence should be based less frequently on full-scale carrier battle groups.

Persian Gulf

In the decade since the end of the Cold War, the Persian Gulf and the surrounding region has witnessed a geometric increase in the presence of U.S. armed forces, peaking above 500,000 troops during Operation Desert Storm, but rarely falling below 20,000 in the intervening years. In Saudi Arabia, Kuwait and other neighboring states roughly 5,000 airmen and a large and varied fleet of Air Force aircraft patrol the skies of Operation Southern Watch, often complemented by Navy aircraft from carriers in the Gulf and, during the strikes reacting to Saddam Hussein's periodic provocations, cruise missiles from Navy surface vessels and submarines. Flights from Turkey under Northern Watch also involve substantial forces, and indeed more often result in combat actions.

After eight years of no-fly-zone operations, there is little reason to anticipate that the U.S. air presence in the region should diminish significantly as long as Saddam Hussein remains in power. Although Saudi domestic sensibilities demand that the forces based in the Kingdom nominally remain rotational forces, it has become apparent that this is now a semi-permanent mission. From an American perspective, the value of such bases would endure even should Saddam pass from the scene. Over the long term, Iran may well prove as large a threat to U.S. interests in the Gulf as Iraq has. And even should U.S.-Iranian relations improve, retaining forward-based forces in the region would still be an essential element in U.S. security strategy given the longstanding American interests in the region.

Almost a decade after the end of the Gulf War, no-fly-zone operations continue over northern and southern Iraq.

In addition to the aircraft enforcing the no-fly zone, the United States now also retains what amounts to a near-permanent land force presence in Kuwait. A substantial heavy task force with almost the strength of a brigade rotates four times a year on average for maneuvers and joint training with the Kuwaiti army, with the result that commanders now believe that, in conjunction with the Southern Watch fleet, Kuwait itself is strongly defended against any Iraqi attack. With a minor increase in strength, more permanent basing arrangements, and continued no-fly and "no-drive" zone enforcement, the danger of a repeat short-warning Iraqi invasion as in 1990 would be significantly reduced.

With the rationalization of ground-based U.S. air forces in the region, the demand for carrier presence in the region can be relaxed. As recent strikes against Iraq demonstrate, the preferred weapon for punitive raids is

the cruise missile, supplemented by stealthy strike aircraft and longer-range Air Force strike aircraft. Carrier aircraft are most useful in sustaining a campaign begun with missiles and stealth strike aircraft, indicating that a surface action group capable of launching several hundred cruise missiles is the most valuable naval presence in the Gulf. With a substantial permanent Army ground presence in Kuwait, the demands for Marine presence in the Gulf could be scaled back as well.

East Asia

Current U.S. force planning calls for the stationing of approximately 100,000 U.S. troops in Asia, but this level reflects Pentagon inertia and the legacy of the Cold War more than serious thinking about current strategic requirements or defense needs. The prospect is that East Asia will become an increasingly important region, marked by the rise of Chinese power, while U.S. forces may decline in number.

Conventional wisdom has it that the 37,000-man U.S. garrison in South Korea is merely there to protect against the possibility of an invasion from the North. This remains the garrison's central mission, but these are now the only U.S. forces based permanently on the Asian continent. They will still have a vital role to play in U.S. security strategy in the event of Korean unification and with the rise of Chinese military power. While Korea unification might call for the reduction in American presence on the peninsula and a transformation of U.S force posture in Korea, the changes would really reflect a *change* in their mission – and changing technological realities – not the *termination* of their mission. Moreover, in any realistic post-unification scenario, U.S. forces are likely to have some role in stability operations in North Korea. It is premature to speculate on the precise size and composition of a post-unification U.S. presence in Korea, but it is not too early to recognize that the presence of American forces in Korea serves a larger and longer-range strategic purpose. For the present, any reduction in capabilities of the current U.S. garrison on the peninsula would be unwise. If anything, there is a need to bolster them, especially with respect to their ability to defend against missile attacks and to limit the effects of North Korea's massive artillery capability. In time, or with unification, the structure of these units will change and their manpower levels fluctuate, but U.S. presence in this corner of Asia should continue.

A similar rationale argues in favor of retaining substantial forces in Japan. In recent years, the stationing of large forces in Okinawa has become increasingly controversial in Japanese domestic politics, and while efforts to accommodate local sensibilities are warranted, it is essential to retain the capabilities U.S. forces in Okinawa represent. If the United States is to remain the guarantor of security in Northeast Asia, and to hold together a *de facto* alliance whose other main pillars are Korea and Japan maintaining forward-based U.S. forces is essential.

In Southeast Asia, American forces are too sparse to adequately address rising security requirements. Since its withdrawal from the Philippines in 1992, the United States has not had a significant permanent military presence in Southeast Asia. Nor can U.S. forces in Northeast Asia easily operate in or rapidly deploy to Southeast Asia – and certainly not without placing their commitments in Korea at risk. Except for routine patrols by naval and Marine forces, the security of this strategically significant and increasingly tumultuous region has suffered from American neglect. As the crisis in East Timor demonstrated, even the strongest of our allies in the region – from Japan to South Korea to Australia – possess limited military capabilities and little ability to project their forces rapidly in a crisis or sustain them over time. At the same time, the East Timor crisis and the larger question of political reform in

Indonesia and Malaysia highlight the volatility of the region. Finally, Southeast Asia region has long been an area of great interest to China, which clearly seeks to regain influence in the region. In recent years, China has gradually increased its presence and operations in the region.

Raising U.S. military strength in East Asia is the key to coping with the rise of China to great-power status. For this to proceed peacefully, U.S. armed forces must retain their military preeminence and thereby reassure our regional allies. In Northeast Asia, the United States must maintain and tighten its ties with the Republic of Korea and Japan. In Southeast Asia, only the United States can reach out to regional powers like Australia, Indonesia and Malaysia and others. This will be a difficult task requiring sensitivity to diverse national sentiments, but it is made all the more compelling by the emergence of new democratic governments in the region. By guaranteeing the security of our current allies and newly democratic nations in East Asia, the United States can help ensure that the rise of China is a peaceful one. Indeed, in time, American and allied power in the region may provide a spur to the process of democratization inside China itself.

In Southeast Asia, American forces are too sparse to address rising security requirements adequately.

In sum, it is time to increase the presence of American forces in Southeast Asia. Control of key sea lines of communication, ensuring access to rapidly growing economies, maintaining regional stability while fostering closer ties to fledgling democracies and, perhaps most important, supporting the nascent trends toward political liberty are all enduring security interests for America. No U.S. strategy can constrain a Chinese challenge to American regional leadership if our security guarantees to Southeast Asia are intermittent and U.S. military presence a periodic affair. For this reason, an increased naval presence in Southeast Asia, while necessary, will not be sufficient; as in the Balkans, relying solely on allied forces or the rotation of U.S. forces in stability operations not only increases the stress on those forces but undercuts the political goals of such missions. For operational as well as political reasons, stationing rapidly mobile U.S. ground and air forces in the region will be required.

Moreover, a return to Southeast Asia will add impetus to the slow process of alliance-building now afoot in the region. It is conventional wisdom that the nations of Southeast Asia are resistant to a NATO-like regional alliance, but the regional response to the East Timor crisis – including that of the new Indonesian government – has been encouraging. Indeed, forces from the Philippines have replaced those from Australia as the lead element in the UN peacekeeping mission there. And certainly efforts through the Asian Regional Forum suggest a trend to closer regional coordination that might develop into a more permanent, alliance-like arrangement. In this process, the United States has the key role to play. A heightened U.S. military presence in Southeast Asia would be a strong spur to regional security cooperation, providing the core around which a *de facto* coalition could jell.

Deployment Bases

As a supplement to forces stationed abroad under long-term basing arrangements, the United States should seek to establish a network of "deployment bases" or "forward operating bases" to increase the reach of current and future forces. Not only will such an approach improve the ability to project force to outlying regions, it will help circumvent the political, practical and financial constraints on expanding the network of American bases overseas.

These deployment or forward operating bases can range from relatively modest agreements with other nations as well as modest improvements to existing facilities and bases. Prepositioned materiel also would speed the initial deployment and improve the sustainability of U.S. forces when deployed for training, joint training with the host nation, or operations in time of crisis. Costs for these improvements can be shared with the host nation and be offset as part of U.S. foreign security assistance, and would help reduce the requirement for U.S. forces to deploy to "bare bones" facilities. Such installations would be a "force multiplier" in power projection operations, as well as help solidify political and security ties with host nations.

It would be wise to reduce the frequency of carrier presence in the Mediterranean and the Gulf while increasing U.S. Navy presence in the Pacific.

Currently, U.S. Southern Command, the Pentagon's regional command for Latin America, is moving to implement a plan for "forward operating locations" to make up for the loss of Howard Air Force Base in the wake of the U.S. withdrawal from Panama and the return of the Canal Zone. Indeed, sustaining effective counterdrug air operations will be difficult after the loss of Howard until arrangements for the new locations are in place. To achieve full coverage of the region for counterdrug operations, the command plans to utilize airfields ranging from Puerto Rico to Ecuador.

In addition to securing agreements that permit adequate access for U.S. forces to airfields, the new locations must be capable of 24-hour, all-weather operations; have adequate air traffic control; have runways of at least 8000 feet that are capable of bearing heavy cargo aircraft; have modern refueling and emergency services; ramp space to park several AWACS-size planes and meet a variety of other requirements, including safe quarters and offices for American personnel. Yet the command believes that for a relatively small cost – perhaps $120 million for the first two of three planned bases – and with minimal permanent manning it can offset the loss of a strategic asset like Howard.

A recent study done for the Air Force indicates that a worldwide network of forward operating bases – perhaps more sophisticated and suited for combat operations than the counterdrug locations planned by SOUTHCOM – might cost $5 billion to $10 billion through 2010. The study speculates that some of the cost might be paid for by host nations anxious to cement ties with the United States, or, in Europe, be considered as common NATO assets and charged to the NATO common fund.

While it should be a clear U.S. policy that such bases are intended as a supplement to the current overseas base structure, they could also be seen as a precursor to an expanded structure. This might be attractive to skittish allies – as in the Persian Gulf region, where a similar system is in operation – for whom close ties with America provokes domestic political controversy. It would also increase the effectiveness of current U.S. forces in a huge region like Southeast Asia, supplementing naval operations in the region. Such a network also would greatly increase U.S. operational flexibility in times of conflict.

Rotational Naval Forces

The size of today's Navy and Marine Corps is driven primarily by the demands of current rotation policy; the requirement for 11-carrier Navy is a reflection of the perceived need to keep, on average, about

three carriers deployed at any one time. But because the carrier based in Japan is considered "deployed" even when in port and not at sea, the real ratio of total ships to ships at sea is closer to five- or six-to-one. Indeed, according to the Quadrennial Defense Review analysis, the requirements for Navy forces under "presence" missions exceeds the two-war requirement for Navy forces by about 20 percent.

Current rotation plans call for a continuous battle group presence in Northeast Asia and close to continuous presence in the Persian Gulf and Mediterranean Sea. However, significant changes in Navy carrier presence and rotation patterns are called for. Given the ability to station land-based forces in Europe and the Gulf, and the size and nature of the East Asia theater, it would be wise to reduce the frequency of carrier presence in the Mediterranean and the Gulf while increasing U.S. Navy presence in the Pacific. Further, it is preferable, for strategic and operational reasons, to create a second major home port for a carrier battle group in the southern Pacific, perhaps in Australia or the Philippines. Generally speaking, the emphasis of Navy operations, and carrier operations in particular, should be increasingly weighted toward the western Pacific. Marine deployments would follow suit.

Secondarily, the Navy should begin to consider other ways of meeting its vital presence missions than with carrier battle groups. As cruise missiles increasingly become the Navy's first-strike weapon of choice, the value of cruise missile platforms as a symbol of American might around the world are coming to surpass the deterrent value of the carrier. Unfortunately, during the course of the post-Cold-War drawdown, the Navy has divested itself of relatively more surface combatants and submarines than aircraft carriers. Though this makes sense in terms of carrier operations – Aegis-equipped cruisers and destroyers have far greater capabilities and range than previous generations of ships, for example – this now limits the Navy's ability to transition to new ways of conducting both its presence and potential wartime missions.

Moreover, as the Navy introduces new classes of ships, its manpower requirements – one of the important factors in determining the length of deployments and thus overall Navy rotational policy – will be reduced. The planned DD-21 destroyer will cut crew size from 300 to 100. Reduced crew size, as well as improved overall ship performance, will increase the opportunities to rotate crews while keeping ships deployed; the complexity of crew operations involving 100 sailors and officers is far less than, for example, the 6,000-man crew of a carrier plus its air wing. In sum, new capabilities will open up new ways of conducting missions that will allow for increased naval presence at a lower cost.

IV
REBUILDING TODAY'S ARMED SERVICES

Executing the variety of missions outlined above depends upon the capabilities of the U.S. armed services. For the past decade, the health of the armed services has steadily declined. Not merely have their budgets been dramatically reduced, their force structures cut and their personnel strength sapped, modernization programs starved and efforts at transformation strangled, but the quality of military life, essential for preserving a volunteer force, has been degraded. From barracks to headquarters to maintenance bay, the services' infrastructure has suffered from neglect. The quality of military housing, especially abroad, ill becomes a great nation. The other sinews of a strong service, particularly including the military education and training systems, have been disproportionately and shortsightedly reduced. Shortages of manpower result in soldiers, sailors, airmen and Marines spending increased amounts of time on base maintenance – mowing grass, repairing roofs, "painting rocks." Most disappointing of all, military culture and the confidence of service members in their senior leaders is suffering. As several recent studies and surveys have demonstrated, civil-military relations in contemporary America are increasingly tense.

Army: To 'Complete' Europe And Defend the Persian Gulf

Of all the armed services, the Army has been most profoundly changed by the end of the Cold War and the collapse of the Soviet empire in Eastern Europe. The Army's active-duty strength has been reduced by 40 percent and its European garrison by three quarters. At the end of the Cold War, the Army budget was 50 percent higher than it is this year; its procurement spending almost 70 percent higher.

At the same time, the Army's role in post-Cold-War military operations remains the measure of American geopolitical commitment. In the 1991 Gulf War, the limits of Bush Administration policy were revealed by the reluctance to engage in land combat and the limit on ground operations within the Kuwait theater. In the Balkans, relatively short air campaigns have been followed by extended ground operations; even the 78 days of Operation Allied Force pale in comparison to the long-term effort to stabilize Kosovo. In short, the value of land power continues to appeal to a global superpower, whose security interests rest upon maintaining and expanding a world-wide system of alliances as well as on the ability to win wars. While maintaining its combat role, the U.S. Army has acquired new missions in the past decade – most immediately, missions associated with completing the task of creating a Europe "whole and free" and defending American interests in the Persian Gulf and Middle East.

Elements of U.S. Army Europe should be redeployed to Southeast Europe, while a permanent unit should be based in the Persian Gulf region.

These new missions will require the continued stationing of U.S. Army units abroad. Although these units should be reconfigured and repositioned to reflect current realities, their value as a representation of America's role as the prime guarantor of security is as great as their immediate war-fighting capabilities. Indeed, the greatest problem confronting the Army today is providing sufficient forces for both these vital missions; the Army is simply too small to do both well.

These broad missions will continue to justify the requirement for a large active U.S. Army. The Army's increasing use of reserve component forces for these constabulary missions breaks the implied compact with reservists that their role is to serve as a hedge against a genuine military emergency. As long as the U.S. garrisons in the Balkans, for example, require large numbers of linguists, military police, civil affairs and other specialists, the active-duty Army must boost its ranks of soldiers with these skills. Likewise, as high-intensity combat changes, the Army must find new ways to recruit and retain soldiers with high-technology skills, perhaps creating partnerships with industry for extremely skilled reservists, or considering some skills as justifying a warrant-officer, rather than an enlisted, rank structure. In particular, the Army should:

- **Be restored in active-duty strength and structure to meet the requirements of its current missions. Overall active strength should rise to approximately 525,000 soldiers from the current strength of 475,000. Much of this increase should bolster the over-deployed and under-manned units that provide combat support and combat service support, such as military intelligence, military police, and other similar units.**

- **Undertake selective modernization efforts, primarily to increase its tactical and operational mobility and increase the effectiveness of current combat systems through "digitization" – the process of creating tactical information networks. The Army should accelerate its plans to purchase medium-weight vehicles, acquire the Comanche helicopter and the HIMARS rocket-artillery system; likewise, the heavy Crusader artillery system, though a highly capable howitzer, is an unwise investment given the Army's current capabilities and future needs, and should be canceled.**

- **Improve the combat readiness of current units by increasing personnel strength and revitalizing combat training.**

- **Make efforts to improve the quality of soldier life to sustain the current "middle class," professional Army.**

- **Be repositioned and reconfigured in light of current strategic realities: elements of U.S. Army Europe should be redeployed to Southeast Europe, while a permanent unit should be based in the Persian Gulf region; simultaneously, forward-deployed Army units should be reconfigured to be better capable of independent operations that include ongoing constabulary missions as well as the initial phases of combat.**

- **Reduce the strength of the Army National Guard and Army Reserve, yet recognize that these components are meant to provide a hedge against a genuine, large-scale, unanticipated military emergency; the continuing reliance on large numbers of reservists for constabulary missions is inappropriate and short-sighted.**

- **Have its budget increased from the current level of $70 billion annually to $90 to $95 billion per year.**

The Current State of the Army

Measuring by its ability to perform any of the missions outlined above – overseas presence, fighting major theater wars, transforming for the future – the Army today is ill prepared. The most immediate problem is the decline in current readiness. Until the spring of 1998, the Army had managed to contain the worst effects of frequent deployments, keeping its so-called "first-to-fight" units ready to react to a crisis that threatened to become a major theater war. But now, as recently retired Army Chief of Staff Gen. Dennis Reimer explained to Congress:

> *[C]ommanders Army-wide report that they are reducing the frequency, scope, and duration of their exercises…. Additionally, commanders are not always able to make training as realistic and demanding as they would like. In some cases, commands are not able to afford the optimum mix of simulations to live-fire training events, resulting in less-experienced staffs. Several commands report that they are unable to afford the participation of their aviation units in Combat Training Center rotations. Overall, affordable training compromises are lowering the training proficiency bar and resulting in inexperience….Already, readiness at the battalion level is starting to decline – a fact that is not going unnoticed at our Combat Training Centers.*

Reimer

In recent years, both the quality and quantity of such training has diminished. Typically, in prior years, a rotational unit might have eight battalion-level field training "battles" prior to its Fort Irwin rotation, and another eight while at the training center. Today, heavy forces almost never conduct full battalion field exercises, and now are lucky to get more than six at the National Training Center.

Like the other services, the Army continues to be plagued by low levels of manning in critical combat and maintenance specialties. Army leaders frankly admit that they have too few soldiers to man their current force structure, and shortages of NCOs and officers are increasingly common. For example, in Fiscal Year 1997, the Army had only 67 percent to 88 percent of its needs in the four maintenance specialties for its tanks and mechanized infantry vehicles. In the officer ranks, there are significant shortfalls in the captain and major grades. The result of these shortages in the field is that junior officers and NCOs are being asked to assume the duties of the next higher grade; the "ultimate effect," reported Gen. Reimer, "is a reduction in experience, particularly at the…'tip of the spear.'"

The Army's ability to meet its major-war requirements, particularly on the timetables demanded by the war plans of the theater commanders-in-chief, is uncertain at best. Although on paper the Army can meet these requirements, the true state of affairs is more complex. The major-theater-war review conducted for the QDR assumed that each unit would arrive on the battlefield fully trained and ready, but manpower and training shortages across the Army make that a doubtful proposition, at least without delays in deployment. Even could the immediate manpower shortages be remedied, any attempt to improve training – as was done even in the run-up to Operation Desert Storm – would prove to be a significant bottleneck. The Army's maneuver training centers are not able to increase capacity sufficiently or rapidly enough. Under the current two-war metric, high-intensity combat is envisioned as a "come-as-you-are" affair, and the Army today is significantly less well prepared for such wars than it was in 1990.

Army Forces Based In the United States

The primary missions of Army units based in the United States are to rapidly

reinforce forward-deployed units in times of crisis or combat and to provide units capable of reacting to unanticipated contingencies. In addition, the service must continue to raise, train and equip all Army forces, including those of the Army National Guard and Army Reserve. While the reforming the posture of its forces abroad is perhaps the largest task facing the Army for the immediate future, it is inevitably intertwined with the need to rebuild and reconfigure the Army at home.

The need to respond with decisive force in the event of a major theater war in Europe, the Persian Gulf or East Asia will remain the principal factor in determining Army force structure for U.S.-based units. However one judges the likelihood of such wars occurring, it is essential to retain sufficient capabilities to bring them to a satisfactory conclusion, including the possibility of a decisive victory that results in long-term political or regime change. The current stateside active Army force structure – 23 maneuver brigades – is barely adequate to meet the potential demands. Not only are these units few in number, but their combat readiness has been allowed to slip dangerously over recent years. Manning levels have dropped and training opportunities have been diminished and degraded. These units need to be returned to high states of readiness and, most importantly, must regain their focus on their combat missions.

Because the divisional structure still remains an economical and effective organization in large-scale operations as well as an efficient administrative structure, the division should remain the basic unit for most stateside Army forces, even while the service creates new, smaller independent organizations for operations abroad. The Army is currently undergoing a redesign of the basic divisional structure, reducing the size of the basic maneuver battalion in response to the improvements that advanced technologies and the untapped capabilities of current systems permit. This is a modest but important step that will make these units

The Army needs to restore units based in the United States – those needed in the event of a major theater war – to high states of readiness.

more deployable, and the Army must continue to introduce similar modifications. Moreover, Army training should continue its emphasis on combined-arms, task-force combat operations. In the continental United States, Army force structure should consist of three fully-manned, three-brigade heavy divisions; two light divisions; and two airborne divisions. In addition, the stateside Army should retain four armored cavalry regiments in its active structure, plus several experimental units devoted to transformation activities. This would total approximately 27 ground maneuver brigade-equivalents.

Yet such a force, though capable of delivering and sustaining significant combat power for initial missions, will remain inadequate to the full range of strategic tasks facing the Army. Thus, the service must increasingly rely on Guard units to execute a portion of its potential warfighting missions, not seek to foist overseas presence missions off on what should remain part-time soldiers. To allow the Army National Guard to play its essential role in fighting large-scale wars, the Army must take a number of steps to ensure the readiness of Guard units. The first is to better link the Guard to the active-duty force, providing adequate

resources to increase the combat effectiveness of large Guard units, perhaps to include the partial manning of the first-to-deploy Guard brigades with an active command cadre. Secondly, the Guard's overall structure must be adjusted and the overall number of Army National Guard units – and especially Guard infantry divisions – reduced. This would not only eliminate unnecessary formations but would permit improved manning of the first-to-fight Guard units, which need to be manned at levels significantly above 100 percent personnel strength to allow for timely deployment during crises and war.

In addition, the Army needs to rationalize the missions of the Army Reserve. Without the efforts of Reservists over the past decade, the Army's ability to conduct the large number of contingency operations it has faced would be severely compromised. Yet the effort to rationalize deployments, as discussed in the previous section, would also result in a reduction of demand for Army Reservists, particularly those with highly specialized skills. Once the missions in the Balkans, for example, are admitted to be long-term deployments, the role of Army Reserve forces should be diminished and the active Army should assume all but a very small share of the mission.

In sum, the missions of the Army's two reserve components must be adjusted to post-Cold-War realities as must the missions of the active component. The importance of these citizen-soldiers in linking an increasingly professional force to the mainstream of American society has never been greater, and the failure to make the necessary adjustments to their mission has jeopardized those links. The Army National Guard should retain its traditional role as a hedge against the need for a larger-than-anticipated force in combat; indeed, it may play a larger role in U.S. war-planning than heretofore. It should not be used primarily to provide combat service support to active Army units engaged in current operations. A return to its traditional role would allow for a further modest strength reduction in the Army National Guard. Such a move would also lessen the strain of repeated deployments in contingency operations, which is jeopardizing the model of the part-time soldier upon which Guard is premised. Similarly, the Army Reserve should retain its traditional role as a federal force, a supplement to the active force, but demands for individual augmentees for contingency operations reduced through improvements to active Army operations and deployments, organizations, and even added personnel strength. In the event that American forces become embroiled in two large-scale wars at once, or nearly at once, Army reserve components may provide the edge for decisive operations. Such a capability is a cornerstone of U.S. military strategy, not to be frittered away in ongoing contingency operations.

Returning the National Guard to its traditional role would allow for a reduction in strength while lessening the strain of repeated contingency operation deployments.

A second mission for Army units based in the United States is to respond to unanticipated contingencies. With more forward-based units deployed along an expanded American security perimeter around the globe, these unforeseen crises should be less debilitating. Units like the 82nd and 101st Airborne divisions and the Army's two light infantry divisions, as well as the small elements of the 3rd Mechanized Infantry Division, that are kept on high alert, will continue to provide these needed capabilities. So will Army special operations units such as the 75th Ranger Regiment. Moreover, the creation of middle-weight, independent units will begin

the process of transforming the Army for future contingency needs. As the transformation process matures, a wider variety of Army units will be suitable for unanticipated contingency operations.

Forward-based Forces

American military presence abroad draws heavily on ground forces and the Army, which is the service best suited to these long-term missions. In the post-Cold-War environment, these forward-based forces are, in essence, conducting reconnaissance and security missions. The units involved are required to maintain peace and stability in the regions they patrol, provide early warning of imminent crises, and to shape the early stages of any conflict that might occur while additional forces are deployed from the United States or elsewhere. By virtue of this mission, these units should be self-contained, combined-arms units with a wide variety of capabilities, able to operate over long distances, with sophisticated means of communication and access to high levels of U.S. intelligence. Currently, most forward-based Army units do not meet this description.

Such requirements suggest that such units should be approximately brigade or regimental-sized formations, perhaps 5,000 strong. They will need sufficient personnel strength to be able to conduct sustained traditional infantry missions, but with the mobility to operate over extended areas. They must have enough direct firepower to dominate their immediate tactical situation, and suitable fire support to prevent such relatively small and independent units from being overrun. However, the need for fire support need not entail large amounts of integral artillery or other forms of supporting firepower. While some artillery will prove necessary, a substantial part of the fire support should come from Army attack aviation and deeper fixed-wing interdiction. The combination of overwhelming superiority in direct-fire engagements, typified by the performance of the Bradley fighting vehicle and M1 Abrams tank in the Gulf War (and indeed, in the performance of the Marines' Light Armored Vehicle), as well as the improved accuracy and lethality of artillery fires, plus the capabilities of U.S. strike aircraft, will provide such units with a very substantial combat capability.

These forward-based, independent units will be increasingly built around the acquisition and management of information. This will be essential for combat operations – precise, long-range fires require accurate and timely intelligence and robust communications links – but also for stability operations. Units stationed in the Balkans, or Turkey, or in Southeast Asia, will require the ability to understand and operate in unique political-military environments, and the seemingly tactical decisions made by soldiers on the ground may have strategic consequences. While some of these needs can be fulfilled by civilians, both Americans and local nationals, units stationed on the American security frontier must have the capabilities, cohesion and personnel continuity their mission demands. Chief among them is an awareness of the security and political environment in which they are operating. Especially those forces stationed in volatile regions must have their own human intelligence collection capacity, perhaps through an attached special forces unit if not solely through an organic intelligence unit.

The technologies required to field such forces already exist and many are already in production or in the Army inventory. New force designs and the application of information technologies can give new utility to existing weaponry. However, the problem of mobility and weight becomes an even more pressing problem should ground forces be positioned in Southeast Asia. Even forward-based forces would need to be rapidly deployed over very long distances in times of crisis, both through fast sealift and

airlift; in short, every pound and every cubic foot must count. In designing such forces, the Army should consider more innovative approaches. One short-term approach could be to build such a unit around the V-22 Osprey tilt-rotor aircraft now being built for the Marine Corps and for special operations forces. A second interim approach would be to expand the capabilities of current air-mobile infantry, by adding refueling probes to existing helicopters, as on special operations aircraft. Another approach could involve the construction of truly fast sealift vessels.

In sum, it should be clear that these independent, forward-based Army units can become "change-agents" within the service, opening opportunities for transformational concepts, even as they perform vital stability operations in their regions. In addition, such units would need to train for combat operations on a regular basis, and will require new training centers as well as new garrisons in more relevant strategic locations. They will operate in a more dispersed manner reflecting new concepts of combat operations as well as the demands of current stability operations. In urban areas or in the jungles of Southeast Asia, they will operate in complex terrain that may more accurately predict future warfare. Certainly, new medium-weight or air-mobile units will provide a strong incentive to begin to transform the Army more fundamentally for the future. Not only would increased mobility and information capabilities allow for new ways of conducting operations, the lack of heavy armor would mandate new tactics, doctrines and organizations. Even among those units equipped with the current Abrams tank and Bradley fighting vehicle, the requirement for independent operations, closer ties to other services' forces and introduction of new intelligence and communications capabilities would result in innovation. Most profoundly, such new units and concepts would give the process of transformation a purpose within the Army; soldiers would be a part of the process and take its lessons to heart, breaking down bureaucratic resistance to change.

In addition to these newer force designs for Europe, the Gulf, and elsewhere in East Asia, the Army should retain a force approximating that currently based in Korea. In addition to headquarters units there, the U.S. ground force presence is built around the two brigades of the 2nd Infantry Division. This unit is already a hybrid, neither a textbook heavy division nor a light division. While retaining the divisional structure to allow for the smooth introduction of follow-on forces in times of crisis, the Army also should begin to redesign this unit to allow for longer-range operations. Because of the massive amount of North Korean artillery, counter-battery artillery fires will play an important role in any war on the peninsula, suggesting that improving the rocket artillery capabilities of the U.S. division is a modest but wise investment. Likewise, increasing the aviation and attack helicopter assets of U.S. ground forces in Korea would give commanders options they do not now have. The main heavy forces of the South Korean army are well trained and equipped, but optimized for defending Seoul and the Republic of Korea as far north as possible. In time, the 2nd Infantry Division's two brigades might closely resemble the kind of independent, combined-arms forces needed elsewhere.

American landpower is the essential link in the chain that translates U.S. military supremacy into American geopolitical preeminence.

Army Modernization and Budgets

Since the end of the Cold War, the Army has suffered dramatic budget cutbacks, particularly in weapons procurement and research, that have resulted in the

degradation of current readiness described above and have restricted the service's ability to modernize and innovate for the future. The Army's current attempts at transformation have been hobbled by the need to find "bill-payers" within the Army budget.

In Fiscal Year 1992, the first post-Cold-War and post-Gulf War Army budget was $91 billion measured in constant 2000 dollars. This year, the Congress has approved $69.5 billion for Army operations – including several billion to pay for operations in the Balkans – and President Clinton's request for 2001 is $70.6 billion, more than $2 billion of which will be allocated to Balkans operations. Likewise, Army procurement spending is way down. Through the Clinton years, service procurement has averaged around $8 billion, dipping to a low of $7.1 billion in 1995; the 2000 request was for $9.7 billion, by far the largest Army procurement request since the Gulf War. By contrast, Army weapons purchases averaged about $23 billion per year during the early and mid-1980s, when the current generation of major combat systems – the M1 tank, Bradley fighting vehicle, Apache and Black Hawk helicopters and Patriot missile system – entered production.

To field an Army capable of meeting the new missions and challenges discussed above, service budgets must return to the level of approximately $90 to $95 billion in constant 2000 dollars. Some of this increase would help the Army fill out both its under-manned units and refurbish the institutional Army, as well as increasing the readiness of Army National Guard units. New acquisition programs would include light armored vehicles, "digitized" command and control networks and other situational awareness systems, the Comanche helicopter, and unmanned aerial vehicles. Renewed investments in Army infrastructure would improve the quality of soldier life. The process of transformation would be reinvigorated.

But, as the discussion of Army requirements above indicates, Army investments must be redirected as well as increased. For example, the Crusader artillery program, while perhaps the most advanced self-propelled howitzer ever produced, is difficult to justify under conditions of revolutionary change. The costs of the howitzer, not merely in budgetary terms but in terms of the opportunity cost of a continuing commitment to an increasingly outmoded paradigm of warfare, far outweigh the benefits; the Crusader should be terminated.

In addition to terminating the Crusader artillery program, the Army's annual budget must increase to the $90 to $95 billion level to finance current missions and the Army's long-term transformation.

However, addressing the Army's many challenges will require significantly increased funding. Though the active-duty force is 40 percent smaller than its total at the end of the Cold War, several generations of Army leadership have chosen to retain troop strength, paid for by cuts in procurement and research. This cannot continue. While the Army may be too small for the variety of missions discussed above, its larger need is for reinvestment, recapitalization and, especially, transformation. Taken together, these needs far exceed the savings to be garnered by any possible internal reforms or efficiencies. Terminating marginal programs like the Crusader howitzer, trimming administrative overhead, base closings and the like will not

free up resources enough to finance the radical overhaul the Army needs.

American landpower remains the essential link in the chain that translates U.S. military supremacy into American geopolitical preeminence. Even as the means for delivering firepower on the battlefield shift – strike aircraft have realized all but the wildest dreams of air power enthusiasts, unmanned aerial vehicles promise to extend strike power in the near future, and the ability to conduct strikes from space appears on the not-too-distant horizon – the need for ground maneuvers to achieve decisive political results endures. Regimes are difficult to change based upon punishment alone. If land forces are to survive and retain their unique strategic purpose in a world where it is increasingly easy to deliver firepower precisely at long ranges, they must change as well, becoming more stealthy, mobile, deployable and able to operate in a dispersed fashion. The U.S. Army, and American land forces more generally, must increasingly complement the strike capabilities of the other services. Conversely, an American military force that lacks the ability to employ ground forces that can survive and maneuver rapidly on future battlefields will deprive U.S. political leaders of a decisive tool of diplomacy.

Air Force: Toward a Global First-Strike Force

The past decade has been the best of times and worst of times for the U.S. Air Force. From the Gulf War to Operation Allied Force over Kosovo, the increasing sophistication of American air power – with its stealth aircraft; precision-guided munitions; all-weather and all-hours capabilities; and the professionalism of pilots, planners and support crews – has allowed the Air Force to boast legitimately of its "global reach, global power." On short notice, Air Force aircraft can attack virtually any target on earth with great accuracy and virtual impunity. American air power has become a metaphor for as well as the literal manifestation of American military preeminence.

Specialized Air Force aircraft, like the JSTARS above, are too few in number to meet current mission demands.

Simultaneously, the Air Force has been reduced by a third or more, and its operations have been increasingly diffused. In addition, the Air Force has taken on so many new missions that its fundamental structure has been changed. During the Cold War, the Air Force was geared to fight a large-scale air battle to clear the skies of Soviet aircraft; today's Air Force is increasingly shaped to continue monotonous no-fly-zone operations, conduct periodic punitive strikes, or to execute measured, low-risk, no-fault air campaigns like Allied Force. The service's new "Air Expeditionary Force" concept turns the classic, big-war "air campaign" model largely on its head.

Like the Army, the Air Force continues to operate Cold-War era systems in this new strategic and operational environment. The Air Force's frontline fighter aircraft, the F-15 and F-16, were built to out-perform more numerous Soviet fighters; U.S. support aircraft, from AWACS and JSTARS command-and-control planes to electronic jamming aircraft to tankers, were meant to work in tandem with large numbers of American fighters. The U.S. bomber fleet's primary mission was nuclear deterrence.

The Air Force also has begun to purchase new generations of manned combat aircraft that were designed during the late Cold War; the F-22 and, especially,

the Joint Strike Fighter, are a response to requirements established long ago. Conversely, the decision to terminate the B-2 bomber program was taken before its effectiveness as a long-range, precision, conventional-strike platform was established; in the wake of Operation Allied Force, regional commanders-in-chief have begun to reevaluate how such a capability might serve their uses. Further, the Air Force should reevaluate the need for greater numbers of long-range systems. In some regions, the ability to operate from tactical airfields is increasingly problematic and in others – notably East Asia – the theater is simply so vast that even "tactical," in-theater operations will require long-range capabilities.

In sum, the Air Force has begun to adapt itself to the new requirements of the time, yet is far from completing the needed changes to its posture, structure, or programs. Moreover, the Air Force is too small – especially its fleet of support aircraft – and poorly positioned to conduct sustained operations for maintaining American military preeminence. Air Force procurement funds have been reduced, and service leaders have cut back on purchases of spare parts, support aircraft, and even replacements for current fighters in an attempt to keep the F-22 program on track. Although air power remains the most flexible and responsive element of U.S. military power, the Air Force needs to be restructured, repositioned, revitalized and enlarged to assure continued "global reach, global power." In particular, the Air Force should:

- **Be redeployed to reflect the shifts in international politics. Independent, expeditionary air wings containing a broad mix of aircraft, including electronic warfare, airborne command and control, and other support aircraft, should be based in Italy, Southeastern Europe, central and perhaps eastern Turkey, the Persian Gulf, and Southeast Asia.**

- **Realign the remaining Air Force units in Europe, Asia and the United States to optimize their capabilities to conduct multiple large-scale air campaigns.**

- **Make selected investments in current generations of combat and support aircraft to sustain the F-15 and F-16 fleets for longer service life, purchase additional sets of avionics for special-mission fighters, increase planned fleets of AWACS, JSTARS and other electronic support planes, and expand stocks of precision-guided munitions.**

- **Develop plans to increase electronic warfare support fleets, such as by creating "Wild Weasel" and jammer aircraft based upon the F-15E airframe.**

- **Restore the condition of the institutional Air Force, expanding its personnel strength, rebuilding its corps of pilots and experienced maintenance NCOs, expanding support specialties such as intelligence and special police and reinvigorating its training establishment.**

- **Overall Air Force active personnel strength should be gradually increased by approximately 30,000 to 40,000, and the service should rebuild a structure of 18 to 19 active and 8 reserve wing equivalents.**

The State of the Air Force

Also like the Army, in recent years the Air Force has undertaken missions fundamentally different than those assigned during the Cold War. The years since the fall of the Berlin Wall have been anything but predictable. In 1997, the Air Force had four times more forces deployed than in 1989, the last year of the Cold War, but one third fewer personnel on active duty. Modernization has slowed to a crawl. Under

such circumstances, the choices made to build a warfighting force can become liabilities. As Thomas Moorman, vice chief of staff of the Air Force from 1994 through 1997, has stated:

> *None of us believed, at the end of the Cold War, that we would be doing Northern Watch and Southern Watch in 1998. Bosnia still exists – everyone [in the Air Force has] been there since 1995….Couple that with the fact that we've seen surges, particularly in Iraq. Saddam Hussein has been very effective in pulling our chain, and we've had three major deployments, the last of which was very significant; it was 4,000 people and 100 aircraft. And we stayed over there a lot longer than we thought we would.*

As a result, Air Force "readiness is slipping – it's not just anecdotal; it's factual," says Gen. Michael Ryan, the Air Force Chief of Staff. Since 1996, according to Ryan, the Air Force has experienced "an overall 14 percent degradation in the operational readiness of our major operational units." And although Air Force leaders claim that the service holds all its units at the same levels of readiness – that it does not, as the Navy does, practice "tiered" readiness where first-to-fight units get more resources – the level of readiness in stateside units has slipped below those deployed overseas. For example, Air Combat Command, the main tactical fighter command based in the United States, has suffered a 50 percent drop in readiness rates, compared to the service-wide drop in operational readiness of 14 percent.

These readiness problems are the result of a pace of operations that is slowly but surely consuming the Air Force. A 1998 study by RAND, "Air Force Operations Overseas in Peacetime: OPTEMPO and Force Structure Implications," concluded that today's Air Force is barely large enough to sustain current no-fly-zone and similar constabulary contingencies, let alone handle a major war. While the Department of Defense has come to recognize the heavy burden placed upon the Air Force's AWACS and other specialized aircraft, the study found that "specialized aircraft are experiencing a rate of utilization well beyond the level that the current force structure would seem able to support on a long-term basis." The study also revealed that the current fighter force is stretched to its limit as well. Under current assumptions, the current fighter structure "has the capacity to meet the [peacekeeping] demand, but with a meager reserve – only about a third of a squadron (8 aircraft) beyond the demand." An additional no-fly-zone mission, such as is now being conducted over the Balkans, for example, "would be difficult to meet on a sustained basis." According to Ryan, the accumulation of these constabulary missions has had a dramatic effect on the Air Force. He recently summarized the situation for Congress:

Ryan

> *Our men and women are separated from their home bases and families for unpredictable and extended periods every year — with a significant negative impact on retention. Our home-station manning has become inadequate — and workload has increased — because forces are frequently deployed even though home-station operations must continue at near-normal pace. Our units deploying forward must carry much more infrastructure to expeditionary bases. Force protection and critical mission security for forward-deployed forces is a major consideration. The demands on our smaller units, such as [intelligence, surveillance and reconnaissance] and combat search and rescue units, have dramatically increased — they are properly sized for two major theater wars, but some are inadequately sized for multiple, extended contingency operations. Due to the unpredictable*

nature of contingencies, training requirements have been expanded, and training cannot always be fully accomplished while deployed supporting contingencies. Because contingencies are unpredictable, it is much more difficult to use Reserve Component forces, many of whom need time to coordinate absences with civilian employers before they are free to take up their Air Force jobs.

These cumulative stresses have created a panoply of problems for the Air Force: recruiting and retention of key personnel, especially pilots, is an unprecedented worry; the service's fleet of aircraft, especially support aircraft, is aging significantly; spare parts shortages, along with shortages of electronic subsystems and advanced munitions, restricts both operational and training missions; and the quality and quantity of air combat training has declined.

Even as routine, home-station combat training has suffered in recent years, so have the Air Force's major air combat exercises. Lack of funds for training, reports Ryan, means that "aircrews will no longer be able to meet many training requirements and threat training will be reduced to unrealistic level. Aircrews will develop a false sense of security while training against unrealistic threats." Similarly, the Air Force's program to provide advanced "aggressor" training to its pilots is a shadow of its former self: during the 1980s there was one aggressor aircraft for every 35 Air Force fighters; today, the ratio is one for every 240 fighters. The frequency with which Air Force aircrews participate in "Red Flag" exercises has declined from once every 12 months to once every 18 months.

The Air Force's problems are further compounded by the procurement holiday of the 1990s. The dramatic aging of the Air Force fleet and the resulting increase in cost and maintenance workload caused by aircraft fatigue, corrosion and parts obsolescence is the second driving factor in decreasing service readiness. By the turn of the century, the average Air Force aircraft will be 20 years old and by 2015, even allowing for the introduction of the F-22 and Joint Strike Fighter and continuing purchases of current aircraft such as the C-17, the average age of the fleet will be 30 years old. The increased expense of operating older aircraft is well illustrated by the difference in airframe depot maintenance cost between the oldest F-15A and B models – at approximately 21 years old, such repairs average about $1.9 million per aircraft – versus the newest F-15E model – at 8 years in average age, the same kinds of repairs cost about $1.3 million per plane, a 37 percent cost difference. But perhaps the costliest measure of an aging fleet is that fewer airplanes are ready for combat. Overall Air Force "non-mission capable rates," or grounded aircraft, have increased from 17 percent in 1991 to 25 percent today. These rates continue to climb despite the fact that Air Force maintenance personnel are working harder and longer to put planes up. The process of parts cannibalization – transferring a part from one plane being repaired to keep another flying – has increased by 58 percent from 1995 to 1998.

Air Combat Command, the main tactical fighter command based in the United States, has suffered a 50 percent drop in readiness rates.

Some of the Air Force's readiness problems stem from the overall reduction in its procurement budget, combined with the service's determination to keep the F-22 program on track – as much as possible. The expense of the "Raptor" has forced the Air Force to make repeated cuts in other programs, not only in other aircraft programs, but in spare parts and even in personnel programs; even the Air Force's pilot shortage stems in part from decisions taken to free up funds for the F-22. These effects have been doubly compounded by

the changes in the pattern of Air Force operations over the past 10 years. Support aircraft such as the AWACS and JSTARS, electronic combat and tanker aircraft were all intended to operate in concert with large numbers of tactical aircraft in large-scale operations. But in fact, they are more often called upon now to operate with just a handful of fighter or strike aircraft in no-fly zone operations or other contin-gencies. As a result, these types of aircraft routinely are rated as "low-density, high-demand" systems in the Pentagon's joint-service readiness assessments; in other words, there are too few of them to meet mission requirements. The Air Force's modernization program has yet to fully reflect this phenomenon. For example, the formal JSTARS "requirement" was reduced from 19 to 13 aircraft; only lately has an increased requirement been recognized. Likewise, the original C-17 procurement was cut from 210 to 120 aircraft. In fact, to meet emerging requirements, it is likely that 210 C-17s may be too few. Overall, the Air Force's modernization programs need a thorough-going reassessment in light of new missions and their requirements.

Forward-Based Forces

The pattern of Air Force bases also needs to be reconsidered. Currently, the Air Force maintains forward-based forces of two-and-one-half wing equivalents in Western Europe; one wing in the Pacific, in Japan; a semi-permanent, composite wing of about 100 aircraft scattered throughout the Gulf region; and a partial wing in central Turkey at Incirlik Air Force Base. Even allowing for the inherent flexibility and range of aircraft, these current forces need to be supplemented by additional forward-based forces, additional permanent bases, and a network of contingency bases that would permit the Air Force to extend the effectiveness of current and future aircraft fleets as the American security perimeter expands.

In Europe, current forces should be increased with additional support aircraft, ranging from an increased C-17 and tanker fleet to AWACS, JSTARS and other electronic support planes. Existing forces, still organized in traditional wings, should be supplemented by a composite wing permanently stationed at Incirlik Air Force Base in Turkey and that base should be improved significantly. The air wing at Aviano, Italy might be given a greater capability as that facility expands, as well. Additionally, the Air Force should establish the requirements for similar small composite wings in Southeastern Europe. Over time, U.S. Air Forces in Europe would increase by one to two-and-one-half wing equivalents. Further, improvements should be made to existing air bases in new and potential NATO countries to allow for rapid deployments, contingency exercises, and extended initial operations in times of crisis. These preparations should include modernized air traffic control, fuel, and weapons storage facilities, and perhaps small stocks of prepositioned munitions, as well as sufficient ramp space to accommodate surges in operations. Improvements also should be made to existing facilities in England to allow forward operation of B-2 bombers in times of crisis, to increase sortie rates if needed.

In the Persian Gulf region, the provisional 4044th Wing should continue to operate much as it has for the better part of the last decade. However, the Air Force should take several steps to improve its operations while deferring to local political sensibilities. To relieve the stress of constant rotations, the Air Force might consider using more U.S. civilian contract workers in support roles – perhaps even to do aircraft maintenance or to provide additional security. While this might increase the cost of these operations, it might also be an incentive to get the Saudis, Kuwaitis and other Gulf states to assume a greater share of the costs while preserving the lowest possible U.S. military profile. By the same token, further improvements in the

facilities at Al Kharj in Saudi Arabia, especially those that would improve the quality of life for airmen and allow increased combat training, warrant additional American as well as Saudi investments. The Air Force presence in the Gulf region is a vital one for U.S. military strategy, and the United States should consider it a *de facto* permanent presence, even as it seeks ways to lessen Saudi, Kuwaiti and regional concerns about U.S. presence.

The overall effectiveness of the B-2 bomber is limited by the small size of the fleet and the difficulties of operating solely from Whiteman Air Force Base in Missouri.

But it is in East Asia that the Air Force must look to increase its capabilities and reach. The service currently has about two wings worth of aircraft stationed at three bases in Japan and Korea; like the Army, the Air Force is concentrated in Northeast Asia and lacks a permanent presence in Southeast Asia, thus limiting its regional reach. The Air Force also has an F-15 wing in Alaska that is officially part of its Pacific force, as well. The Air Force needs roughly to double its forces stationed in East Asia, preferably dispersing its bases in the south as it has in the north, perhaps by stationing a wing in the Philippines and Australia. As in Europe, Air Force operations in East Asia would be greatly enhanced by the ability to sustain long-range bomber operations out of Australia, perhaps also by including the special maintenance facilities needed to operate the B-2 and other stealth aircraft. Further, the Air Force would be wise to invest in upgrades to regional airfields to permit surge deployments and, incidentally, help build ties with regional air forces.

Air Force Units Based In the United States

Even as the Air Force accelerates operations and improves its reach in the key regions of the world, it must retain sufficient forces based in the United States to deploy rapidly in times of crisis and be prepared to conduct large-scale air campaigns of the sort needed in major theater wars and to react to truly unforeseen contingencies. Indeed, the mobility and flexibility of air power virtually extinguishes the distinction between reinforcing and contingency forces. But it is clear that the Air Force's current stateside strength of approximately eight to nine fighter-wing equivalents and four bomber wings is inadequate to these tasks. Further, the Air Force's fleets of support aircraft are too small for rapid, large-scale deployments and sustained operations.

The Air Force's structure problems reflect troubles of types of aircraft as well as raw numbers. For example, when the service retired its complements of F-4 "Wild Weasel" air defense suppression and EF-111 electronic warfare aircraft, these missions were assumed by F-16s fitted with HARM system pods and Navy and Marine EA-6B "Prowlers," respectively. The effect has been to reduce the size of the F-16 fleet capable of doing other missions. The F-16 was intended to be a multi-mission airplane, but the heavy requirement for air defense suppression, even in no-fly-zone operations, means that these aircraft are only rarely available for other duties, and their pilots' skills rusty. Likewise, the loss of the EF-111 has thrust the entire jamming mission on the small and old Prowler fleet, and has left the Air Force without a jammer of its own. The shortage of these aircraft is so great that, during Operation Allied Force, no-fly-zone operations over Iraq were suspended.

The Air Force's airlift fleet is similarly too small. The lift requirements established in the early 1990s did not anticipate the pace and number of contingency operations in the post-Cold-War world. Nor have the requirements been changed to reflect force design changes – both those already made, such as *de facto* expeditionary forces in the Army and Air Force, nor those advocated in this report. The need to operate in a more dispersed fashion will increase airlift requirements substantially.

Further, the Air Force's need for other supporting aircraft is also greater than its current fleet. As Air Force Chief of Staff Gen. Ryan has observed, his service is far short of being a "two-war" force in many of these capabilities. Even in daily no-fly-zone operations with relatively small numbers of fighters, the nature of the mission demands AWACS, JSTARS and other long-range electronic support aircraft; EA-6Bs and F-16s with HARM pods for jamming and air defense suppression; and several tankers to permit extended operations over long ranges. The "supporter-to-shooter" ratios of the Cold War and of large-scale operations such as the Desert Storm air campaign have been completely inverted. Air Force requirements of such aircraft for perimeter patrolling missions and for reinforcing missions far exceed the service's current fleets; no previous strategic review has contemplated these requirements. While such an analysis is beyond the scope of this study, it is obvious that significant enlargements of Air Force structure are needed.

Finally, the Air Force's fleet of long-range bombers should be reassessed. As mentioned above, the operations of the B-2s during Allied Force are certain to lead to a reappraisal of the regional commanders' requirements for that aircraft. Yet another striking feature of B-2 operations during the Kosovo war was the length of the missions – it required a 30-hour, roundtrip sortie from Whiteman Air Force Base in Missouri for each strike – and the difficulty in sustaining operations. The bulk of the B-2 fleet is often reserved for nuclear missions; in sum, the Air Force could generate no more than two B-2s every other day for Allied Force. Whatever the performance of the B-2, its overall effectiveness is severely limited by the small size of the fleet and the difficulties of operating solely from Whiteman. While the cost of restarting the B-2 production line may be prohibitive, the need is obvious; the Air Force could increase the "productivity" of B-2 operations by establishing overseas locations for which the plane could operate in times of need, and by developing a deployable B-2 maintenance capability. As the Air Force contemplates its future bomber force, it should seek to avoid such a dilemma as it develops successors to the B-2. And considering the limited viability of the bomber leg of the U.S. nuclear triad, the Air Force might seek to have bombers no longer counted for arms control purposes, and equip its B-52s and B-2s solely for conventional strike.

The Air Force's fleets of support aircraft are too small for rapid, large-scale deployments and sustained operations.

At minimum, the Air Force based in the United States should be increased by two or more wing equivalents. However, the majority of these increases should be directed at the specialized aircraft that represent the "low-density, high-demand" air assets now so lacking. But while this will do much to alleviate the stresses on the current fighter fleet, it will not be enough to offset the effects of the higher tempo of operations of the last decade; the F-15 and F-16 fleets face looming block obsolescence. This will be partly offset by the introduction of the F-22 into the Air Force inventory, but as an air superiority aircraft, the F-22 is not well suited to today's less stressful missions. The Air Force is buying a new race car when it also needs a fleet of minivans. The Air Force should purchase

new multi-mission F-15E and F-16 aircraft. The C-17 program should be restored to its original 210-aircraft buy, and the Air Force should address the need for additional electronic support aircraft, both in the near-term but also in the longer term as part of its transformation efforts.

If the F-22 is less than perfectly suited to today's needs, the problem of the Joint Strike Fighter program is a larger one altogether. Moreover, more than half the total F-22 program cost has been spent already, while spending to date on the JSF – although already billions of dollars – represents the merest tip of what may prove to be a $223 billion iceberg. And greater than the technological challenges posed by the JSF or its total cost in dollars is the question as to whether the program, which will extend America's commitment to manned strike aircraft for 50 years or more, represents an operationally sound decision. Indeed, as will be apparent from the discussion below on military transformation and the revolution in military affairs, it seems unlikely that the current paradigm of warfare, dominated by the capabilities of tactical, manned aircraft, will long endure. An expensive Joint Strike Fighter with limited capabilities and significant technical risk appears to be a bad investment in such a light, and the program should be terminated. It is a roadblock to transformation and a sink-hole for defense dollars.

The reconstitution of the stateside Air Force as a large-scale, warfighting force will complicate the service's plans to reconfigure itself for the purposes of expeditionary operations. But the proliferation of overseas bases should reduce many, if not all, of the burdens of rotational contingency operations. Because of its inherent mobility and flexibility, the Air Force will be the first U.S. military force to arrive in a theater during times of crisis; as such, the Air Force must retain its ability to deploy and sustain sufficient numbers of aircraft to deter wars and shape any conflict in its earliest stages. Indeed, it is the Air Force, along with the Army, that remains the core of America's ability to apply decisive military power when its pleases. To dissipate this ability to deliver a rapid hammer blow is to lose the key component of American military preeminence.

Air Force Modernization And Budgets

As with the Army, Air Force budgets have been significantly reduced during the past decade, even as the service has taken on new, unanticipated missions and attempts to wrestle with the implications of expeditionary operations. At the height of the Reagan buildup, in 1985, the Air Force was authorized $140 billion; by 1992, the first post-Cold-War budget figure fell to $98 billion. During the Clinton years, Air Force budgets dropped to a low of $73 billion in 1997; the administration's 2001 request was for $83 billion (all figures are FY2000 constant dollars).

During this period, Air Force leaders sacrificed many other essential projects to keep the F-22 program going; simply restoring the service to health – correcting for the shortfalls of recent years plus the internal distortions caused by service leadership decisions – will require time and significantly increased spending. A gradual increase in Air Force spending back to a $110 billion to $115 billion level is required to increase service personnel strength; build new units, especially the composite wings required to perform the "air constabulary missions" such as no-fly zones; add the support capabilities necessary to complement the fleet of tactical aircraft; reinvest in space capabilities and begin the process of transformation.

The F-22 Raptor program should be continued to procure three wings' worth of aircraft and to develop and buy the munitions necessary to increase the F-22's ability to perform strike missions; although the plane has limited bomb-carrying

capacity, improved munitions can extend its utility in the strike role. The need for strategic lift has grown exponentially throughout the post-Cold-War era, both in terms of volume of lift and for numbers of strategic lift platforms; it may be that the requirement for strategic airlift now exceeds the requirement in the early 1990s when the C-17 program was scaled back from a planned 210 aircraft to the current plan for just 120. The C-17's ability to land on short airfields makes it both a strategic and tactical airlifter. Or rather, it is the first airlifter to be able to allow for strategic deployment direct to an austere theater, as in Kosovo.

The Joint Strike Fighter, with limited capabilities and significant technical risk, is a roadblock to future transformation and a sink-hole for needed defense funds.

Likewise, the formal requirements for AWACS, JSTARS, "Rivet Joint" and other electronic support and combat aircraft were set during the Cold War or before the nature of the current era was clear. These aircraft were designed to operate in conjunction with large numbers of fighter aircraft, yet today they operate with very small formations in no-fly zone, or even virtually alone in counter-drug intelligence gathering operations. As with the C-17, it is likely that a genuine calculation of current requirements might result in a larger fleet of such aircraft than was considered during the late Cold War. In sum, the process of rebuilding today's Air Force – apart from procuring sufficient "attrition" F-15s and F-16s and proceeding with the F-22 – lies primarily in creating the varied support capabilities that will complement the fighter fleet.

In the wake of the Kosovo air operation, the Air Force should again reconsider the issue of strategic bombers. Both the successes and limitations of B-2 operations during "Allied Force" suggest that the utility of long-range strike aircraft has been undervalued, not only in major theater wars but in constabulary and punitive operations. Whether this mandates opening up the B-2 production line again or in accelerating plans to build a new bomber – even an unmanned strategic bomber – is beyond the level of analysis possible in this study. At the same time, it is unlikely that the current bomber fleet – mostly B-1Bs with a shrinking and aging fleet of B-52s and the few B-2s that will be available for conventional-force operations – is best suited to meet these new requirements.

To move toward the goal of becoming a force with truly global reach – and sustained global reach – the Air Force must rebuild its fleet of tanker aircraft. Sustaining a large-scale air campaign, whatever the ability of strategic-range bombers, must ultimately rely upon theater-range tactical aircraft. As amply demonstrated over Kosovo, the ability to provide tanker support can often be the limiting factor to such large-scale operations. The Air Force's current plan, to eventually operate a tanker fleet with 75-year-old planes, is not consistent with the creation of a global-reach force.

Finally, the Air Force should use some of its increased budget and the savings from the cancellation of the Joint Strike Fighter program to accelerate the process of transformation within the service, to include developing new space capabilities. The ability to have access to, operate in, and dominate the aerospace environment has become the key to military success in modern, high-technology warfare. Indeed,

as will be discussed below, space dominance may become so essential to the preservation of American military preeminence that it may require a separate service. How well the Air Force rises to the many challenges it faces – even should it receive increased budgets – will go far toward determining whether U.S. military forces retain the combat edge they now enjoy.

New Course for the Navy

The end of the Cold War leaves the U.S. Navy in a position of unchallenged supremacy on the high seas, a dominance surpassing that even of the British Navy in the 19th and early parts of the 20th century. With the remains of the Soviet fleet now largely rusting in port, the open oceans are America's, and the lines of communication open from the coasts of the United States to Europe, the Persian Gulf and East Asia. Yet this very success calls the need for the current force structure into question. Further, the advance of precision-strike technology may mean that naval surface combatants, and especially the large-deck aircraft carriers that are the Navy's capital ships, may not survive in the high-technology wars of the coming decades. Finally, the nature and pattern of Navy presence missions may be out of synch with emerging strategic realities. In sum, though it stands without peer today, the Navy faces major challenges to its traditional and, in the past, highly successful methods of operation.

As with the Army, the Navy's ability to address these challenges has been additionally compromised by the high pace of current operations. As noted in the first section of this report, the Navy has disrupted the traditional balance between duty at sea and ashore, stressing its sailors and complicating training cycles. Units ashore no longer have the personnel, equipment, or opportunities to train; thus, when they go to sea, they go at lower levels of readiness than in the past. Modernization has been another bill-payer for maintaining the readiness of at-sea forces during the defense drawdown of the past decade. As H. Lee Buchanan, the Navy's top procurement official, recently admitted, "After the buildup of the 1980s, at the end of the Cold War we literally stopped modernizing in order to fund near-term readiness [and]…our procurement accounts plummeted by 70 percent. The result has been an aging force structure with little modernization investment." According to recently retired Chief of Naval Operations Adm. Jay Johnson, the Navy is in danger of slipping below a fleet of 300 ships, a level that would create "unacceptable risk" in executing the missions called for by the national military strategy. Unfortunately, he added, "The current level of shipbuilding is insufficient to preserve even that level of fleet in the coming decades."

The Navy must begin to reduce its heavy dependence on carrier operations.

As a consequence, the Navy is attempting to conduct a full range of presence missions while employing the combat forces developed during the later years of the Cold War. The Navy must embark upon a complex process of realignment and reconfiguration. A decade of increased operations and reduced investment has worn down the fleets that won the Cold War. The demands of new missions require new methods and patterns of operations, with an increasing emphasis on East Asia. To meet the strategic need for naval power today, the Navy should be realigned and reconfigured along these lines:

- **Reflecting the gradual shift in the focus of American strategic concerns toward East Asia, a majority of the U.S. fleet, including two thirds of all carrier battle groups, should be concentrated in the Pacific. A new, permanent forward base should be established in Southeast Asia.**

- **The Navy must begin to transition away from its heavy dependence on carrier operations, reducing its fleet from 12 to nine carriers over the next six years. A moratorium on carrier construction should be imposed after the completion of the CVN-77, allowing the Navy to retain a nine-carrier force through 2025. Design and research on a future CVX carrier should continue, but should aim at a radical design change to accommodate an air wing based primarily on unmanned aerial vehicles. The Navy should complete the F/A-18E/F program, refurbish and modernize its support aircraft, consider the suitability of a carrier-capable version of the Air Force's F-22, but keep the Joint Strike Fighter program in research and development until the implications of the revolution in military affairs for naval warfare are understood better.**

- **To offset the reduced role of carriers, the Navy should slightly increase its fleets of current-generation surface combatants and submarines for improved strike capabilities in littoral waters and to conduct an increasing proportion of naval presence missions with surface action groups. Additional investments in counter-mine warfare are needed, as well.**

State of the Navy Today

The first step in maintaining American naval preeminence must be to restore the health of the current fleet as rapidly as possible. Though the Navy's deployments today have not changed as profoundly as have those of the Army or Air Force – the sea services have long manned, equipped and trained themselves for the rigors of long deployments at sea – the number of these duties has increased as the Navy has been reduced. The Navy also faces a shipbuilding and larger modernization problem that, if not immediately addressed, will reach crisis proportions in the next decade.

Thus, like the other services, the Navy is increasingly ill prepared for missions today and tomorrow. For the past several years, Adm. Johnson has admitted the Navy "was never sized to do two [major theater wars]" – meaning that, after the defense drawdown, the Navy is too small to meet the requirements of the current national military strategy. According to Johnson: "The QDR concluded that a fleet of slightly more than 300 ships was sufficient for near term requirements and was within an acceptable level of risk. Three years of high tempo operations since then, however, suggest that this size fleet will be inadequate to sustain the current level of operations for the long term."

Even as the Navy has shrunk to a little more than half its Cold-War size, the pace of operations has grown so rapidly that the Navy is experiencing readiness problems and personnel shortages. These problems are so grave that forward-deployed naval forces, the carrier battle groups that are currently the core of the Navy's presence mission, now put to sea with significant personnel problems. When the *USS Lincoln* carrier battle group fired Tomahawk cruise missiles at terrorist camps in Afghanistan and suspected chemical weapons facilities in Sudan, it did so with 12 percent fewer people in the battle group than on the previous deployment. Similarly, during the February 1998 confrontation with Iraq, the Navy sent three carriers to the Persian Gulf. The *USS George Washington* deployed the Gulf with only 4,600 sailors, almost 1,000 fewer than its previous cruise there two years earlier. The carrier *USS Independence*, dispatched on short notice from its permanent home in Japan, sailed with only 4,200 sailors and needed an emergency influx of about 80 sailors just so it could be rated fit for combat. The *USS Nimitz*, already in the Middle East, was 400 sailors shy of its previous cruise. The Navy

also had to issue two urgent calls for volunteer sailors in port back home.

This is a worrisome trend. Today more than ever, U.S. Navy operations center around the carrier battle group. Indeed, the ability to conduct additional operations or even training independent from battle group operations is increasingly difficult. But the process of piecing together the elements of a battle group – the carrier itself, its air wing, its surface escorts, its submarines, and its accompanying Marine Amphibious Ready Group – is also becoming a substantial challenge.

Bringing a carrier battle group to the high states of readiness demanded by deployments to sea is a complex and rigorous task, involving tens of thousands of personnel over an 18-month period. Formally known as the "interdeployment training cycle" and more often called the readiness "bathtub," this period is the key to readiness at sea. Equipment must be overhauled and maintained, personnel assigned and reassigned, and training accomplished from individual skills up through complex battle group operations. Shortfalls and cutbacks felt in the inter-deployment cycle result in diminished readiness at sea. And finally and vitally important to the health of an all-volunteer force – sailors must reestablish the bonds and ties with their families that allow them to concentrate on their duties while at sea.

Although Navy leaders have recently focused on the cutbacks in their inter-deployment training cycle, it is clear that postponed maintenance and training is having an increasing effect on the readiness of forces at sea. As a result, naval task forces are compelled to complete their training while they are deployed, rather than beforehand. And with fully 52 percent of its ships afloat, including training, and 33 percent actually deployed at sea – compared to historical norms of 42 percent at sea and 21 percent deployed, Navy leaders are contemplating a reduction in the size of carrier battle groups by trimming the number of escorts. Most ominously, the Navy's ability to surge large fleets in wartime – the requirement to meet the two-war standard – is declining. As Adm. Johnson told the Congress:

> *[N]early every Major Theater War scenario would require the rapid deployment of forces from [the United States]. Because of the increasingly deep bathtub in our [interdeployment training cycle] readiness posture, these follow-on forces most likely will not be at the desired levels of proficiency quickly enough. Concern over the readiness of non-deployed forces was a contributing factor to the Chairman of the Joint Chiefs of Staff recently changing his overall risk assessment of a two[-war] scenario to moderate to high.*

Johnson

This assessment has prompted Johnson's successor, Adm. Vernon Clark, the former commander of the Atlantic Fleet who was confirmed as CNO in June, to outline a major reallocation of resources to increase the readiness of carrier battle groups – although only to the "C-2" rating level, still below the highest standard. "To me, readiness is a top priority," said Clark in his confirmation testimony. "It simply means taking care of the Navy that the American people have already invested in."

But while Clark is correct about the Navy's increasing troubles maintaining its current readiness, an even larger problem looms just over the horizon. The Navy's "procurement holiday" of the past decade has left the service facing a serious problem of block obsolescence in the next 10 years. Unless current trends are reversed, the Navy will be too small to meet its worldwide commitments. Both in its major ship and

aircraft programs, the Navy has been purchasing too few systems to sustain even the reduced, post-Cold War fleet called for in the Quadrennial Defense Review.

As a result of the significant expansion of the Navy to nearly 600 ships during the Reagan years and the following drawdown of the 1990s, today's Navy of just over 300 ships is made up of relatively new ships, and thus the low shipbuilding rates of the past decade have not yet had a dramatic effect on the fleet. Assuming the traditional "ship-life" of about 30 to 35 years, maintaining a 300-ship Navy requires the purchase of about eight to 10 ships per year. The Clinton Administration's 2001 defense budget request includes a request for eight ships, the first time in several years that the number is that high. And the administration's long-term plan would purchase 39 ships over 5 years, still below the required replacement rate, but an improvement over recent Navy budgets.

The Navy has built up a 'modernization deficit' – of surface ships, submarines and aircraft – that will soon approach $100 billion.

However, there is less to this apparent improvement than meets the eye. The slight increase in the shipbuilding rate is achieved by purchasing less expensive auxiliary cargo ships, which typically cost $300 to $400 million, compared to $1 billion for an attack submarine or Arleigh Burke-class Aegis destroyer, or $6 billion for an aircraft carrier. According to a Congressional Research Service analysis, the administration plan would buy unneeded cargo ships, "procured at a rate in excess of the steady-state replacement for Navy auxiliaries." The replacement rate for auxiliaries is approximately 1.5 per year; the administration's request includes one in 2001, three each in 2002 and 2003, and two each in 2004 and 2005.

While buying too many cheap auxiliaries, the administration is buying too few combatants, as the state of the submarine force indicates. In 1997, the Navy's fleet of 72 attack boats was too small to meet its operational requirements, yet, at the same time, the QDR called for a further reduction of the attack submarine force to 50 boats. Since then, these additional reductions in the submarine force have exacerbated the problem. As the Navy's director of submarine programs, Adm. Malcolm Fages told the Senate last year, "We have transitioned from a requirements-driven force to an asset-limited force structure. Today, although we have 58 submarines in the force, we have too few submarines to accomplish all assigned missions."

Nor is it likely that the Navy will be able to stop the hemorrhaging of its attack submarine fleet. For the period from 1990 through 2005, the Navy will have purchased just 10 new attack submarines, according to current plans. But the replacement rate for even a 50-sub fleet would have required procurement of 23 to 27 boats during that time period. In sum, the Navy has a submarine-building "deficit" of 13 to 17 boats, even to maintain a fleet that is too small to meet operational and strategic needs. According to the administration's budget request, the Navy plans to build no more than one new attack submarine per year. Assuming the 30-year service life for nuclear attack submarines, the American submarine fleet would slip to 24 boats by 2025.

The Navy's fleet of surface combatants faces much the same dilemma as does the submarine force: it is too small to meet its current missions and, as seaborne missile defense systems are developed, the surface fleet faces substantial new missions for which it is now unprepared. For these reasons, the Navy has prepared a new report, entitled the Surface Combatant Force Level Study, arguing that the true requirement for surface combatants is 138 warships,

compared to the 116 called for under the Quadrennial Defense Review. By comparison, the Navy had 203 surface combatants in 1990 and the Bush Administration's "Base Force" plan called for a surface fleet of 141 ships.

As of last year, Navy shipbuilding had a current "deficit" of approximately 26 ships, even before the requirements of new missions such as ballistic missile are calculated. To maintain a 300-ship fleet, the Navy must maintain a ship procurement rate of about 8.6 ships per year. Yet from 1993 to 2005, according to administration plans, the Navy will have bought 85 ships, or about 6.5 ships per year. Steady-state rates would have required the purchase of 111 ships, according to the Congressional Research Service analysis. Once the large number of ships bought during the 1980s begins to reach the end of its service life, the Navy will begin to shrink rapidly, and maintaining a fleet above 250 ships will be difficult to do.

As with ships and submarines, the Navy's aircraft fleet is living off the purchases made during the buildup of the Reagan years. The average age of naval aircraft is 16.5 years and increasing. While the Navy's F-14 and F-18 fighters are being upgraded, the aging of the fleet is most telling on support aircraft. The Navy's plan to refurbish the P-3C submarine-hunting plane will extend the Orion's life to 50 years; the fleet average now is 21 years. The E-2 Hawkeye, the Navy's airborne early warning and command and control plane, was first produced in the 1960s. The S-3B Viking is another aircraft essential to many aspects of carrier operations; it is 23 years old and no longer in production. And the EA-6B Prowler is now the only electronic warfare aircraft flown by any of the services, and is now considered a national asset, not merely a Navy platform. Operation Allied Force employed approximately 60 of the 90 operational EA-6Bs then in the fleet; current Navy plans are to refurbish the entire 123 Prowler airframes that still exist, inserting a new center wing section on this 1960s-era aircraft and improving its electronic systems. No new electronic warfare aircraft is in the program of any service.

As a result of a decade-long procurement holiday, a Navy already too small to meet many of its current missions is heading for a modernization crisis; indeed, it already may have built up a "modernization deficit" – of surface ships, submarines, and aircraft, that will soon approach $100 billion – even as the Navy is asked to take on additional new missions such as ballistic missile defense. Higher operations tempos, personnel and training problems and spare parts shortfalls have reduced Navy readiness. By any measure, today's Navy is unable to meet the increasing number of missions it faces currently, let alone prepare itself for a transformed paradigm of future naval warfare.

New Deployment Patterns

Revitalizing the Navy will require more than improved readiness and recapitalization, however. The Navy's structure and pattern of operations must be reconsidered in light of new strategic realities as well. In general terms, this should reflect an increased emphasis on operations in the western Pacific and a decreased emphasis on aircraft carriers.

As discussed above, the focus of American security strategy for the coming century is likely to shift to East Asia. This reflects the success of American strategy in the 20th century, and particularly the success of the NATO alliance through the Cold War, which has created what appears to be a generally stable and enduring peace in Europe. The pressing new problem of European security – instability in Southeastern Europe – will be best addressed by the continued stability operations in the Balkans by U.S. and NATO ground forces supported by land-based air forces. Likewise, the new opportunity for greater European stability offered by further NATO expansion will make demands first of all on

ground and land-based air forces. As the American security perimeter in Europe is removed eastward, this pattern will endure, although naval forces will play an important role in the Baltic Sea, eastern Mediterranean and Black Sea, and will continue to support U.S. and NATO operations ashore.

Tomahawk cruise missiles have been the Navy weapon of choice in recent strike operations.

Also, while it is likely that the Middle East and Persian Gulf will remain an area of turmoil and instability, the increased presence of American ground forces and land-based air forces in the region mark a notable shift from the 1980s, when naval forces carried the overwhelming burden of U.S. military presence in the region. Although the Navy will remain an important partner in Gulf and regional operations, the load can now be shared more equitably with other services. And, according to the force posture described in the preceding chapter, future American policy should seek to augment the forces already in the region or nearby. However, since current U.S. Navy force structure, and particularly its carrier battle-group structure, is driven by the current requirements for Gulf operations, the reduced emphasis of naval forces in the Gulf will have an effect on overall Navy structure.

Thus, the emphasis of U.S. Navy operations should shift increasingly toward East Asia. Not only is this the theater of rising importance in overall American strategy and for preserving American preeminence, it is the theater in which naval forces will make the greatest contribution. As stressed several times above, the United States should seek to establish – or reestablish – a more robust naval presence in Southeast Asia, marked by a long-term, semi-permanent home port in the region, perhaps in the Philip-pines, Australia, or both. Over the next decade, this presence should become roughly equivalent to the naval forces stationed in Japan (17 ships based around the *Kitty Hawk* carrier battle group and *Belleau Wood* Marine amphibious ready group). Optimally, these forward-deployed forces, both in Japan and ultimately in Southeast Asia, should be increased with additional surface combatants. In effect, one of the carrier battle groups now based on the West Coast of the United States should be shifted into the East Asian theater.

Rotational naval forces form the bulk of the U.S. Navy; as indicated above, the size of the current fleet is dictated by the presence requirements of the regional commanders-in-chief as determined during the 1997 Quadrennial Defense Review. And, the Navy and Department of Defense have defined presence primarily in terms of aircraft carrier battle groups. The current need to keep approximately three carriers deployed equates to an overall force structure of eleven carriers (plus one reserve carrier for training). In truth, the structure-to-deployed forces ratio is actually higher, for the Navy always counts its Japan-based forces as "deployed," even when not at sea. Further, because of transit times and other factors, the ratio for carriers deployed to the Persian Gulf is about five to one.

Although the combination of carriers and Marine amphibious groups offer a unique and highly capable set of options for commanders, it is far from certain that the Navy's one-size-fits all approach is appropriate to every contingency or to every engagement mission now assumed by U.S. forces. First of all, the need for carriers in peacetime, "show-the-flag" missions should be reevaluated and reduced. The Navy is right to assert, as quoted above, that "being

'on-scene' matters" to reassure America's allies and intimidate potential adversaries. But where American strategic interests are well understood and long-standing, especially in Europe and in the Persian Gulf – or in Korea – the ability to position forces ashore offsets the need for naval presence.

While carrier aviation still has a large role to play in naval operations, that role is becoming relatively less important.

More importantly, the role of carriers in war is certainly changing. While carrier aviation still has a large role to play in naval operations, that role is becoming *relatively less* important. A review of post-Cold War operations conducted by the American military reveals one salient factor: carriers have almost always played a secondary role. Operation Just Cause in Panama was almost exclusively an Army and Air Force operation. The Gulf War, by far the largest operation in the last decade, involved significant elements of all services, but the air campaign was primarily an Air Force show and the central role in the ground war was played by Army units. The conduct of post-war no-fly zones has frequently involved Navy aircraft, but their role has been to lighten the burden on the Air Force units that have flown the majority of sorties in these operations. Naval forces also have participated in the periodic strikes against Iraq, but even during the largest of these, Operation Desert Fox in December 1998, Navy aircraft did not have range to reach certain targets or were not employed against well-defended targets. These are now missions handled almost exclusively by stealthy aircraft or cruise missiles. Likewise, during Operation Allied Force, Navy planes played a reinforcing role. And, of course, neither Navy nor Marine units have played a significant role in peacekeeping duties in Bosnia or Kosovo.

The one recent operation where naval forces, and carrier forces in particular, did play the leading role is also suggestive of the Navy's future: the dispatching of two carrier battle groups to the waters off Taiwan during the 1996 Chinese "missile blockade." Several factors are worth noting. First, the crisis occurred in East Asia, in the western Pacific Ocean. Thus, the Navy was uniquely positioned and postured to respond. Not only did the Seventh Fleet make it first on the scene, but deploying and sustaining ground forces or land-based aircraft to the region would have been difficult. Second, the potential enemy was China. Although Pentagon thinking about major theater war in East Asia has centered on Korea – where again land and land-based air forces would likely play the leading role – the Taiwan crisis was perhaps more indicative of the longer-range future. A third question has no easy answer: what, indeed, would these carrier battle groups have been able to do in the event of escalation or the outbreak of hostilities? Had the Chinese actually targeted missiles at Taiwan, it is doubtful that the Aegis air-defense systems aboard the cruisers and destroyers in the battle groups could have provided an effective defense. Punitive strikes against Chinese forces by carrier aircraft, or cruise missile strikes, might have been a second option, but a problematic option. And, as in recent strike operations elsewhere, initial attacks certainly would have employed cruise missiles exclusively, or perhaps cruise missiles and stealthy, land-based aircraft.

Thus, while naval presence, including carrier presence, in the western Pacific should be increased, the Navy should begin to conduct many of its presence missions with other kinds of battle groups based around cruisers, destroyers and other surface combatants as well as submarines. Indeed, the Navy needs to better understand the requirement to have substantial numbers of cruise-missile platforms at sea and in close proximity to regional hot spots, using carriers and naval aviation as reinforcing elements. Moreover, the reduced need for naval aviation in the European theater and in the Gulf suggests that the carrier elements in the Atlantic fleet can be reduced. Therefore, in addition to the two forward-based carrier groups recommended above, the Navy should retain a further fleet of three active plus one reserve carriers homeported on the west coast of the United States and a three-carrier Atlantic fleet. Overall, this represents a reduction of three carriers.

The Navy's surface fleet is too small to meet current requirements, war plans and future missile defense duties.

However, the reduction in carriers must be offset by an increase in surface combatants, submarines and also in support ships to make up for the logistics functions that the carrier performs for the entire battle group. As indicated above, the surface fleet is already too small to meet current requirements and must be expanded to accommodate the requirements for sea-based ballistic missile defenses. Further, the Navy's fleet of frigates is likely to be inadequate for the long term, and the need for smaller and simpler ships to respond to presence and other lesser contingency missions should be examined by the Navy. To patrol the American security perimeter at sea, including a significant role in theater missile defenses, might require a surface combatant fleet of 150 vessels.

The Navy's force of attack submarines also should be expanded. While many of the true submarine requirements like intelligence-gathering missions and as cruise-missile platforms were not considered fully during the QDR – and it will take some time to understand how submarine needs would change to make up for changes in the carrier force – by any reckoning the 50-boat fleet now planned is far too small. However, as is the case with surface combatants, the need to increase the size of the fleet must compete with the need to introduce new classes of vessels that have advanced capabilities. It is unclear that the current and planned generations of attack submarines (to say nothing of new ballistic missile submarines) will be flexible enough to meet future demands. The Navy should reassess its submarine requirements not merely in light of current missions but with an expansive view of possible future missions as well.

Finally, the reduction in carriers should *not* be accompanied by a commensurate reduction in naval air wings. Already, the Navy maintains just 10 air wings, too small a structure for the current carrier fleet, especially considering the rapid aging of the Navy's aircraft. Older fighters like the F-14 have taken on new strike missions, and the multi-mission F/A-18 is wearing out faster than expected due to higher-than-anticipated rates of use and more stressful uses. Even should the Navy simply cease to purchase aircraft carriers today, it could maintain a nine-carrier force until 2025, assuming the CVN-77, already programmed under current defense budgets, was built. A small carrier fleet must be maintained at a higher state of readiness for combat while in port, as should Navy air wings.

Marine Corps: 'Back to the Future'

For the better part of a century, the United States has maintained the largest complement of naval infantry of any nation. The U.S. Marine Corps, with a three-division structure mandated by law and with a strength of more than 170,000, is larger than all but a few land armies in the world. Its close relationship with the Navy – to say nothing of its own highly sophisticated air force – gives the Corps extraordinary mobility and combat power. Even as it has been reduced by about 15 percent since the end of the Cold War, the Marine Corps has added new capabilities, notably for special operations and most recently for response to chemical and biological strikes. This versatility, combined with a punishing deployment schedule, makes the Marine Corps a valuable tool for maintaining American global influence and military preeminence; Marines afloat can both respond relatively rapidly in times of crisis, yet loiter ashore for extended periods of time.

Yet while this large Marine Corps is uniquely valuable to a world power like the United States, it must be understood that the Corps fills but a niche in the overall capabilities needed for American military preeminence. The Corps lacks the sophisticated and sustainable land-power capabilities of the Army; the high-performance, precision-strike capabilities of the Air Force; and, absent its partnership with the Navy, lacks firepower. Restoring the health of the Marine Corps will require not only purchases of badly needed new equipment and restoring the strength of the Corps to something near 200,000 Marines, it will also depend on the Corps' ability to focus on its core naval infantry mission – a mission of renewed importance to American security strategy.

In particular, the Marine Corps, like the Navy, must turn its focus on the requirements for operations in East Asia, including Southeast Asia. In many ways, this will be a "back to the future" mission for the Corps, recalling the innovative thinking done during the period between the two world wars and which established the Marines' expertise in amphibious landings and operations. Yet it will also require the Corps to shed some of its current capacity – such as heavy tanks and artillery – acquired during the late Cold War years. It will also require the Marines to acquire the ability to work better with other services, notably the Army and Air Force, by improving its communications, data links and other systems needed for sophisticated joint operations, and of course by more frequent joint exercises. These new missions and requirements will increase the need for Marine modernization, especially in acquiring the V-22 "Osprey" tilt-rotor aircraft, which will give the Corps extended operational range. And, as will be discussed in greater detail in the section on transformation, the Marine Corps must begin now to address the likely increased vulnerability of surface ships in future conflicts. To maintain its unique and valuable role, the Marine Corps should:

- **Be expanded to permit the forward basing of a second Marine Expeditionary Unit (MEU) in East Asia. This MEU should be based in Southeast Asia along with the repositioned Navy carrier battle group as described above.**

- **Likewise be increased in strength by about 25,000 to improve the personnel status of Marine units, especially nondeployed units undergoing training.**

- **Be realigned to create lighter units with greater infantry strength and better abilities for joint operations, especially including other services' fires in support of Marine operations. The Marine Corps should review its**

unit and force structure to eliminate marginal capabilities.

- **Accelerate the purchase of V-22 aircraft and the Advanced Amphibious Assault Vehicle to improve ship-to-shore maneuver, and increase tactical mobility and range.**

The State of the Marine Corps

Like its sister sea service, the Marine Corps is suffering from more missions than it can handle and a shortage of resources. Although Corps commandants have tended to emphasize Marine modernization problems, the training and readiness of units that are not actually deployed have also plummeted. The Marines' ability to field the large force that contributed greatly to the Gulf War land campaign is increasingly in doubt. Of all the service chiefs of staff, recently retired Marine Commandant Gen. Charles Krulak was the first to publicly admit that his service was not capable of executing the missions called for in the national military strategy.

Like the Navy, the Marine Corps has paid the price for rotational readiness in terms of on-shore training, modernization and quality of life. Marine Corps leaders stress that much of the problem stems from the age of the Marines' equipment: "Our problems today are caused by the fact that we are, and have been, plowing scarce resources – Marines, money, material – into our old equipment and weapon systems in an attempt to keep them operational," Krulak explained to Congress shortly before retiring.

Much Marine equipment is serving far beyond its programmed service life. And although the Marine Corps has invested heavily in programs to extend the life of these systems, equipment availability rates are falling throughout the service. Marine equipment always wears out rapidly, due to the corrosive effects of salt water on metal

The V-22 Osprey will increase the speed and range with which Marines can deploy.

and electronics. Even a relatively modern piece of Marine equipment, the Light Armored Vehicle, is feeling the effect. In 1995, the Marines began an "Inspect, Repair Only as Necessary" program on the Light Armored Vehicle, and have experienced a 25 percent rise in the cost per vehicle and a 46 percent rise in the number of vehicles requiring the repairs. For some Marine units, the biggest challenge is the availability of parts, even in such a time of repair and recovery. At Camp Lejuene, North Carolina, maintenance officers and NCOs make near-daily trips to nearby Fort Bragg to get parts for inoperable vehicles such as the battalion's High Mobility Multipurpose Wheeled Vehicles (HMMWV). In part because the Marines have the oldest version of the HMMWV, no longer made for the Army, bartering with the 82nd Airborne is the most common answer for procuring a needed part.

But although the Marine Corps' primary concern is again equipment, the service is hardly immune to the personnel and training problems plaguing the other services. Faced not only with a demanding schedule of traditional six-month sea deployments but with an increasing load of unanticipated duties, the interdeployment "bathtub of unreadiness" has deepened and the climb out has grown steeper. Like the Navy, the Marine Corps has had to curtail its on-shore

training, especially in the rudiments that are the building blocks of unit readiness. Even then, it may be required to deploy smaller elements to assist other units in training or participate in exercises. Often, Marine units will be forced to send under-strength units for major live-fire and maneuver exercises that in times past were the keys to deployed readiness. Moreover, large Marine units lack the infantry punch they had in the past. Marine divisions have fewer rifleman than in past; as the overall strength of the Marine Corps has been cut from 197,000 to the 172,000 as specified in the Quadrennial Defense Review, the number of infantry battalions in the division was cut from 11 to nine; authorized personnel in the division went from 19,161 to 15,816.

Navy Department spending should be increased to between $100 and $110 billion annually.

Navy and Marine Corps Budgets

President Clinton's 2001 budget request included $91.7 billion for the Department of the Navy. (This figure includes funding for the Navy and Marine Corps.) This is an increase from the $87.2 billion approved by Congress for 2000, a sharp reduction from the Navy's $107 billion budget in 1992, the first true post-Cold-War budget.

Equally dramatic is the reduction in Navy Department procurement budgets. For 2000, the administration requested just under $22 billion in total Navy and Marine Corps procurement; from 1994 through 1997, at the peak of the "procurement holiday," department procurement budgets averaged just $17 billion. By contrast, during the Bush years, Navy procurement averaged $35 billion; during the years of the Reagan buildup – arguably a relevant comparison, given the need to expand the size of the Navy again – Navy procurement budgets averaged $43 billion.

To realign and reconfigure the Navy as described above, Department of the Navy spending overall should be increased to between $100 billion and $110 billion. This slightly exceeds the levels of spending anticipated by the final Bush Administration, and is necessary to accelerate ship- and submarine-building efforts. After several years, this will be partially offset by the moratorium in aircraft carrier construction and by holding the Joint Strike Fighter program in research and development. Yet maintaining a Navy capable of dominating the open oceans, providing effective striking power to joint operations ashore and transforming itself for future naval warfare – in short, a Navy able to preserve U.S. maritime preeminence – will require much more than marginal increases in Navy budgets.

V
CREATING TOMORROW'S DOMINANT FORCE

To preserve American military preeminence in the coming decades, the Department of Defense must move more aggressively to experiment with new technologies and operational concepts, and seek to exploit the emerging revolution in military affairs. Information technologies, in particular, are becoming more prevalent and significant components of modern military systems. These information technologies are having the same kind of transforming effects on military affairs as they are having in the larger world. The effects of this military transformation will have profound implications for how wars are fought, what kinds of weapons will dominate the battlefield and, inevitably, which nations enjoy military preeminence.

The United States enjoys every prospect of leading this transformation. Indeed, it was the improvements in capabilities acquired during the American defense buildup of the 1980s that hinted at and then confirmed, during Operation Desert Storm, that a revolution in military affairs was at hand. At the same time, the process of military transformation will present opportunities for America's adversaries to develop new capabilities that in turn will create new challenges for U.S. military preeminence.

Moreover, the Pentagon, constrained by limited budgets and pressing current missions, has seen funding for experimentation and transformation crowded out in recent years. Spending on military research and development has been reduced dramatically over the past decade. Indeed, during the mid-1980's, when the Defense Department was in the midst of the Reagan buildup which was primarily an effort to expand existing forces and field traditional weapons systems, research spending represented 20 percent of total Pentagon budgets. By contrast, today's research and development accounts total only 8 percent of defense spending. And even this reduced total is primarily for upgrades of current weapons. Without increased spending on basic research and development the United States will be unable to exploit the RMA and preserve its technological edge on future battlefields.

Any serious effort at transformation must occur within the larger framework of U.S. national security strategy, military missions and defense budgets. The United States cannot simply declare a "strategic pause" while experimenting with new technologies and operational concepts. Nor can it choose to pursue a transformation strategy that would decouple American and allied interests. A transformation strategy that solely pursued capabilities for projecting force from the United States, for example, and sacrificed forward basing and presence, would be at odds with larger American

The effects of the RMA will have profound implications for how wars are fought, what weapons dominate, and which nations enjoy military preeminence.

policy goals and would trouble American allies.

Further, the process of transformation, even if it brings revolutionary change, is likely to be a long one, absent some catastrophic and catalyzing event – like a new Pearl Harbor. Domestic politics and industrial policy will shape the pace and content of transformation as much as the requirements of current missions. A decision to suspend or terminate aircraft carrier production, as recommended by this report and as justified by the clear direction of military technology, will cause great upheaval. Likewise, systems entering production today – the F-22 fighter, for example – will be in service inventories for decades to come. Wise management of this process will consist in large measure of figuring out the right moments to halt production of current-paradigm weapons and shift to radically new designs. The expense associated with some programs can make them roadblocks to the larger process of transformation – the Joint Strike Fighter program, at a total of approximately $200 billion, seems an unwise investment. Thus, this report advocates a two-stage process of change – transition and transformation – over the coming decades.

In general, to maintain American military preeminence that is consistent with the requirements of a strategy of American global leadership, tomorrow's U.S. armed forces must meet three new missions:

- **Global missile defenses. A network against limited strikes, capable of protecting the United States, its allies and forward-deployed forces, must be constructed. This must be a layered system of land, sea, air and space-based components.**

- **Control of space and cyberspace. Much as control of the high seas – and the protection of international commerce – defined global powers in the past, so will control of the new "international commons" be a key to world power in the future. An America incapable of protecting its interests or that of its allies in space or the "infosphere" will find it difficult to exert global political leadership.**

- **Pursuing a two-stage strategy for of transforming conventional forces. In exploiting the "revolution in military affairs," the Pentagon must be driven by the enduring missions for U.S. forces. This process will have two stages: transition, featuring a mix of current and new systems; and true transformation, featuring new systems, organizations and operational concepts. This process must take a competitive approach, with services and joint-service operations competing for new roles and missions. Any successful process of transformation must be linked to the services, which are the institutions within the Defense Department with the ability and the responsibility for linking budgets and resources to specific missions.**

Missile Defenses

Ever since the Persian Gulf War of 1991, when an Iraqi Scud missile hit a Saudi warehouse in which American soldiers were sleeping, causing the largest single number of casualties in the war; when Israeli and Saudi citizens donned gas masks in nightly terror of Scud attacks; and when the great "Scud Hunt" proved to be an elusive game that absorbed a huge proportion of U.S. aircraft, the value of the ballistic missile has been clear to America's adversaries. When their missiles are tipped with warheads carrying nuclear, biological, or chemical weapons, even weak regional powers have a credible deterrent, regardless of the balance of conventional forces. That is why, according to the CIA, a number of regimes deeply hostile to America – North Korea,

Iraq, Iran, Libya and Syria – "already have or are developing ballistic missiles" that could threaten U.S allies and forces abroad. And one, North Korea, is on the verge of deploying missiles that can hit the American homeland. Such capabilities pose a grave challenge to the American peace and the military power that preserves that peace.

To increase their effectiveness, ground-based interceptors like the Army's Theater High-Altitude Area Defense System must be networked to space-based systems.

The ability to control this emerging threat through traditional nonproliferation treaties is limited when the geopolitical and strategic advantages of such weapons are so apparent and so readily acquired. The Clinton Administration's diplomacy, threats and pleadings did nothing to prevent first India and shortly thereafter Pakistan from demonstrating their nuclear capabilities. Nor have formal international agreements such as the 1987 Missile Technology Control Regime done much to stem missile proliferation, even when backed by U.S. sanctions; in the final analysis, the administration has preferred to subordinate its nonproliferation policy to larger regional and country-specific goals. Thus, President Clinton lamented in June 1998 that he found sanctions legislation so inflexible that he was forced to "fudge" the intelligence evidence on China's transfer of ballistic missiles to Pakistan to avoid the legal requirements to impose sanctions on Beijing.

At the same time, the administration's devotion to the 1972 Anti-Ballistic Missile (ABM) Treaty with the Soviet Union has frustrated development of useful ballistic missile defenses. This is reflected in deep budget cuts – planned spending on missile defenses for the late 1990s has been more than halved, halting work on space-based interceptors, cutting funds for a national missile defense system by 80 percent and theater defenses by 30 percent. Further, the administration has cut funding just at the crucial moments when individual programs begin to show promise. Only upgrades of currently existing systems like the Patriot missile – originally designed primarily for air defense against jet fighters, not missile defense – have proceeded generally on course.

Most damaging of all was the decision in 1993 to terminate the "Brilliant Pebbles" project. This legacy of the original Reagan-era "Star Wars" effort had matured to the point where it was becoming feasible to develop a space-based interceptor capable of destroying ballistic missiles in the early or middle portion of their flight – far preferable than attempting to hit individual warheads surrounded by clusters of decoys on their final course toward their targets. But since a space-based system would violate the ABM Treaty, the administration killed the "Brilliant Pebbles" program, choosing instead to proceed with a ground-based interceptor and radar system – one that will be costly without being especially effective.

While there is an argument to be made for "terminal" ground-based interceptors as an element in a larger architecture of missile defenses, it deserves the lowest rather than the first priority. The first element in any missile defense network should be a galaxy of surveillance satellites with sensors capable of acquiring enemy ballistic missiles immediately upon launch. Once a missile is tracked and targeted, this information needs

to be instantly disseminated through a world-wide command-and-control system, including direct links to interceptors. To address the special problems of theater-range ballistic missiles, theater-level defenses should be layered as well. In addition to space-based systems, these theater systems should include both land- and sea-based interceptors, to allow for deployment to trouble spots to reinforce theater systems already in place or to cover gaps where no defenses exist. In addition, they should be "two-tiered," providing close-in "point defense" of valuable targets and forces as well as upper-level, "theater-wide" coverage.

Current programs could provide the necessary density for a layered approach to theater missile defense, although funding for each component has been inadequate, especially for the upper-tier, sea based effort, known as the Navy Theater-Wide program. Point defense is to be provided by the Patriot Advanced Capability, Level 3, or PAC-3 version of the Patriot air defense missile and by the Navy Area Defense system, likewise an upgrade of the current Standard air defense missile and the Aegis radar system. Both systems are on the verge of being deployed.

The Clinton Administration's adherence to the 1972 ABM Treaty has frustrated development of useful ballistic missile defenses.

These lower-tier defenses, though they will be capable of providing protection against the basic Scuds and Scud variants that comprise the arsenals of most American adversaries today, are less effective against longer-range, higher-velocity missiles that several states have under development. Moreover, they will be less effective against missiles with more complex warheads or those that break apart, as many Iraqi modified Scuds did during the Gulf War. And finally, point defenses, even when they successfully intercept an incoming missile, may not offset the effects against weapons of mass destruction.

Thus the requirement for upper-tier, theater-wide defenses like the Army's Theater High Altitude Area Defense (THAAD) and the Navy Theater-Wide systems. Though housed in a Patriot-like launcher, THAAD is an entirely new system designed to intercept medium-range ballistic missiles earlier in their flight, in the so-called "mid-course." The Navy Theater-Wide system is based upon the Aegis system, with an upgraded radar and higher-velocity – though intentionally slowed down to meet administration concerns over violating the ABM Treaty – version of the Standard missile. The THAAD system has enjoyed recent test success, but development of the Navy Theater-Wide system has been hampered by lack of funds. Similarly, a fifth component of a theater-wide network of ballistic missile defenses, the Air Force's airborne laser project, has suffered from insufficient funding. This system, which mounts a high energy laser in a 747 aircraft, is designed to intercept theater ballistic missiles in their earliest, or "boost" phase, when they are most vulnerable.

To maximize their effectiveness, these theater-level interceptors should receive continuous targeting information directly from a global constellation of satellites carrying infrared sensors capable of detecting ballistic missile launches as they happen. The low-earth-orbit tier of the Space-Based Infrared System (SBIRS Low), now under development by the Air Force, will provide continuous observations of ballistic missiles in the boost, midcourse and reentry phases of attack. Current missile tracking radars can see objects only above the horizon and must be placed in friendly territory; consequently, they are most effective only in the later phases of a ballistic missile's flight. SBIRS Low, however, can see a hostile missile earlier in

its trajectory, increasing times for interception and multiplying the effectiveness of theater-range interceptors by cueing their radars with targeting data. It will also provide precise launch-point information, allowing theater forces a better chance to destroy hostile launchers before more missiles can be fired. There is also a SBIRS High project, but both SBIRS programs have suffered budget cuts that are to delay their deployments by two years.

But to be most effective, this array global reconnaissance and targeting satellites should be linked to a global network of space-based interceptors (or space-based lasers). In fact, it is misleading to think of such a system as a "national" missile defense system, for it would be a vital element in theater defenses, protecting U.S. allies or expeditionary forces abroad from longer-range theater weapons. This is why the Bush Administration's missile defense architecture, which is almost identical to the network described above, was called Global Protection Against Limited Strikes (GPALS). By contrast, the Clinton Administration's plan to develop limited national missile defenses based upon Minuteman III missiles fitted with a so-called "exoatmospheric kill vehicle" is the most technologically challenging, most expensive, and least effective form of long-range ballistic missile defense. Indeed, the Clinton Administration's differentiation between theater and national missile defense systems is yet another legacy of the ABM Treaty, one that does not fit the current strategic circumstances. Moreover, by differentiating between national and theater defenses, current plans drive a wedge between the United States and its allies, and risk "decoupling." Conversely, American interests will diverge from those of our allies if theater defenses can protect our friends and forces abroad, but the American people at home remain threatened.

In the post-Cold War era, America and its allies, rather than the Soviet Union, have become the primary objects of deterrence and it is states like Iraq, Iran and North Korea who most wish to develop deterrent capabilities. Projecting conventional military forces or simply asserting political influence abroad, particularly in times of crisis, will be far more complex and constrained when the American homeland or the territory of our allies is subject to attack by otherwise weak rogue regimes capable of cobbling together a miniscule ballistic missile force. Building an effective, robust, layered, global system of missile defenses is a prerequisite for maintaining American preeminence.

Space and Cyberspace

No system of missile defenses can be fully effective without placing sensors and weapons in space. Although this would appear to be creating a potential new theater of warfare, in fact space has been militarized for the better part of four decades. Weather, communications, navigation and reconnaissance satellites are increasingly essential elements in American military power. Indeed, U.S. armed forces are uniquely dependent upon space. As the 1996 Joint Strategy Review, a precursor to the 1997 Quadrennial Defense Review, concluded, "Space is already inextricably linked to military operations on land, on the sea, and in the air." The report of the National Defense Panel agreed: "Unrestricted use of space has become a major strategic interest of the United States."

Given the advantages U.S. armed forces enjoy as a result of this unrestricted use of space, it is shortsighted to expect potential adversaries to refrain from attempting to offset to disable or offset U.S. space capabilities. And with the proliferation of space know-how and related technology around the world, our adversaries will inevitably seek to enjoy many of the same space advantages in the future. Moreover, "space commerce" is a growing part of the global economy. In 1996, commercial

launches exceeded military launches in the United States, and commercial revenues exceeded government expenditures on space. Today, more than 1,100 commercial companies across more than 50 countries are developing, building, and operating space systems.

Many of these commercial space systems have direct military applications, including information from global positioning system constellations and better-than-one-meter resolution imaging satellites. Indeed, 95 percent of current U.S. military communications are carried over commercial circuits, including commercial communications satellites. The U.S. Space Command foresees that in the coming decades,

> *an adversary will have sophisticated regional situational awareness. Enemies may very well know, in near-real time, the disposition of all forces….In fact, national military forces, paramilitary units, terrorists, and any other potential adversaries will share the high ground of space with the United States and its allies. Adversaries may also share the same commercial satellite services for communications, imagery, and navigation….The space "playing field" is leveling rapidly, so U.S. forces will be increasingly vulnerable. Though adversaries will benefit greatly from space, losing the use of space may be more devastating to the United States. It would be intolerable for U.S. forces...to be deprived of capabilities in space.*

In short, the unequivocal supremacy in space enjoyed by the United States today will be increasingly at risk. As Colin Gray and John Sheldon have written, "Space control is not an avoidable issue. It is not an optional extra." For U.S. armed forces to continue to assert military preeminence, control of space – defined by Space Command as "the ability to assure access to space, freedom of operations within the space medium, and an ability to deny others the use of space" – must be an essential element of our military strategy. If America cannot maintain that control, its ability to conduct global military operations will be severely complicated, far more costly, and potentially fatally compromised.

As exemplified by the Global Positioning Satellite above, space has become a new 'international commons' where commercial and security interests are intertwined.

The complexity of space control will only grow as commercial activity increases. American and other allied investments in space systems will create a requirement to secure and protect these space assets; they are already an important measure of American power. Yet it will not merely be enough to protect friendly commercial uses of space. As Space Command also recognizes, the United States must also have the capability to deny America's adversaries the use of commercial space platforms for military purposes in times of crises and conflicts. Indeed, space is likely to become the new "international commons," where commercial and security interests are intertwined and related. Just as Alfred Thayer Mahan wrote about "sea-power" at the beginning of the 20th century in this sense, American strategists will be forced to regard "space-power" in the 21st.

To ensure America's control of space in the near term, the minimum requirements are to develop a robust capability to transport systems to space, carry on operations once there, and service and recover space systems as needed. As outlined by Space Command, carrying out this program would include a mix of re-useable and expendable launch vehicles and vehicles that can operate within space, including "space tugs to deploy, reconstitute, replenish, refurbish, augment, and sustain" space systems. But, over the longer term, maintaining control of space will inevitably require the application of force both in space and from space, including but not limited to anti-missile defenses and defensive systems capable of protecting U.S. and allied satellites; space control cannot be sustained in any other fashion, with conventional land, sea, or airforce, or by electronic warfare. This eventuality is already recognized by official U.S. national space policy, which states that the "Department of Defense shall maintain a capability to execute the mission areas of space support, force enhancement, space control and *force application*." (Emphasis added.)

In the future, it will be necessary to unite the current SPACECOM vision for control of space to the institutional responsibilities and interests of a separate military service.

In sum, the ability to preserve American military preeminence in the future will rest in increasing measure on the ability to operate in space militarily; both the requirements for effective global missile defenses and projecting global conventional military power demand it. Unfortunately, neither the Clinton Administration nor past U.S. defense reviews have established a coherent policy and program for achieving this goal.

Ends and Means of Space Control

As with defense spending more broadly, the state of U.S. "space forces" – the systems required to ensure continued access and eventual control of space – has deteriorated over the past decade, and few new initiatives or programs are on the immediate horizon. The U.S. approach to space has been one of dilatory drift. As Gen. Richard Myers, commander-in-chief of SPACECOM, put it, "Our Cold War-era capabilities have atrophied," even though those capabilities are still important today. And while Space Command has a clear vision of what must be done in space, it speaks equally clearly about "the question of resources." As the command succinctly notes its long-range plan: "When we match the reality of space dependence against resource trends, we find a problem."

But in addition to the problem of lack of resources, there is an institutional problem. Indeed, some of the difficulties in maintaining U.S. military space supremacy result from the bureaucratic "black hole" that prevents the SPACECOM vision from gaining the support required to carry it out. For one, U.S. military space planning remains linked to the ups and downs of the National Aeronautics and Space Administration. America's difficulties in reducing the cost of space launches – perhaps the single biggest hurdle to improving U.S. space capabilities overall – result in part from the requirements and dominance of NASA programs over the past several decades, most notably the space shuttle program. Secondly, within the national security bureaucracy, the majority of space investment decisions are made by the National Reconnaissance Office and the Air Force, neither of which considers military operations outside the earth's atmosphere as a primary mission. And there is no question that in an era of tightened

budgets, investments in space-control capabilities have suffered for lack of institutional support and have been squeezed out by these organization's other priorities. Although, under the Goldwater-Nichols reforms of the mid-1980s, the unified commanders – of which SPACECOM is one – have a greater say in Pentagon programming and budgeting, these powers remain secondary to the traditional "raise-and-train" powers of the separate services.

Therefore, over the long haul, it will be necessary to unite the essential elements of the current SPACECOM vision to the resource-allocation and institution-building responsibilities of a military service. In addition, it is almost certain that the conduct of warfare in outer space will differ as much from traditional air warfare as air warfare has from warfare at sea or on land; space warfare will demand new organizations, operational strategies, doctrines and training schemes. Thus, the argument to replace U.S. Space Command with U.S. Space Forces – a separate service under the Defense Department – is compelling. While it is conceivable that, as military space capabilities develop, a transitory "Space Corps" under the Department of the Air Force might make sense, it ought to be regarded as an intermediary step, analogous to the World War II-era Army Air Corps, not to the Marine Corps, which remains a part of the Navy Department. If space control is an essential element for maintaining American military preeminence in the decades to come, then it will be imperative to reorganize the Department of Defense to ensure that its institutional structure reflects new military realities.

Cyberpace, or 'Net-War'

If outer space represents an emerging medium of warfare, then "cyberspace," and in particular the Internet hold similar promise and threat. And as with space, access to and use of cyberspace and the Internet are emerging elements in global commerce, politics and power. Any nation wishing to assert itself globally must take account of this other new "global commons."

The Internet is also playing an increasingly important role in warfare and human political conflict. From the early use of the Internet by Zapatista insurgents in Mexico to the war in Kosovo, communication by computer has added a new dimension to warfare. Moreover, the use of the Internet to spread computer viruses reveals how easy it can be to disrupt the normal functioning of commercial and even military computer networks. Any nation which cannot assure the free and secure access of its citizens to these systems will sacrifice an element of its sovereignty and its power.

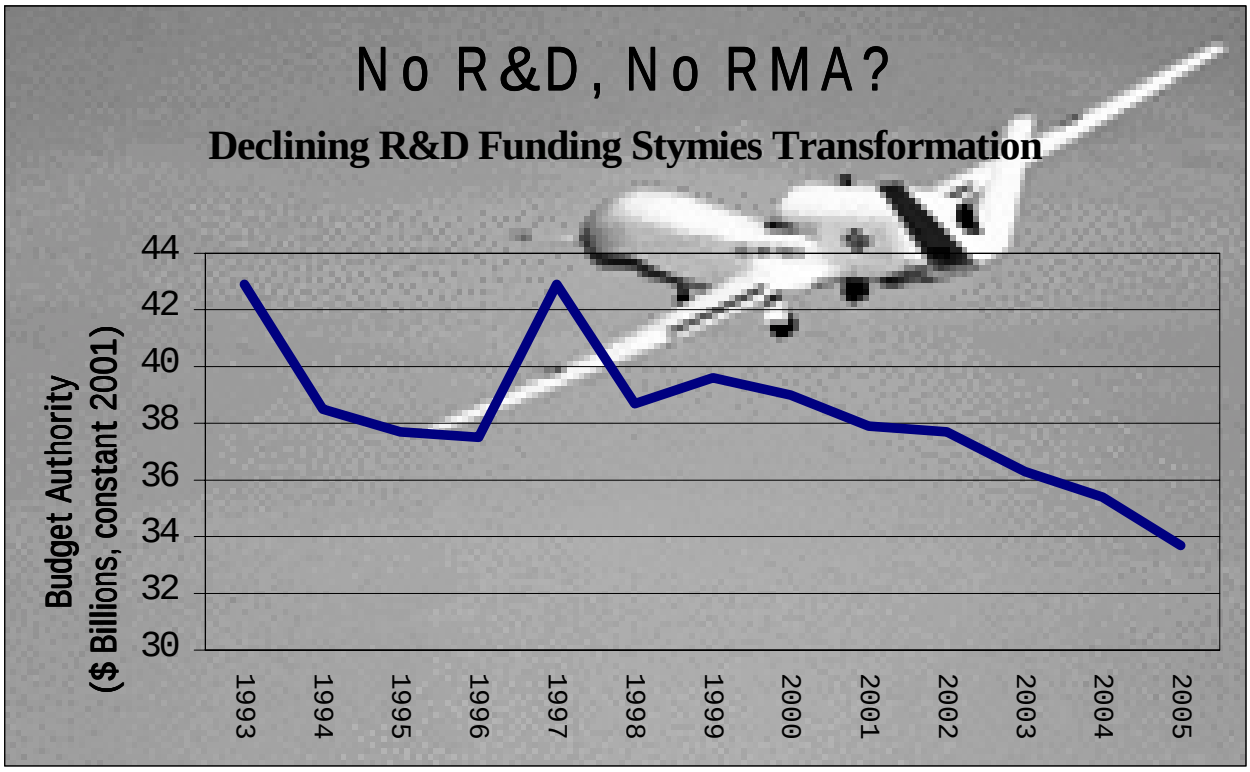
Although many concepts of "cyber-war" have elements of science fiction about them, and the role of the Defense Department in establishing "control," or even what "security" on the Internet means, requires a consideration of a host of legal, moral and political issues, there nonetheless will remain an imperative to be able to deny America and its allies' enemies the ability to disrupt or paralyze either the military's or the commercial sector's computer networks. Conversely, an offensive capability could offer America's military and political leaders an invaluable tool in disabling an adversary in a decisive manner.

Taken together, the prospects for space war or "cyberspace war" represent the truly revolutionary potential inherent in the notion of military transformation. These future forms of warfare are technologically immature, to be sure. But, it is also clear that for the U.S. armed forces to remain preeminent and avoid an Achilles Heel in the exercise of its power they must be sure that these potential future forms of warfare favor America just as today's air, land and sea warfare reflect United States military dominance.

Transforming U.S. Conventional Forces

Much has been written in recent years about the need to transform the conventional armed forces of the United States to take advantage of the "revolution in military affairs," the process of transformation within the Defense Department has yet to bear serious fruit. The two visions of transformation promulgated by the Joint Chiefs of Staff – Joint Vision 2010 and the just-released Joint Vision 2020 – have been broad statements of principles and of commitment to transformation, but very little change can be seen in the acquisition of new weapons systems. Indeed, new ideas like the so-called "arsenal ship" which might actually have accelerated the process of transformation have been opposed and seen their programs terminated by the services. Neither does the current process of "joint experimentation" seem likely to speed the process of change. In sum, the transformation of the bulk of U.S. armed forces has been stalled. Until the process of transformation is treated as an enduring mission – worthy of a constant allocation of dollars and forces – it will remain stillborn.

There are some very good reasons why this is so. In an era of insufficient defense resources, it has been necessary to fund or staff any efforts at transformation by short-changing other, more immediate, requirements. Consequently, the attempt to deal with the longer-term risks that a failure to transform U.S. armed forces will create has



threatened to raise the risks those forces face today; this is an unpleasant dilemma for a force straining to meet the burdens of its current missions. Activity today tends to drive out innovation for tomorrow. Second, the lack of an immediate military competitor contributes to a sense of complacency about the extent and duration of American military dominance. Third, and perhaps most telling, the process of transformation has yet to be linked to the strategic tasks necessary to maintain American military dominance. This is in part a problem for transformation enthusiasts, who are better at forecasting technological developments than aligning those technological developments with the requirements for American preeminence. Thus consideration of the so-called "anti-access problem" – the observation that the proliferation of long-range, precision-strike capabilities will complicate the projection of U.S. military power and forces – has proceeded without much discussion of the strategic effects on U.S. allies and American credibility of increased reliance on weapons and forces based in the United States rather than operating from forward locations. There may be many solutions to the anti-access problem, but only a few that will tend to maintain rather than dilute American geopolitical leadership.

Further, transformation advocates tend to focus on the nature of revolutionary new capabilities rather than how to achieve the necessary transformation: thus the National Defense Panel called for a strategy *of* transformation without formulating a strategy *for* transformation. There has been little discussion of exactly how to change today's force into tomorrow's force, while maintaining U.S. military preeminence along the way. Therefore, it will be necessary to undertake a two-stage process of *transition* – whereby today's "legacy" forces are modified and selectively modernized with new systems readily available – and true *transformation* – when the results of vigorous experimentation introduce radically new weapons, concepts of operation, and organization to the armed services.

This two-stage process is likely to take several decades. Yet, although the precise shape and direction of the transformation of U.S. armed forces remains a matter for rigorous experimentation and analysis (and will be discussed in more detail below in the section on the armed services), it is possible to foresee the general characteristics of the current revolution in military affairs. Broadly speaking, these cover several principal areas of capabilities:

- **Improved situational awareness and sharing of information,**
- **Range and endurance of platforms and weapons,**
- **Precision and miniaturization,**
- **Speed and stealth,**
- **Automation and simulation.**

These characteristics will be combined in various ways to produce new military capabilities. New classes of sensors – commercial and military; on land, on and under sea, in the air and in space – will be linked together in dense networks that can be rapidly configured and reconfigured to provide future commanders with an unprecedented understanding of the battlefield. Communications networks will be equally if not more ubiquitous and dense, capable of carrying vast amounts of information securely to provide widely dispersed and diverse units with a common picture of the battlefield. Conversely, stealth techniques will be applied more broadly, creating "hider-finder" games of cat-and-mouse between sophisticated military forces. The proliferation of ballistic and cruise missiles and long-range unmanned aerial vehicles (UAVs) will make it much easier to project military power around the globe. Munitions themselves will become increasingly accurate, while new methods of attack – electronic, "non-lethal," biological – will be more widely available. Low-cost, long-endurance UAVs,

and even unattended "missiles in a box" will allow not only for long-range power projection but for sustained power projection. Simulation technologies will vastly improve military training and mission planning.

Although it may take several decades for the process of transformation to unfold, in time, the art of warfare on air, land, and sea will be vastly different than it is today, and "combat" likely will take place in new dimensions: in space, "cyber-space," and perhaps the world of microbes. Air warfare may no longer be fought by pilots manning tactical fighter aircraft sweeping the skies of opposing fighters, but a regime dominated by long-range, stealthy unmanned craft. On land, the clash of massive, combined-arms armored forces may be replaced by the dashes of much lighter, stealthier and information-intensive forces, augmented by fleets of robots, some small enough to fit in soldiers' pockets. Control of the sea could be largely determined not by fleets of surface combatants and aircraft carriers, but from land- and space-based systems, forcing navies to maneuver and fight underwater. Space itself will become a theater of war, as nations gain access to space capabilities and come to rely on them; further, the distinction between military and commercial space systems – combatants and noncombatants – will become blurred. Information systems will become an important focus of attack, particularly for U.S. enemies seeking to short-circuit sophisticated American forces. And advanced forms of biological warfare that can "target" specific genotypes may transform biological warfare from the realm of terror to a politically useful tool.

This is merely a glimpse of the possibilities inherent in the process of transformation, not a precise prediction. Whatever the shape and direction of this revolution in military affairs, the implications for continued American military preeminence will be profound. As argued above, there are many reasons to believe that U.S. forces already possess nascent revolutionary capabilities, particularly in the realms of intelligence, command and control, and long-range precision strikes. Indeed, these capabilities are sufficient to allow the armed services to begin an "interim," short- to medium-term process of transformation right away, creating new force designs and operational concepts – designs and concepts different than those contemplated by the current defense program – to maximize the capabilities that already exist. But these must be viewed as merely a way-station toward a more thoroughgoing transformation.

The individual services also need to be given greater bureaucratic and legal standing if they are to achieve these goals. Though a full discussion of this issue is outside the purview of this study, the reduced importance of the civilian secretaries of the military departments and the service chiefs of staff is increasingly inappropriate to the demands of a rapidly changing technological, strategic and geopolitical landscape. The centralization of power under the Office of the Secretary of Defense and chairman of the Joint Chiefs of Staff and Joint Staff, and the increased role of the theater commanders-in-chief, products of Cold-War-era defense reforms and especially the Goldwater-Nichols Act of 1986, have created a process of defense decision-making that often elevates immediate concerns above long-term needs. In an era of uncertainty and transformation, it is more important to foster competing points of view about the how to apply new technologies to enduring missions.

Until the process of transformation is treated as an enduring military mission – worthy of a constant allocation of dollars and forces – it will remain stillborn.

This is especially debilitating to the process of transformation, which has

become infected with a "lowest common denominator" approach. "Jointness" remains an important dimension of U.S. military power and it will be necessary to consider the joint role of the weapons, concepts of operations and organizations created through the process of transformation. The capability for seamless and decisive joint operations is an important aspect of warfare. Yet, the process of transformation will be better served by fostering a spirit of service competition and experimentation. At this early stage of transformation, it is unclear which technologies will prove most effective; better to undertake a variety of competing experiments, even though some may prove to be dead-ends. To achieve this goal, service institutions and prerogatives must be strengthened to restore a better balance within the Department of Defense. The essential first step is to rebuild service secretariats to attract highly talented people who enjoy the political trust of the administration they serve. A parallel second step is to reinvigorate the service staffs and to select energetic service chiefs of staff. At a time of rapid change, American military preeminence is more likely to be sustained through a vigorous competition for missions and resources than through a bureaucracy – and a conception of "jointness" – defined at the very height of the Cold War.

Toward a 21st Century Army

There is very little question that the development of new technologies increasingly will make massed, mechanized armies vulnerable in high-intensity wars against sophisticated forces. The difficulty of moving large formations in open terrain, even at night – suggested during the battle of Khafji during the Gulf War – has diminished the role of tank armies in the face of the kind of firepower and precision that American air power can bring to bear. This is an undeniable change in the nature of advanced land warfare, a change that will alter the size, structure and nature of the U.S. Army.

Yet the United States would be unwise to accept the larger proposition that the strategic value of land power has been eroded to the point where the nation no longer needs to maintain large ground forces. As long as wars and other military operations derive their logic from political purposes, land power will remain the truly decisive form of military power. Indeed, it is ironic that, as post-Cold-War military operations have become more sophisticated and more reliant on air power and long-range strikes, they have become less politically decisive. American military preeminence will continue to rest in significant part on the ability to maintain sufficient land forces to achieve political goals such as removing a dangerous and hostile regime when necessary. Thus, future Army forces – and land forces more broadly – must devise ways to survive and maneuver in a radically changed technological environment. The Army must become more tactically agile, more operationally mobile, and more strategically deployable. It must increasingly rely on other services to concentrate firepower when required, while concentrating on its "core competencies" of maneuver, situational awareness, and political decisiveness. In particular the process of Army transformation should:

- **Move ahead with experiments to create new kinds of independent units using systems now entering final development and early procurement – such as the V-22 tilt-rotor aircraft and the HIMARS light-weight rocket artillery system – capable of longer-range operations and self-deployments. Once mature, such units would replace forward-based heavy forces.**

- **Experiment vigorously to understand the long-term implications of the revolution in military affairs for land forces. In particular, the Army should develop ways to deploy and maneuver against adversaries with**

improved long-range strike capabilities.

As argued above, the two-stage process of transforming the U.S. armed forces is sufficiently important to consider it a separate mission for the military services and for the Joint Chiefs of Staff. The need for both the near-term and long-term transformation requires that a separate organization within these institutions act as the advocate and agent of revolutionary change. For the U.S. Army, the appropriate home for the transformation process is the Training and Doctrine Command. The service needs to establish a permanent unit under its Combined Arms Center at Fort Leavenworth, Kansas to oversee the process of research, development and experi-mentation required to transform today's Army into the Army of the future.

With the need to field the independent, combined-arms units described above, this "transformation laboratory" must be established as rapidly as possible. Although many of the weapons systems already exist or are readily available, the introduction of new systems such as an armored gun system, wheeled personnel carrier such as the Light Armored Vehicle or the HIMARS rocket artillery system in sufficient numbers will take several years. Further, the process of "digitization" – the proliferation of information and communications in tactical units – must be accelerated. Finally, the Army needs to increase its investment in selected new systems such as UAVs and the Comanche scout helicopter to field them more rapidly. These will need to be integrated into a coherent organization and doctrinal concept. The process of near-term experimentation needs to be sharply focused on meeting the Army's near- and mid-term needs, and to produce the new kinds of units needed.

Yet this initial process of transformation must be just the first step toward a more radical reconfiguring of the Army. Even while the Army is fielding new units that maximize current capabilities and introduce selected new systems, and understanding the challenges and opportunities of information-intensive operations, it must begin to seek answers to fundamental questions about future land forces. These questions include issues of strategic deployability, how to maneuver on increasingly transparent battlefields and how to operate in urban environments, to name but a few. If the first phase of transformation requires the better part of the next decade to complete, the Army must then be ready to begin to implement more far-reaching changes. Moreover, the technologies, operational concepts and organizations must be relatively mature – they can not merely exist as briefing charts or laboratory concepts. As the first phase of transformation winds down, initial field experiments for this second and more profound phase of change must begin.

While the exact scope and nature of such change is a matter for experimentation, Army studies already suggest that it will be dramatic. Consider just the potential changes that might effect the infantryman. Future soldiers may operate in encapsulated, climate-controlled, powered fighting suits, laced with sensors, and boasting chameleon-like "active" camouflage. "Skin-patch" pharmaceuticals help regulate fears, focus concentration and enhance endurance and strength. A display mounted on a soldier's helmet permits a comprehensive view of the battlefield – in effect to look around corners and over hills – and allows the soldier to access the entire combat information and intelligence system while filtering incoming data to prevent overload. Individual weapons are more lethal, and a soldier's ability to call for highly precise and reliable indirect fires – not only from Army systems but those of other services – allows each individual to have great influence over huge spaces. Under the "Land Warrior" program, some Army experts envision a "squad" of seven soldiers able to dominate an area the size of the Gettysburg battlefield – where, in 1863, some 165,000 men fought.

The Army's 'Land Warrior' experiments will greatly increase the value of dismounted infantry.

Even radical concepts such as those con-sidered under the "Land Warrior" project do not involve out-landish technologies or flights of science fiction. Many already exist today, and many follow developments in civilian medical, communications, infor-mation science and other fields of research. While initiating the process of transfor-mation in the near term, and while fielding new kinds of units to meet current missions, the Army must simultaneously invest and experiment vigorously to create the systems, soldiers, units and concepts to maintain American preeminence in land combat for the longer-term future.

Global Strikes from Air and Space

The rapidly growing ability of the U.S. Air Force to conduct precision strikes, over increasingly greater range, marks a significant change in the nature of high-technology warfare. From the Gulf War through the air war for Kosovo, the sophistication of Air Force precision bombing has continued to grow. Yet, ironically, as the Air Force seems to achieve the capabilities first dreamt of by the great pioneers and theorists of air power, the "technological moment" of manned aircraft may be entering a sunset phase. In retrospect, it is the sophistication of highly accurate munitions in the Kosovo campaign that stands out – even as the stealthy B-2 bomber was delivering satellite-guided bombs on 30-hour round-trip missions from Missouri to the Balkans and back, so was the Navy's ancient, slow, propeller-driven P-3 Orion aircraft, originally designed for submarine hunting, delivering precision-guided standoff weapons with much the same effectiveness. As the relative value of electronic systems and precision munitions increases, the need for advanced manned aircraft appears to be lessening. Moreover, as the importance of East Asia grows in U.S. military strategy, the requirements for range and endurance may outweigh traditional measures of aircraft performance. In sum, although the U.S. Air Force is enjoying a moment of technological and tactical supremacy, it is uncertain that the service is positioning itself well for a transformed future.

In particular, the Air Force's emphasis on traditional, tactical air operations is handicapping the nation's ability to maintain and extend its dominance in space. Over the past decade, the Air Force has intermittently styled itself as a "space and air force," and has prepared a number of useful long-range studies that underscore the centrality of space control in future military operations. Yet the service's pattern of investments has belied such an understanding of the future; as described above, the Air Force has ploughed every available dollar into the F-22 program. While the F-22 is a superb fighter and perhaps a workable strike aircraft, its value under a transformed paradigm of high-technology warfare may exceed its cost – had not the majority of the F-22 program already been paid for, the decision to proceed with the project today would have been dubious. As also argued

above, further investments in the Joint Strike Fighter program would be more expensive still and would forestall any major transformation efforts. Therefore, the Air Force should:

- **Complete its planned F-22 procurement while terminating its participation in the JSF program and upgrading the capabilities of existing tactical aircraft, especially by purchasing additional precision munitions and developing new ones and increasing numbers of support aircraft to allow for longer-range operations and greater survivability;**

- **Increase efforts to develop long-range and high-endurance unmanned aerial vehicles, not merely for reconnaissance but for strike and even air-combat missions;**

- **Pursue the development of large-bodied stealthy aircraft for a variety of roles, including lift, refueling, and other support missions as well as strike missions.**

- **Target significant new investments toward creating capabilities for operating in space, including inexpensive launch vehicles, new satellites and transatmospheric vehicles, in preparation for a decision as to whether space warfare is sufficiently different from combat within earth's atmosphere so as to require a separate "space service."**

Such a transformation would in fact better realize the Air Force's stated goal of becoming a service with true global reach and global strike capabilities. At the moment, today's Air Force gives a glimpse of such capabilities, and does a remarkable job of employing essentially tactical systems in a world-wide fashion. And, for the period of transition mandated by these legacy systems and by the limitations inherent in the F-22, the Air Force will remain primarily capable of sophisticated theater-strike warfare. Yet to truly transform itself for the coming century, the Air Force must accelerate its efforts to create the new systems – and, to repeat, the space-based systems – that are necessary to shift the scope of air operations from the theater level to the global level. While mounting large-scale and sustained air campaigns will continue to rely heavily upon in-theater assets, a greater balance must be placed on long-range systems.

The Navy Returns 'To the Sea'

Since the end of the Cold War, the Navy has made a dramatic break with past doctrine, which emphasized the need to establish control of the sea. But with American control of the "international commons" without serious challenge – for the moment – the Navy now preaches the gospel of power projection ashore and operations in littoral waters. In a series of posture statements and white papers beginning with "…From the Sea" in 1992 and leading to 1998's "Forward…from the Sea: Anytime, Anywhere," the Navy, in cooperation with the Marine Corps, embraced this view of close-in operations; to quote the original "From the Sea:"

> *Our ability to command the seas in areas where we anticipate future operations allows us to resize our Naval Forces and to concentrate more on capabilities required in the complex operating environment of the "littoral" or coastlines of the earth.…This strategic direction, derived from the National Security Strategy, represents a fundamental shift away from open-ocean warfighting on the sea—toward joint operations conducted from the sea.*

The "From the Sea" series also has made the case for American military presence around the world and equated this forward presence specifically with naval presence. Following the lead of the

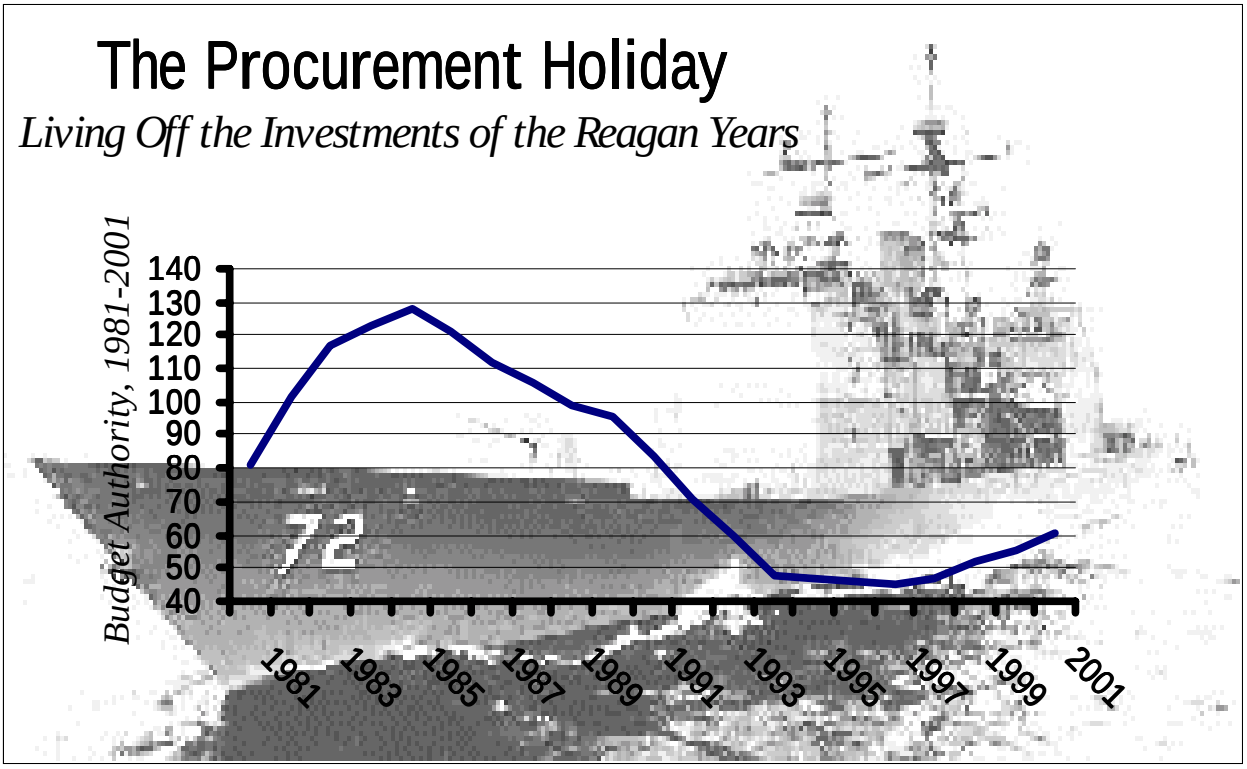
the Clinton Administration's defense plans continue to place a higher priority on immediate needs than on preparing for a more challenging technological or geo-political future; as indicated in the force posture section above, the QDR retains the two-war standard as the central feature of defense planning and the *sine qua non* of America's claim to be a global superpower. The National Defense Panel, with its call for a "transformation strategy," argued that the "priority must go to the future." The two-war standard, in the panel's assessment, "has become a means of justifying current forces. This approach focuses resources on a low-probability scenario, which consumes funds that could be used to reduce risk to our long-term security."

Again, the CSIS study's affordability assessments suggest the trade-offs between manpower and force structure that must be made under current budget constraints. For example, CSIS estimates that the cost of modernizing the current 1.37 million-man force would require procurement spending of $164 billion per year. While we might not agree with every aspect of the methodology underlying this calculation, the larger point is clear: if defense spending remains at current levels, as current plans under the QDR assume, the Pentagon would only be able to modernize a little more than half the force. Under this scenario, U.S. armed forces would become increasingly obsolescent, expensive to operate and outclassed on the battlefield. As the report concludes, "U.S. military forces will lose their credibility both at home and abroad regarding their size, age, and technological capabilities for carrying out the national military strategy." Conversely, adopting the National Defense Panel approach of accepting greater risk today while preparing for the future would require significant further cuts in the size of U.S. armed forces. According to CSIS, a shift in resources that would up the rate of modernized equipment to 76 percent – not a figure specified by the NDP but one not inconsistent with that general approach – would require reducing the total strength of U.S. forces to just 1 million, again assuming 3 percent of GDP were devoted to defense spending. Thus, at current spending levels the Pentagon must choose between force structure and modernization.

If defense spending remains at current levels, U.S. forces will soon be too old or too small.

When it is recalled that a projection of defense spending levels at 3 percent of GDP represents the most optimistic assumption about current Pentagon plans, the horns of this dilemma appear sharper still: at these levels, U.S. forces soon will be too old or too small. Following the administration's "live for today" path will ensure that, in some future high-intensity war, U.S. forces will lack the cutting-edge technologies that they have come to rely on. Following the NDP's "prepare for tomorrow" path, U.S. forces will lack the manpower needed to conduct their current missions. From constabulary duties to the conduct of major theater wars, the ability to defend current U.S. security interests will be placed at growing risk.

In a larger sense, these two approaches differ merely about the nature and timing of a strategy of American retreat. By committing forces to the Balkans, maintaining U.S. presence in the Persian Gulf, and by responding to Chinese threats to Taiwan and sending peacekeepers to East Timor, the Clinton Administration has, haltingly, incrementally and often fecklessly, taken some of the necessary steps for strengthening the new American security perimeter. But by holding defense spending and military strength to their current levels, the administration has compromised the nation's ability to fight large-scale wars today and consumed the investments that ought to have been made to preserve American military preeminence tomorrow. The reckoning for



such a strategy will come when U.S. forces are unable to meet the demands placed upon them. This may happen when they take on one mission too many – if, say, NATO's role in the Balkans expands, or U.S troops enforce a demilitarized zone on the Golan Heights – and a major theater war breaks out. Or, it may happen when two major theater wars occur nearly simultaneously. Or it may happen when a new great power – a rising China – seeks to challenge American interests and allies in an important region.

By contrast, a strategy that sacrifices force structure and current readiness for future transformation will leave American armed forces unable to meet today's missions and commitments. Since today's peace is the unique product of American preeminence, a failure to preserve that preeminence allows others an opportunity to shape the world in ways antithetical to American interests and principles. The price of American preeminence is that, just as it was actively obtained, it must be actively maintained. But as service chiefs and other senior military leaders readily admit, today's forces are barely adequate to maintain the rotation of units to the myriad peacekeeping and other constabulary duties they face while keeping adequate forces for a single major theater war in reserve.

An active-duty force reduced by another 300,000 to 400,000 – almost another 30 percent cut from current levels and a total reduction of more than half from Cold-War levels – to free up funds for modernization and transformation would be clearly inadequate to the demands of today's missions and national military strategy. If the United States withdrew forces from the Balkans, for example, it is unlikely that the rest of NATO would be able to long pick up the slack; conversely, such a withdrawal would provoke a political crisis within NATO that would certainly result in the end of American leadership within NATO; it might well spell the end of the alliance itself. Likewise, terminating the no-fly-zones over Iraq would call America's

position as guarantor of security in the Persian Gulf into question; the reaction would be the same in East Asia following a withdrawal of U.S. forces or a lowering of American military presence. The consequences sketched by the Quadrennial Defense Review regarding a retreat from a two-war capability would inexorably come to pass: allies and adversaries alike would begin to hedge against American retreat and discount American security guarantees. At current budget levels, a modernization or transformation strategy is in danger of becoming a "no-war" strategy. While the American peace might not come to a catastrophic end, it would quickly begin to unravel; the result would be much the same in time.

The Price of American Preeminence

As admitted above, calculating the exact price of armed forces capable of maintaining American military preeminence today and extending it into the future requires more detailed analysis than this broad study can provide. We have advocated a force posture and service structure that diverges significantly both from current plans and alternatives advanced in other studies. We believe it is necessary to increase slightly the personnel strength of U.S. forces – many of the missions associated with patrolling the expanding American security perimeter are manpower-intensive, and planning for major theater wars must include the ability for politically decisive campaigns including extended post-combat stability operations. Also, this expanding perimeter argues strongly for new overseas bases and forward operating locations to facilitate American political and military operations around the world.

At the same time, we have argued that established constabulary missions can be made less burdensome on soldiers, sailors, airmen and Marines and less burdensome on overall U.S. force structure by a more sensible forward-basing posture; long-term security commitments should not be supported by the debilitating, short-term rotation of units except as a last resort. In Europe, the Persian Gulf and East Asia, enduring U.S. security interests argue forcefully for an enduring American military presence. Pentagon policy-makers must adjust their plans to accommodate these realities and to reduce the wear and tear on service personnel. We have also argued that the services can begin now to create new, more flexible units and military organizations that may, over time, prove to be smaller than current organizations, even for peacekeeping and constabulary operations.

Even as American military forces patrol an expanding security perimeter, we believe it essential to retain sufficient forces based in the continental United States capable of rapid reinforcement and, if needed, applying massive combat power to stabilize a region in crisis or to bring a war to a successful conclusion. There should be a strong strategic synergy between U.S. forces overseas and in a reinforcing posture: units operating abroad are an indication of American geopolitical interests and leadership, provide significant military power to shape events and, in wartime, create the conditions for victory when reinforced. Conversely, maintaining the ability to deliver an unquestioned "knockout punch" through the rapid introduction of stateside units will increase the shaping power of forces operating overseas and the vitality of our alliances. In sum, we see an enduring need for large-scale American forces.

But while arguing for improvements in today's armed services and force posture, we are unwilling to sacrifice the ability to maintain preeminence in the longer term. If the United States is to maintain its preeminence – and the military revolution now underway is already an American-led revolution – the Pentagon must begin in earnest to transform U.S. military forces.

We have argued that this transformation mission is yet another new mission, as compelling as the need to maintain European stability in the Balkans, prepare for large, theater wars or any other of today's missions. This is an effort that involves more than new weaponry or technologies. It requires experimental units free to invent new concepts of operation, new doctrines, new tactics. It will require years, even decades, to fully grasp and implement such changes, and will surely involve mistakes and inefficiencies. Yet the maintenance of the American peace requires that American forces be preeminent when they are called upon to face very different adversaries in the future.

Finally, we have argued that we must restore the foundation of American security and the basis for U.S. military operations abroad by improving our homeland defenses. The current American peace will be short-lived if the United States becomes vulnerable to rogue powers with small, inexpensive arsenals of ballistic missiles and nuclear warheads or other weapons of mass destruction. We cannot allow North Korea, Iran, Iraq or similar states to undermine American leadership, intimidate American allies or threaten the American homeland itself. The blessings of the American peace, purchased at fearful cost and a century of effort, should not be so trivially squandered.

The program we advocate – one that would provide America with forces to meet the strategic demands of the world's sole superpower – requires budget levels to be increased to 3.5 to 3.8 percent of the GDP.

Taken all in all, the force posture and service structure we advocate differ enough from current plans that estimating its costs precisely based upon known budget plans is unsound. Likewise, generating independent cost analyses is beyond the scope of this report and would be based upon great political and technological uncertainties – any detailed assumptions about the cost of new overseas bases or revolutionary weaponry are bound to be highly speculative absent rigorous net assessments and program analysis. Nevertheless, we believe that, over time, the program we advocate would require budgets roughly equal to those necessary to fully fund the QDR force – a minimum level of 3.5 to 3.8 percent of gross domestic product. A sensible plan would add $15 billion to $20 billion to total defense spending annually through the Future Years Defense Program; this would result in a defense "topline" increase of $75 billion to $100 billion over that period, a small percentage of the $700 billion on-budget surplus now projected for that same period. We believe that the new president should commit his administration to a plan to achieve that level of spending within four years.

In its simplest terms, our intent is to provide forces sufficient to meet today's missions as effectively and efficiently as possible, while readying U.S. armed forces for the likely new missions of the future. Thus, the defense program described above would preserve current force structure while improving its readiness, better posturing it for its current missions, and making selected investments in modernization. At the same time, we would shift the weight of defense recapitalization efforts to transforming U.S. forces for the decades to come. At four cents on the dollar of America's national wealth, this is an affordable program.

It is also a wise program. Only such a force posture, service structure and level of defense spending will provide America and its leaders with a variety of forces to meet the strategic demands of the world's sole superpower. Keeping the American peace requires the U.S. military to undertake a broad array of missions today and rise to

very different challenges tomorrow, but there can be no retreat from these missions without compromising American leadership and the benevolent order it secures. This is the choice we face. It is not a choice between preeminence today and preeminence tomorrow. Global leadership is not something exercised at our leisure, when the mood strikes us or when our core national security interests are directly threatened; then it is already too late. Rather, it is a choice whether or not to maintain American military preeminence, to secure American geopolitical leadership, and to preserve the American peace.

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