# To Rebuild America's Military

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THE MARILYN WARE CENTER
FOR SECURITY STUDIES

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AMERICAN ENTERPRISE INSTITUTE

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# Executive Summary

Since the end of the Cold War, America's presidents—George H. W. Bush, Bill Clinton, George W. Bush, and Barack Obama—have employed the US military repeatedly. However, none of them thought it necessary to make serious or substantial long-term investments in the US armed forces. The next president must begin to rebuild America's military.

The current force is too small; its equipment—largely the legacy of the Reagan-era build-up—is too old; and it is not trained or ready for a large or long fight. The military services are in danger of losing their best, brightest, and most battle-tested people: the "all-volunteer force" marks a moral compact between the American public and the small number of Americans who risk their lives to keep the rest of us safe. That compact requires us not only to care for the wounded, the widows, and the retired but also to provide those who would go in harm's way with the means for victory. When we fail to do so, it breaks faith with those in uniform.

This failure also endangers America. Even in the current hothouse media environment, it is impossible to miss what the decline of US military power means for the world, in Europe, in East Asia, and most especially across the greater Middle East. Things are falling apart as the American center cannot hold.

This report shows a way forward. Grounded in a traditional understanding of our national security goals and strategy, the path is clear. Defense planning for the next administration must:

- **Adopt a "three-theater" force construct.** To remain a global power, the United States must preserve a favorable balance of military power in Europe, the Middle East, and East Asia. Deterring further Russian and Chinese aggression requires forces that are powerful and constantly present, and securing our interests in the Middle East requires not just presence but also an effort to reverse the rising tide of our many adversaries: Iran, ISIS, and al Qaeda and its associates. America cannot lead the world by "pivoting" among these theaters nor by retreating to the continental United States.

- **Increase its military capacity.** Since the end of the Cold War, US forces have been unrelentingly deployed. After 9/11, they were not sufficient to successfully conduct campaigns simultaneously in Iraq and Afghanistan, despite a massive mobilization of reserve component troops, an increase, though tardy, in active-duty numbers, and innovative employment of Navy and Air Force leaders in ground missions. Neither the rapid introduction of new equipment such as the massive mine-resistant vehicles nor the renaissance in counterinsurgency operations could make up for the lack of forces. The United States needs a force sufficient for a three-theater posture.

- **Introduce new capabilities urgently.** Programs to transform the military or to offset the new weaponry now fielded by adversaries have been a disaster; the failure to modernize across the force since the 1980s now leaves the US military without the great technological advantages that allowed it to "shock and awe" its enemies and conduct decisive operations with very few casualties. The Pentagon must be allowed to buy what it can quickly and economically and begin to build what it needs within the next decade.

- **Increase and sustain defense budgets.** The defense spending cuts of the early Obama years and the further reductions mandated by the Budget Control Act have merely accelerated a pattern of defense divestment that began a generation ago. The damage is too great to repair within the course of a single administration. A "two-target" investment strategy is required: first, return military budgets to the level set by former Defense Secretary Robert Gates in his original 2012 budget, and second, gradually build up to an affordable floor of 4 percent of gross domestic product that would sustain the kind of military America needs.

Sound defense planning demands a long-term perspective, resting not on what changes—threats and technologies—but on what remains constant—American security interests and political principles. Since 1945, the one constant of international politics has been the military power of the United States. Our next commander-in-chief must rebuild America's military power.

# 1

# Introduction

The United States must rebuild its military forces. In the generation since the fall of the Berlin Wall, America has demanded that those in uniform "do more with less." The government has spent an ever-shrinking slice of our national wealth on military power: the defense budget represented 4.5 percent of gross domestic product (GDP) in 1991, is now under 3 percent, and, thanks to the limits set in the 2011 Budget Control Act (BCA), is set to shrink to 2.6 percent in 2019. There are fewer men and woman on active-duty service, too—about 1.4 million versus 2 million in 1991—but they have been fighting ceaselessly since the attacks of September 11, 2001, and were busy in Iraq and the Middle East, in Africa, in the Balkans, and elsewhere even before that. And they are still using much of the basic weaponry—the F-15s, F-16s, and F-18s; destroyers, submarines, and carriers; tanks, howitzers, and helicopters—purchased during the Reagan buildup of the 1980s. Today's force has been battle tested, but it is also battle tired.

To be sure, America's military power has been declining ever since the first wave of cuts in the aftermath of the Cold War. Since then, and while the operational tempo of the military—its rate of deployment—has increased geometrically, the size of the armed forces has been going down, and modernization has been shortchanged.

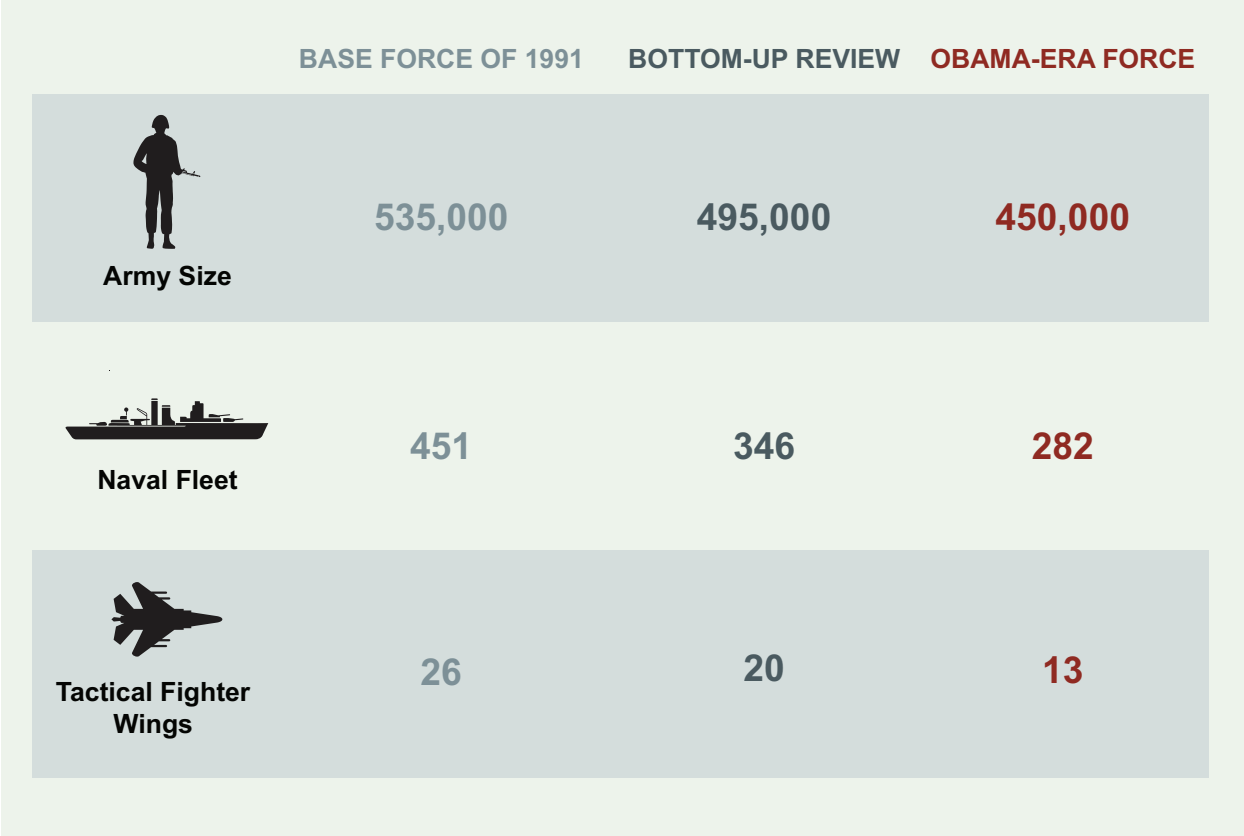
But five years ago, the gradual bleed in military strength became a hemorrhage when the president and Congress joined to cut a trillion dollars from the 10-year budget of the armed forces (figure 1).

Now, and not coincidentally, the post–Cold War peace is coming apart at the seams. Since 1991, the People's Republic of China has become a great power. In that year, the World Bank estimated its GDP at about $380 billion; today the estimate is more than $9.2 trillion—nearly 25 times larger, empowering China to engage in a two-decade-long military modernization that allows it to challenge the United States and its allies. The Soviet Union is no more, but Vladimir Putin's Russia has invaded two states wishing to become part of the West, has grown increasingly autocratic at home, and is driven by a sullen and resentful nationalism in place of communism. North Korea already has nuclear weapons and is more unstable than at any time since the Korean War. Iran has won the world's acquiescence in its nuclear program and is bent, with the Obama administration's blessing, on expanding its influence throughout the Middle East and even abroad. And the postcolonial order across the Muslim world has collapsed, giving way not to a further wave of democratization but to a tide of feudal fanaticism. At his 1993 confirmation as director of the Central Intelligence Agency, James Woolsey observed that "we have slain a large [Soviet] dragon, but we live now in a jungle with a bewildering variety of poisonous snakes."[1] With time, the vipers have multiplied and metastasized.

In short, the United States is more vulnerable now, in its homeland and its vital national interests, to a greater range of growing dangers. And just as the threats have become visible and undeniable, the United States is continuing to cut the armed forces dramatically, having imposed the cuts through an extraordinary means—a law imposing arbitrary limits on parts of the federal budget and employing the mindless tool of sequestration—with no analysis whatsoever of the impact on the nation's security.

Why would a government do this? Why would any cohort of leaders—and this has occurred under the stewardship of a Democratic president and a Democratic Senate, with the support of a Republican House of Representatives—take actions so foreign to its normal processes and so clearly detrimental to the vital interests of the country they govern?

**Figure 1. The Slow Retreat: Shrinking Post–Cold War Force**




Source: Lorna S. Jaffe, *The Development of the Base Force 1989–1992* (Office of the Chairman of the Joint Chiefs of Staff: Washington, DC, July 1993); Les Aspin, *Report on the Bottom-Up Review* (Office of the Secretary of Defense: Washington DC, October 1993); and calculated from the Office of the Undersecretary of Defense (Comptroller) and the Department of the Navy's *FY16 Budget Overview*.

The reason, at bottom, is a lack of strategic clarity. In a democracy, if either the leaders or the people do not have a reasonably clear understanding of why military strength is important—of what their nation is protecting and why it really matters to them—then, in time, they begin to think that defense is *not* important. At that point, the military budget becomes just another demand on the government budget, another mouth that has to be fed, and defense will usually lose in any such competition.

No one powerful special interest cares about the total amount spent each year on the military. To be sure, various interests lobby for particular programs in the budget that are meaningful to them. But they concentrate their efforts on preserving what they care about within whatever top line the political authorities otherwise provide.

Without clarity about why the armed forces really matter, the natural competition for funding tends to force down total spending on defense while preserving—at least for a season or two—those programs that have the most political backing.

And that is exactly what is happening now.

The report that follows explains what must be done. The point of departure is a clear and concise enumeration of America's traditional national security goals—that is, the ways in which the United States has, at least since the end of World War II and under presidents of both parties, measured its success and preserved its safety. Conditions change; enemies and adversaries rise and fall, and military technologies evolve. But the purposes of our military power—which reflect both enduring geopolitical realities and our most vital national interests and operating principles—remain remarkably constant.

After examining the purposes of our power, the report next articulates a strategy that maximizes our ability to secure our interests. As will be apparent, this military strategy will be premised on a reassertion of energetic American statecraft, a design for traditional geopolitical leadership, not "leading from behind." It also is intended to be truly global in scope, an understanding that US security interests are best and most efficiently served when approached in a systematic fashion. As the Obama years have demonstrated, when a global power attempts a regional "rebalancing," what results is a loss of balance around the world.

The bulk of the work is devoted to limning the military means needed to support a strategy that can successfully achieve the United States' enduring security goals. That effort begins with a general construct for planning what will necessarily be an extended process of rebuilding, forecasting not only what will be needed over the span of decades but also what must—and what can—be done immediately. Subsequent chapters will quantify the capacities and capabilities such a force would need, and the report will conclude with an analysis of the required levels of defense spending and a program of reforms that would accelerate and rationalize the rebuilding process.

Although no such report can be anything more than a general blueprint, the failure to produce such a blueprint over the past three decades accounts for most of the problems that now plague America's military. Those problems are painfully clear. The force is too small. Its weapons are too old. Perhaps most appallingly, its people are increasingly dispirited; we have paid them well without truly understanding their purpose and sustaining them in their missions. We have an obligation to them and ourselves to confront our mistakes and move decisively to restore our power.

# 2

# America's National Security Goals

What are the purposes of US military power? The inability to articulate a straightforward answer to this essential question has confounded the Defense Department since the end of the Cold War. Failing to define clear benchmarks for geopolitical success, the various formal military strategies adopted by administrations of both parties have not provided a consistent basis for defense planning, and thus the United States has suffered from repeated strategic surprises: China's challenge to the peace of the western Pacific; Russia's *revanche* in Europe; and, most of all, the breakdown of order in the Middle East. Rather than actively shaping the post–Cold War period to fashion a broader and deeper peace, America has, with the exception of NATO expansion, largely reacted to a series of external events and shocks.

The consequences of this failure are now apparent not only in the state of the US military but also in the state of the world. Director of National Intelligence James Clapper summarized the situation well when he told Congress in early 2014 that he had "not experienced a time when we have been beset by more crises and threats around the globe."[2] Today's threats may seem less direct than that posed by the Soviet Union, but, as the post–Cold War era has revealed, they are no less violent. Furthermore, whether driven by resentful nationalism, apocalyptic expressions of religious faith, or autocratic strongmen, current adversaries are every bit as anti-American as was Soviet Russia.

Like all nations, the United States has vital national interests that endure across administrations. These reflect our most deeply held political principles and are manifest in the way we act in international affairs and in the use of military power. As the nonpartisan 2010 Quadrennial Defense Review (QDR) Independent Panel observed: "What presidents actually do with America's military, on a bipartisan basis and over time, indicates what they believe must be done to protect America. It is, therefore, possible to discern the strategic thinking that has guided our country from the strategic practices it has followed."[3] The successor 2014 QDR panel[4] distilled this insight into four vital national interests that US military power must protect:

- **Defense of the American Homeland.** The spectacular attacks of September 11, 2001, and the stream of smaller-scale attacks since, such as the 2013 bombing of the Boston Marathon, touched on a long-standing American sense of vulnerability. Despite the supposed "isolation" provided by two oceans, ensuring the safety of the American "homeland"—that is, not just the United States itself but the North American continent and the Caribbean Basin—has been the highest purpose for the US military. In an age of asymmetric weapons and tactics, it is an increasingly difficult purpose to fulfill.

- **Assured Access to the Sea, Air, Space, and Cyberspace.** These "domains" are frequently described as the "international commons," but there is nothing inherently open or free about them or the commerce that flows across them. The United States is a trading and traveling nation; its ability to move through the world, whether for commercial or other purposes, is central to its national identity and way of life. Moreover, in times of conflict, we must also be able to achieve a level of supremacy in these domains for projecting power throughout the world and to restore order. The importance of this interest cannot be overstated. Every time that access has been consistently denied, going back to the days of the Barbary pirates and the

War of 1812, the United States has been pulled toward armed conflict.

- **Preserve a Favorable Balance of Power across Eurasia.** The United States has an abiding interest in preventing chaos in this key region of the world or domination of this region by an aggressive power. One of the lessons of the 20th century is that when this order is challenged or overturned, America's interests are threatened, and the United States is inevitably compelled to engage. We are seeing that now in Europe, the Middle East, and the Far East. To be a global power, the United States cannot simply be an offshore balancer. History shows that when we do not take up a continental commitment, the cost of restoring the peace rises dramatically.

- **Preservation of International Order.** After World War II, the United States first created and promoted and then sustained a global system—not only of security but also of economics, liberal politics, and human decency—to constrain international relations within norms that broadly reflect American principles. This system has been the framework not only for our safety but also for the greater observance of basic human rights. This postwar trend has become deeply entrenched and is of enormous benefit to the United States: it has promoted our interests, our prosperity, and our political principles. To be sure, the system is imperfect—it is a human design—and incomplete, with too much of humanity still excluded from its extraordinary benefits. Thus, preserving this order and building it for the future is both an end of our strategy and a tool of our statecraft. This is the world America has made; the power we wield in striving to sustain a just international order legitimates our leadership—itself a vital security interest of the United States.

These four goals of our security strategy are as relevant today as they were in the Cold War years. They can provide the right measures for refashioning US military strategy and rebuilding US armed forces for the 21st century, and this report will take them as the points of departure and the definition of victory.

# 3

# US Military Strategy

The United States never has been an "isolationist" power. Though we live at an oceanic remove from Eurasia's wars, we have always understood that the balance of power there—whether the threat came from Habsburg Spain, Bourbon or Napoleonic France, Wilhemine or Hitlerite Germany, Russia's czars or Soviet premiers, or Japanese emperors—framed our security here.

America has not always been strong. The Founders understood only too well how their experiment in self-government hung precariously between France and Britain. When the British government threatened to intervene in the American Civil War, Secretary of State William Seward believed it would consolidate support among Northerners, but President Abraham Lincoln insisted he would fight only "one war at a time."

Nonetheless, Americans have always had intimations of greatness. "Soon after the Reformation," wrote John Adams in 1755, "a few people came over into this new world, for conscience sake. Perhaps this apparently trivial incident may transfer the great seat of empire to America. It looks likely to me."[5] It appeared likely to George Washington as well. Although in his farewell to public life in 1796 he warned of making permanent alliances with either Britain or France, he foresaw that "the period is not far off where we may defy material injury from external annoyance"—defy it, not avoid it—and "we may choose peace or war, as our interest, guided by justice, shall counsel."[6]

Thus, the Founders' generation would not have been surprised by America's rise to great-power status—and perhaps not even surprised by its eventual rise to global preeminence. Nor would they, as pragmatic men, have been surprised that the country's security strategy and approach to the wider world would evolve as America's global sway grew, allowing it to promote an international order that was attuned not only to our interests but also to our principles. As such, from the presidency of Harry Truman to that of George W. Bush, the United States pursued a remarkably consistent approach to the world. Step by step, Truman and his successors created a global strategy and architecture to implement it, with four basic operating principles:

1. The United States would move to the forefront of events and become the consistent leader of the democratic world, with the object of preventing both aggression and war or at least another great-power war.

2. The United States would anticipate risks to its vital national interests and attempt to defeat, defuse, or contain the risks at as low a level of conflict as possible.

3. The United States would actively recruit allies and partners around the world who had the same or similar objectives as America; with US leadership, these alliances would not be dangerously "entangling," but rather tools to serve a common purpose.

4. The United States would maintain much more robust standing military, diplomatic, and economic "tools of power" than it ever had before, including both hard and soft power. In this era immediately following World War II, the United States began to build an intelligence community, develop the mechanism of economic sanctions, use foreign aid and development assistance to stabilize important countries, negotiate the nonproliferation and other international regimes, and actively promote its founding principles as a way of rallying support and putting aggressors on the defensive.

As architects not only of the victories of World War II but also of the postwar reconstruction of Europe and Japan, America's leaders appreciated both the necessity for and limits of military power. They understood America's armed forces—which they undertook to rebuild with urgency after 1950—as a part of an integrated national security architecture intended to give the United States the capability to avoid the mistakes of the 1930s: they preferred to deter war, especially among the world's great powers, rather than wage war.

The dangers to the United States mount today because America's leaders have begun to ignore these operating principles, the guides to our past safety and success. The Obama administration has in particular devalued the importance of American leadership, neglected traditional allies without recruiting new ones, and suffered from strategic surprises (especially in Eastern Europe and the Middle East) rather than anticipating them. They have fetishized diplomacy and "soft power" while abjuring the use of military power and set in motion a series of defense budget reductions that have caused serious harm to a US military that was already in dire straits.

The irony of President Obama's foreign policy is that virtually every one of his failed or failing initiatives—the reset with Russia, the olive leaf he has tried to extend to the Muslim world, the rebalance to Asia, the outreach to Iran, the red line in Syria, his withdrawal from Iraq and his less-than-aggressive approach to ISIS, and his determination now to withdraw from Afghanistan whether the Afghan government can defend itself or not—would have had a much greater chance of success had he, at the same time, been engineering a buildup rather than a decline of America's armed forces. The president's policies have sought peace, partnership, and amity among diverse nations and cultures. But against the backdrop of waning American military strength, adversaries and allies alike see his yearning for peace as a sign of weakness. Today, fewer and fewer nations care about our promises or believe our threats.

The road to the restoration of peace with security will be a long one. The first step must be the restoration of American power, beginning with the tools of hard power. It is to that subject that we now turn. How can the United States achieve its traditional security goals in the current and foreseeable international environment?

To be successful, an enduring American military strategy must not simply take account of external threats; these can, and do, shift with time. Indeed, every president since the end of the Cold War has sent American troops into harm's way in a conflict that he and the nation did not anticipate.

*We must seek a balance of power that favors not just simply America but also our notions of liberty and justice.*

Rather, US strategy makers must satisfy three geopolitical imperatives derived from the security goals described in the preceding chapter. First, American military strategists must have a global view, taking account of the full range of security interests. Second, their efforts must reflect the United States' role as the architect and, with allies, guarantor of the international order; America must strive to be consistent, predictable, and reliable in using its military power. Last, our strategy must be true to our fundamental political principles; we must seek a balance of power that favors not just simply America but also our notions of liberty and justice.

The problems of American strategy often result from failing to follow these imperatives. Sometimes we constrict our strategic view, as the Obama administration has done with its "Pacific Pivot," which has proved to be less a renewed focus on East Asia than a loss of focus on Europe and the Middle East. At other times, we try to limit our military engagement to the kinds of conflicts we prefer to fight, such as when we are faced with the prospect of an extended counterinsurgency campaign. And sometimes we overlook the role of principle in our statecraft, convincing ourselves that we can have more than short-term, transactional partnerships with inherently unstable or illegitimate autocrats. These kinds of self-inflicted wounds are the most debilitating.

Yet these particular failures should not obscure what has been a remarkable consistency in American strategy

making, a consistency that has been the basis for an equally remarkable record of strategic success. It cannot be said too frequently: the world we have made in the aftermath of World War II is, by historical standards, extraordinarily peaceful, prosperous, and free. Throughout the long Cold War, the United States relied on a combination of great-power deterrence and a willingness to challenge lesser aggressors where they impinged on stability in key regions and to support, when and where feasible, the enlargement of the globe's democratic community. Only in the Obama years has US strategy begun to deviate from this traditional path. We have not just lost our appetite for supporting young democracies but also hesitated, as great-power challenges have risen in Europe and East Asia, to buttress deterrence.

America must go back to the future. Great-power deterrence is the first order of business. We would prefer to deter adversaries rather than to fight them; for Americans, the best war is one that never happens. If we can continue to deter rivals from upending the existing peace of Europe and East Asia—the pillars on which the global order is built—the Eurasian balance of power will be generally favorable.

The challenge for any deterrent strategy is that it is a subjective measure; its value can be understood only in terms of the state of mind it creates in an adversary. He must be persuaded that the estimated costs of military action or coercion substantially outweigh the perceived benefits. In *Power and Diplomacy*, Dean Acheson summarized this logic: "We mean that the only deterrent to the imposition of Russian will in Western Europe is the belief that from the outset of any such attempt American power would be employed in stopping it, and if necessary, would inflict on the Soviet Union injury which the Moscow regime would not wish to suffer."[7]

What was true in the late 1940s and early 1950s vis-à-vis the Soviet Union equally applies today in the case of Vladimir Putin's Russia or the People's Republic of China. Broadly speaking, the balance of power in Europe and in East Asia is extremely favorable to the United States, measured not just in geopolitical terms but also by the spread of political liberty and economic prosperity across these regions. Therefore, a strategy based on deterrence is appropriate and likely to be effective in Europe and East Asia. The prospects for deterring North Korea are less certain, to be sure, but deterrence has, since 1953, at least limited Pyongyang to smaller-scale raids rather than large-scale invasion.

But as will be discussed more thoroughly in the following chapter of this report, much of the credibility of a deterrent strategy depends on the adversary's calculus of suffering an amount of certain injury that outweighs his calculus of benefit. That is, the United States must possess the capabilities and capacities that convince Russia, China, North Korea, or others that aggression would result in the kind of injury they would not wish to suffer. Deterrence must be credible as well as terrible; for example, relying too heavily on a small number of very large nuclear weapons—as the Eisenhower "New Look" strategy of the 1950s did—or conventional forces based in the continental United States—as US "defense in depth" strategy for NATO sometimes did—is likely to result in a form of deterrence around which adversaries may well believe they can maneuver.

Traditional great-power deterrence of China is the most daunting strategic task for US military forces. Although China's geopolitical rise is built on an unstable domestic political base, the danger remains that Beijing will be able to expand and sustain its military capability for decades to come, posing a long-term threat to the East Asian, and perhaps global, balance of power.

Although Russia poses a lesser danger in the longer term, the near-term threat is acute not only because Moscow's aggression has been overt but also because it represents the reckless behavior of a rogue regime backed by a massive nuclear arsenal. And, it is critical to note, Russia threatens to undermine the peace of Europe that, through history, has been the primary US strategic interest other than defending the homeland. Unchecked Russian aggression also exacts a "reputational" price paid in loss of credibility in the international system. In sum, although deterring Russia should be a lesser long-term task than deterring China, it requires immediate attention.

Alas, a strategy of deterrence will fail to secure American interests in the greater Middle East, including in regard to Iran. Indeed, the United States already has failed to deter Tehran from making an energetic bid

for regional hegemony. The majority-Sunni states, the traditional Arab powers from North Africa to the Persian Gulf, are in varying conditions of disarray. In other words, there no longer is a "status quo" order to defend—if indeed there ever was one—and many of those seeking to assert their power across the region are inspired by religious fervor rather than reasons of state. President Obama's regional retreat has undone the work of previous generations; the Iraq "surge" measured a high-water mark of US power and prestige that will be difficult, expensive, and painful to recover. A deal with Iran—with whatever constraint it might place on the Islamic Republic's nuclear program—that legitimizes Tehran's pretensions to regional hegemony will make the task of restabilizing the Middle East exponentially more difficult.

Restoring stability to the greater Middle East, let alone expanding prosperity or the prospects for political liberty, will require the United States to reengage in what is becoming a large, and accelerating, regionwide struggle for power with a vicious and sectarian character, a competition between an overreaching Iran and its proxies in Damascus and Lebanon and a crippled coalition of Saudi-financed Sunni autocrats who are on thin ice with their own peoples. This struggle, furthermore, is on the verge of developing a nuclear dimension. Although the consequences of the Middle East conflict are different from those of the great-power competitions with China and Russia, they are both a geopolitical and humanitarian disaster for the United States and its allies and a heavy blow to the international order and American credibility. President Obama's "let it burn" strategy is building a conflagration that cannot be contained.

The regional balance of power in 2009 was hardly self-sustaining or unambiguously favorable. Yet it is beyond doubt that the balance of power is now worse by every measure, that the past policy worked better than the current one is working, and that future strategy must be crafted to reverse the current course and begin to reverse the advances our adversaries have won. Our strategic interests in the Middle East will not secure themselves, nor can we count on the tender mercies of the Islamic Republic to advance them for us. The greater Middle East presents the United States with a host of unpleasant military tasks, but these tasks only grow and become more unpleasant the longer they are postponed.

*America must go back to the future. Great-power deterrence is the first order of business.*

American strategy for the greater Middle East must also avoid the mistake of separating the problem of terrorism from the larger problem of the regional balance of power. Ironically, after criticizing the Bush administration for overreacting to the attacks of 9/11, the Obama administration subordinated its Middle East strategy to counterterrorism, as evidenced by its "good enough" strategy in Afghanistan and Libya, its singular pursuit of al Qaeda's senior leadership, and, most recently, its approach to the conflict in Syria and Iraq and its concord with Iran. Defining our interests down to such a degree produced a false strategic clarity that the administration has not been able to shake; moreover, doing so has gone a long way toward shaping the US military around these mistaken concepts. Recent events make plain that terrorism cannot be suppressed unless a more favorable overall balance of power is restored and maintained.

Finally, a strategy of deterrence and the projection of military power abroad demands that the United States sustain a vigorous set of alliances, be they formal treaty alliances or long-standing but de facto partnerships. Beyond the goal of achieving a favorable balance of power across Eurasia, doing so lends much-needed depth to the defense of the American homeland: since 1916, the United States has preferred to play "away games" rather than home games. It is yet another irony of the Obama years that, rather than restoring trust in the United States and its use of military power, the administration has woefully neglected these partnerships.

For much of the post–Cold War period, NATO has seemed an alliance in search of a purpose. Many of our European allies have followed the United States "out of

area," most notably to Afghanistan, only to find America "leading from behind" when it comes to core European security questions not only in Ukraine but also in North Africa. The rhetoric of the Pacific Pivot initially encouraged our East Asian allies. But faced with the military realities—reduced US presence and increasing Chinese aggression—their doubts have grown. Moreover, as the administration's "pivot" has been exposed less as strength in the western Pacific than as weakness in Europe and the Middle East, which supplies a large slice of East Asian energy needs, the worry is less that such a "rebalancing" will not be seen through, but that it will.

Sustaining the increasingly fragile post–Cold War peace can only be achieved by returning to the strategic traditions that won that peace in the first place. Restoring a more favorable balance of power across Eurasia is not just an end in itself. It is key for the defense of the American homeland and enables the peaceful and commercial exploitation of the seas, skies, space, and cyberspace.

Absent a clear, coherent, and consistent strategy, we are in jeopardy of building military forces that lack not only the capacity to successfully carry out the missions assigned but also the range of capabilities they will need. Looking back over the post–Cold War period, we can see that long-range US defense planning has been a disaster resulting from multiple failures of strategic imagination or, perhaps more accurately, *too much* strategic imagination; we have been too prone to conclude that because the threat has changed, our interests have also changed. They have not. It is time to bring defense planning back in line with America's traditional military strategy.

# 4

# Force Planning

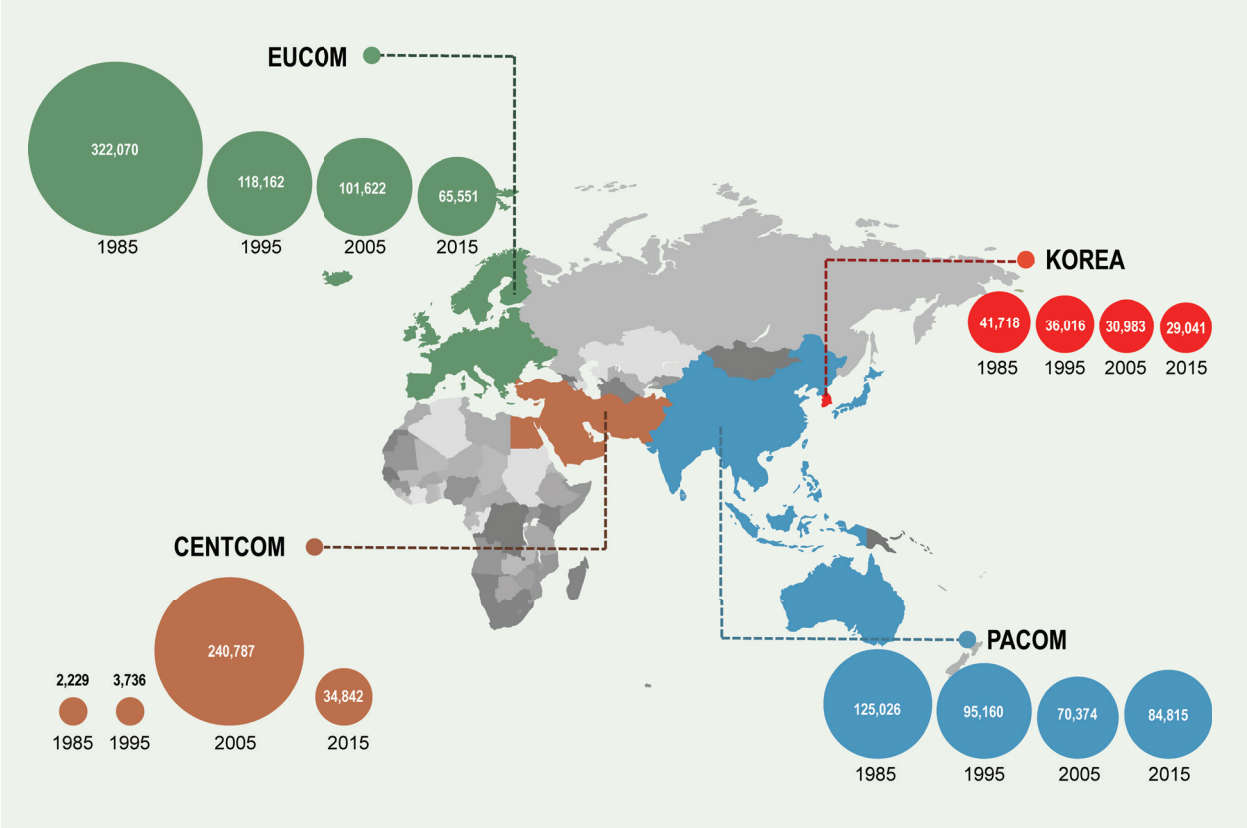
US military forces will have to be resized, restructured, and correctly repostured to give future presidents the means necessary to carry out the strategy outlined. To begin with, today's military is too small and is losing its traditional technological advantages. Second, the individual services have become in some respects too dependent on one another—losing service capabilities developed by and for a single service that for some contingencies result in the less efficient use of US forces. Finally, the Obama administration has overseen and accelerated the final stages of a global retrenchment, with the American military increasingly stationed in the continental United States.

The strategic assumptions that underpinned Obama administration force planning—that Europe would remain peaceful, that the United States was dangerously overcommitted across the Middle East, and that a "rebalance" to East Asia could be accomplished without a substantial increase in forces—have all proved false. Writing in the July/August 2012 issue of *Foreign Affairs*, former Undersecretary of Defense for Policy Michèle Flournoy and Deputy Assistant Secretary of Defense for Plans Janine Davidson summarized the administration review that led to the president's defense "guidance."[8] They concluded that "the security and stability of Europe no longer require the number of US ground forces currently stationed there" and went on to describe the withdrawal of two of the last four Army brigades—and the only armored formations—from the continent. This marked "a shift away from the Cold War orientation of US forces in Europe," but with the annexation of Crimea and invasion of eastern Ukraine, such a shift itself looks anachronistic. As General Philip Breedlove, the commander of all US forces in Europe, told Congress this past April, "The actions of Russia may require us to re-look our force posture in Europe and our requirements for future deployments . . . in the region."[9] His predecessor, Admiral James Stavridis, has recommended that "the entire drawdown [be] reevaluated" and that consideration be given to retaining a force of four combat brigades and the "restoration of the combat aircraft cuts of recent years."[10]

The Middle East has, of course, felt the greatest effect of the new Obama posture. In effect, the administration cashed in the successes of the late Bush years, most notably the achievements of the Iraq surge, to "end" the wars in Iraq and Afghanistan. In the wake of the "Arab Spring," Flournoy and Davidson characterized the "political changes sweeping" the "New Middle East" as requiring "military-to-military engagements with the region's rising democracies" rather than an extended effort against regional adversaries. "With the war in Iraq over and transition in Afghanistan under way," the United States would avoid "overstepping the bounds of host nations' tolerance for the presence of foreign forces," they wrote. Since then, it has been precisely the lack of a strong, sustained commitment of US military might to the region that has pushed the bounds of tolerance for America's traditional allies there.

The purpose of the pullout from Europe and the drawdown in the Middle East was to shift forces toward the Asia-Pacific region. Flournoy and Davidson described a Pacific "rebalancing" that was rhetorical rather than military. They reaffirmed American commitments to Japan and South Korea and promised that the United States would "build up its relations with other Asian nations, especially those in and around Southeast Asia." But the military means proposed—2,500 Marines rotating to northern Australia "for joint training and exercises, increasing visits by US aircraft to northern Australian airfields and conducting more calls by US ships to various Australian ports"—were underwhelming. In sum, this "pivot" has been all talk and no action. It is not simply that

**Figure 2. Unstable Posture: US Forces Overseas**




Source: US Department of Defense, Defense Manpower Data Center, https://www.dmdc.osd.mil/appj/dwp/dwp_reports.jsp.

few additional measures have been forwarded but that, thanks to reduced defense budgets, continued conflict in the Middle East, and Russia's *revanche*, the Pentagon cannot keep up its previous standards for America's Pacific presence. For example, the US Navy had no aircraft carrier—none, zero—on patrol in the region for 11 of the 30 months after the Flournoy-Davidson *Foreign Affairs* article was published. What General Breedlove said about Europe—that "'virtual presence' by US forces will be translated by both friends and enemies as 'actual absence'"—is also true in the Middle East and in the Pacific (figure 2).

In sum, "Obama's new global posture" falls well short of what traditional American strategy requires. Flournoy and Davidson claimed the administration had produced a "forward-looking force posture," but just three years later, the blind spots are manifest. The absence of US forces in Europe and the Middle East has created opportunities for aggression and further efforts at destabilization of the regions by adversaries, while the failure to fulfill the promise of the Pacific Pivot has encouraged the Chinese to constantly probe for weakness, particularly in the South China Sea. As the recently released report of the congressionally mandated, bipartisan National Defense Panel (NDP) concluded, the administration has been "widening the disconnect between America's strategic objectives and the realities of . . . available forces." Indeed, Flournoy, who was a member of the NDP, has come to reconsider her past views. In a joint piece with fellow panel member Eric Edelman in the *Washington Post*, Flournoy argued the need for "urgently addressing the size and shape of our armed forces so they can protect and advance our interests globally and provide the

war-fighting capabilities necessary to underwrite the credibility of the United States' leadership and national security strategy."[11]

Our proposed strategy sets a three-theater force-planning standard. This is a substantial refinement of the "two-war" or "two-major-contingency" metrics that have characterized post–Cold War defense reviews. These past force-planning constructs have fallen short in two cruial ways. To begin with, from George H. W. Bush's administration through the Obama terms, no administration has provided the necessary resources to fully support the force requirement. A second crippling failure is that the past standard has been homogenized and quantified without qualifying the requirements. We have been too slow to learn that not all contingencies are the same; some emphasize firepower and mobility, some reward presence and endurance. Overall, defense planners have overemphasized "war-fighting" needs at the expense of presence and patrolling requirements and been lashed to the mast of "jointness" in ways that lessen operational effectiveness and maximize cost; the use, for example, of carrier-based aviation to conduct combat air patrols to protect land forces in their long-running missions in Iraq and Afghanistan squanders an expensive and precious asset.

An improved force-planning construct must address three imperatives. The first is to have forward-based forces that provide the front lines of deterrence in Europe and East Asia and are sufficient for both decisively reversing the jihadist tide in the Middle East and frustrating Iran's hegemonic designs. As outlined already and as will be developed later in the paper, the unique demands of each theater must be taken into account, but in each case the demand is consistent and will be long term, thus providing a sound basis for force planning. The second imperative is to retain a large, varied, capable, and joint set of forces based in the United States that would be able to deliver up rapid and perhaps repeated heavy blows in case deterrence fails or if, in a crisis, the demands for direct action in the Middle East increase. The third imperative is to retain a sufficient "mobilization" base—not for a world war but to ensure the ability to sustain wars in extended theaters and to hedge against strategic surprise.

We urgently need an innovative approach to force planning. In the 21st century, the threats to American interests in Europe, the greater Middle East, and East Asia arise from local challengers, not a rival superpower as the Soviet Union was. Although China is increasingly exercising global influence, as yet it is incapable of projecting and sustaining large forces out of area. In other words, success will have to be won from the bottom up rather than the top down. Deterring China from upsetting the East Asian order will not have a decisive effect elsewhere. Likewise, the dangers of Putin's Russia or Iranian power and jihadi groups in the Middle East arise primarily from local political struggles. Even terror networks such as al Qaeda that have worldwide reach are, first and foremost, interested in changing the balance of power in the Middle East. To protect American global interests, the United States must maintain sufficient strength in each region.

Creating proper force sizing, shaping, and posture constructs require more detailed analysis, and much of the remainder of this report will be devoted to such analysis. The study must include a rethinking of US nuclear forces, which need to be reconfigured for a very different form of deterrence from that adopted during the Cold War; the nuclear deterrent equation has become increasingly "multipolar" and more complex than it was vis-à-vis the Soviet Union. This is particularly true in regard to the "extended" deterrence that US nuclear forces provide for our allies. The nuclear calculus must also include a heightened role for missile defenses. The demands for conventional forces, too, must be fundamentally reconsidered. Even while defining a three-theater standard, the requirements for the forces will vary by theater. Even where the strategic approach is similar—such as in creating a robust deterrent in Europe and in East Asia—and operational concepts are alike—such as substantial patrolling of contested front lines and maintaining the capacity and capability for decisive reinforcement—the kinds of forces needed will be quite different and specific to the unique circumstances.

This planning must begin now. As a global power with worldwide interests and the guarantor of the existing international order under which it has prospered, the United States must first fulfill the role of "system

maintenance," ensuring that the peace, prosperity, and liberty won in the past are not squandered. We have inherited a precious legacy from our predecessors and cannot postpone until tomorrow the obligations we have today.

## Deterrence in Europe and East Asia

Russia's attacks in Ukraine, annexation of Crimea, and provocations throughout Eastern Europe, including the 2008 war with Georgia, have shown the post–Cold War peace of Europe to be more fragile than thought. As the NDP argued, the Obama administration's "conclusion . . . that Europe is a net producer of security" is open to question. "If that is to remain the case," the panel wrote, "NATO must bolster the security of its own frontline states, especially in the Baltics and across southern Europe but also in Poland, lest they be subject to intimidation and subversion. America must lead the alliance in this regard."

Indeed, from the Baltic to the Black Sea, Eastern Europe—which includes NATO members—is becoming a new "no-man's land." Although Russia's oil-driven economy is vulnerable to sanctions and its conventional forces are a pale shadow of the old Red Army, Vladimir Putin has solidified his grip on power in Moscow and continually wrong-footed both the Obama administration and America's Western European allies (figure 3). The military cost of deterring Russia from snatching at further chunks of territory or simply intimidating frontline states is low, even by the reduced defense budget standards of today's Europe. A more eastward-based set of land and land-based forces is needed to provide deterrence through constant reconnaissance and security patrols, with an ability to shape any initial confrontation or encounter. These land-based forces should be supplemented by increased US and joint NATO naval patrols in the Baltic, Mediterranean, and Black Seas.

Today, fewer than 70,000 US troops—including just two Army brigades—are stationed in Europe, down from the late Cold War level of 350,000. Returning to the force levels of a few years ago—about 100,000 total—and permanently repositioning units to Eastern European NATO countries would be a very small investment but have a huge return with respect to a robust deterrent.

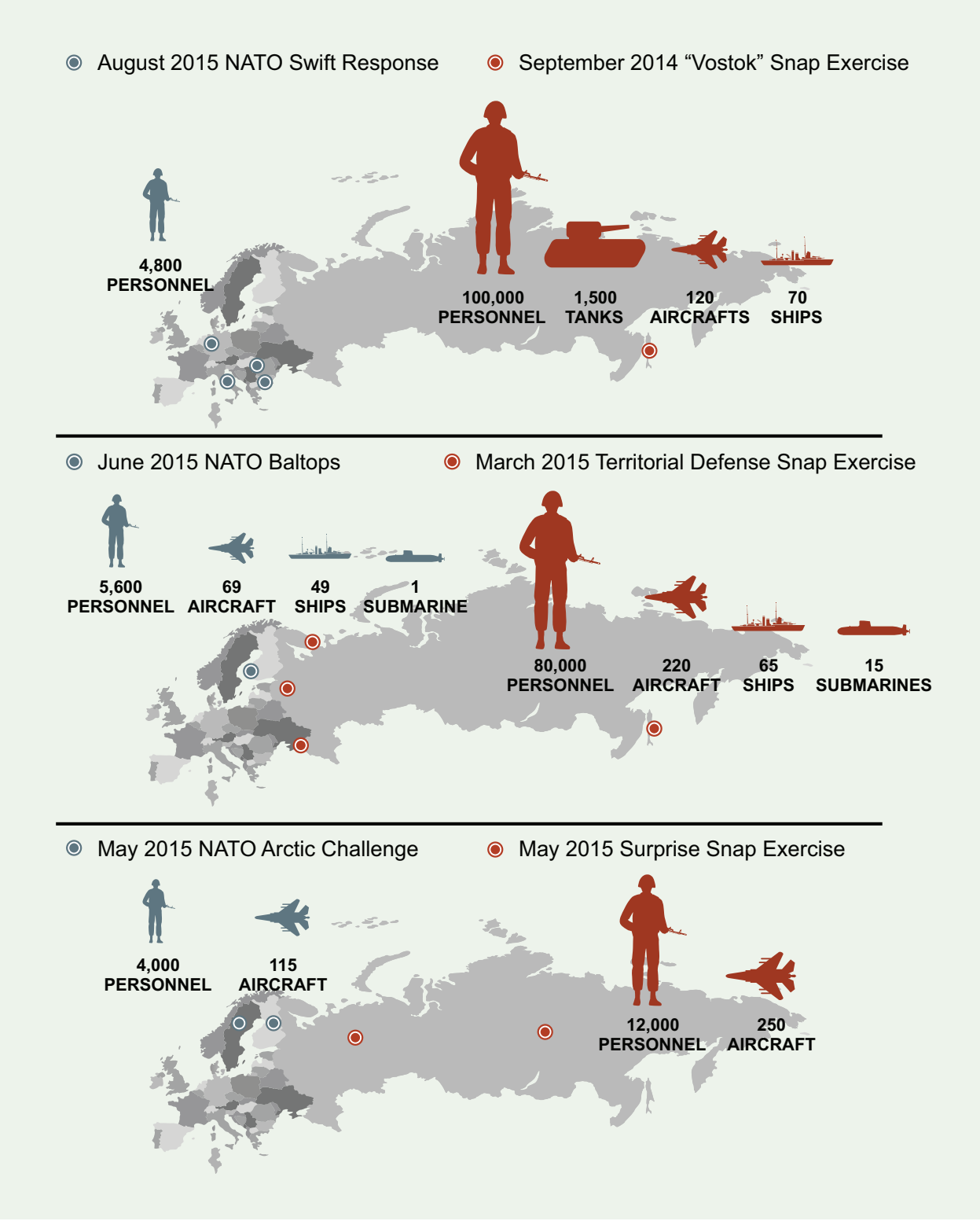
A revived European posture would include returning at least two brigade combat teams and an air wing to Europe. Moreover, that posture needs to include more powerful forces; the ground brigades should be configured along the lines of a traditional armored cavalry regiment, and the air component should include F-22s and F-35s. To maximize their deterrent value, these units need to be stationed farther east, perhaps mainly in Poland, but with detachments—or, at least, regular exercise patterns—in the Baltics and southeast Europe. These forces need the mobility and the firepower to perform constant reconnaissance and security missions and the ability to ensure a positive result in a crisis or small unintended or unforeseen conflict.

The requirements for deterrence in East Asia are more demanding, particularly with regard to the use of naval and sophisticated air forces. The Obama administration's stress on the region and concern over China's great-power rise is not misplaced, but the gap between strategic rhetoric and military reality has not been sufficiently addressed. And, in truth, there has yet to be a thorough discussion about what sort of strategy might serve to deter China. At the level of international politics, hopes persist—Chinese behavior notwithstanding—that Beijing will become a cooperative partner in preserving the global security architecture the United States has created. Conversely, within the Department of Defense, US defense planners have become focused on the anti-access and area-denial operational challenges posed by China's military modernization.

To be sure, the traditional American security perimeter in Asia—running from the Sea of Japan to the Straits of Malacca and nosing onto the continent on the Korean Peninsula—is a long and increasingly vulnerable one. Furthermore, Chinese submarine and other naval forces are beginning to be able to penetrate into the Philippine Sea, an area that, since the end of World War II, has been dominated by the US Navy and has served as a secure "rear" for projecting power along the Asian littoral.

In the broadest terms, a robust Pacific deterrent posture requires an increase in forces capable

**Figure 3. The "Russian Reset": Russia's Military Exercises Dwarf NATO's**




Source: Compiled from Jamestown Foundation, BBC, European Leadership Network, US Naval Institute, and Defense News.

of reconnaissance, surveillance, and rapid response along that littoral perimeter—particularly in the South China Sea—as well as a more powerful crisis-response force that can be brought to bear within days. In traditional terms, the US Navy should strive to maintain a two-carrier presence standard in the 7th Fleet's area of operations. At the same time, the Navy must ramp up its complement of smaller frigate and frigate-like surface combatants; the lack of a US presence in Southeast Asia is a pressing problem. In addition, the number of high-end Air Force aircraft in the region needs to be increased, and new basing or other long-term access arrangements need to be made in the Philippines and elsewhere around the South China Sea. The progress made with Singapore and Australia and in the buildup on Guam is a start, but only a start.

The United States must also develop a more creative military strategy for preserving its interests in East Asia. Although the vulnerability of the maritime perimeter in the western Pacific demands immediate attention, we need a more comprehensive approach for the longer term, one that potentially includes an increased "continental" element to our strategy. A truly competitive strategy for China would strive to divert China's ability to concentrate on naval and other forms of power projection and ignore other military arenas. While keeping in mind our commitment to democratic governance in the region, we need to revive military-to-military ties across Southeast Asia and, above all, develop a more persistent approach to India that would complement the direct force posture improvements in the western Pacific and improve the overall calculus of deterrence.

Finally, US force planning for East Asia must take account of our continued security commitment to allied South Korea, which includes substantial American air, sea, and land capabilities and does so in the face of an increasingly complex set of threats posed by North Korea. Contingency planning for the Korean Peninsula must also give greater consideration to the possibility of a collapse of the Kim regime and the potential force requirements for both preserving American interests in Korea and dealing with the immediate humanitarian crisis in a post-Kim environment.

## Securing the Middle East

In 1979, the postcolonial order across the greater Middle East and the Muslim world was roiled by a series of events that plunged the region into an extended period of chaos. Two weeks into the year, Shah Reza Pahlavi left Iran, opening the way for Ayatollah Ruhollah Khomeini to lead a revolution that created the Islamic Republic; by November, his loyalists had seized 52 Americans at the US embassy and held them hostage for 444 days. That July in Iraq, a ruthless general named Saddam Hussein forced the retirement of the aging and ailing Ahmed Hassan al-Bakr. Purging the ruling Ba'ath Party and styling himself "the defender of the Arab world," he embarked on what became an extremely bloody eight-year war with Khomeini's Iran. In November 1979, a group of several hundred Salafi extremists occupied the Grand Mosque in Mecca just as 50,000 hajj worshippers began their morning prayers. The siege ended relatively rapidly, and in January 1980 more than 60 of the insurgents were beheaded at eight sites across Saudi Arabia. But, in an act with even more profound consequences, the Saudi royal family decided that the way to control Wahhabi-style zealotry was to massively increase the subsidies they paid to Islamist fundamentalists.

Finally, near the end of 1979, at 7:00 p.m. on December 27, 700 special operations forces of the Soviet Union slipped across the border into Afghanistan, the first wave of a rapid and massive invasion—and a decade-long occupation—by 100,000 troops. Jolted by this series of unforeseen calamities and understanding that vital US national security interests were now deeply at risk, President Jimmy Carter in his January 1980 State of the Union address declared the "Carter Doctrine," asserting that "an attempt by any outside force to gain control of the Persian Gulf region will be regarded as an assault on the vital interests of the United States of America, and such an assault will be repelled by any means necessary, including military force."[12] By March, Carter had created the Rapid Deployment Joint Task Force, which three years later became US Central Command.

For the next 35 years, Carter's successors strove to achieve his goals but too frequently declared the mission accomplished too soon. A strategic partnership with Pakistan and the Gulf Arabs funded and trained

an Afghan mujahideen that bled the Soviets into retreat—and pushed the Soviet Union toward the dustbin of history—by 1989 but left Afghans to fight a civil war that lasted nearly as long and was ultimately won by the Taliban. The Reagan administration—once the Iranian hostages were repatriated—did its best to keep the Iran-Iraq war at arm's length, but the inconclusive outcome left Saddam Hussein with a huge army that had nothing to do. When he decided to employ it in Kuwait in 1990, George H. W. Bush had no choice but to respond, but, although the actions of Operation Desert Storm weakened Saddam's conventional forces substantially, they left him firmly in power in Baghdad. Isolated from the international community and economy and maimed by the horrors of the war with Iraq, the Islamic Republic was slow to recover.

Through the 1990s, the Clinton administration contented itself with a policy of "dual containment," keeping Saddam in his box and worrying more about Tehran's nascent nuclear program than its geopolitical ambitions. The dangers from radical Sunni terror groups—first suggested by the Grand Mosque seizure—were treated as matters for law enforcement, even as the frequency and scale of attacks on Americans and US forces and interests grew. Neither the bombings of US embassies in East Africa, nor the attack on the USS *Cole* in Aden, nor the botched attempt to bring down the World Trade Center in New York were, in American eyes, acts of war. Nonetheless, over 20 years, the United States had become the primary power in the greater Middle East, with US forces present everywhere in increasing numbers—including half a million US troops at the peak of Desert Storm.

The attacks of September 11, 2001, revealed how precarious the balance of power and how fragile and transitory the accomplishments of the 1980s and 1990s truly were. And they pushed the George W. Bush administration to take a more thoroughgoing approach to its strategy for the region; it concluded that neither tit-for-tat reprisals nor even toppling adversary regimes would suffice and that nothing less than a long effort to help build a more legitimate political order in the region would bring true stability. President Bush and his lieutenants were tragically slow to realize how difficult and sustained an effort was required to carry out this goal, yet with the Iraq "surge" they began to correct course. When Bush left the Oval Office, the Middle East balance of power was more favorable than at any time since 1979. The United States had taken substantial strides in Iraq and Afghanistan that could help it expand its network of partnerships and alliances with Israel and the Sunni states of the region to suppress al Qaeda and its affiliates while deepening Iran's isolation and discouraging outside powers such as Russia or China from overt meddling in regional affairs. The level of US forces in the region was still high, and although there was much fighting left to do in Afghanistan and although the anti–al Qaeda campaign demanded constant effort, the United States neared its larger goal of stabilizing Iraq, and its casualty levels were low.

President Obama has now fulfilled his campaign pledges to "end" the wars in Iraq and Afghanistan, and, since the May 2011 raid that killed Osama bin Laden, he has reduced the level of military effort directed at al Qaeda and its affiliates. He has undertaken several new military operations during his terms—notably the support of the rebellion that removed Muammar Gaddafi from power in Libya and the ongoing efforts against the Islamic State in Iraq and Syria—but these have been quite constrained, to the point that neither effort can be said to have achieved strategic success. President Obama's strategy has been further defined by roads not taken, beginning with the Iranian "Green Revolution" of 2009 and running through the collapse of the Mubarak and Morsi governments in Egypt to, perhaps most important, the Syrian revolution and the slowly expanding regional and sectarian war that has spawned. The administration's approach to Iran has been driven by its desire to negotiate a nuclear treaty, and the president has even expressed the possibility that Iran can be "a very successful regional power." It would be difficult to imagine a more profound reversal of traditional US strategy toward the region.

The net result has been nothing short of catastrophic. The regional balance of power is less favorable to the United States than at any time since 1979 and, thanks to the internal collapse of major states, the rising sectarian tide (both Sunni and Shi'a), and the withdrawal of US military forces (particularly land and land-based air forces), more volatile. Iran is making a sustained effort

to achieve a hegemonic position vis-à-vis the troubled congeries of Sunni Arab states and has successfully preserved an Assad regime in Syria that President Obama said "must come to an end."[13] And al Qaeda has not so much "splintered," as the administration contends, as metastasized. The Islamic State is now well entrenched in Anbar province, Mosul, Ramadi, and other key areas, and it continues to expand its base of power in Syria; the "destruction" of ISIS—the goal avowed by President Obama—will fall to the next president.

Achieving a balance of power as favorable as existed in 2009 is a mission unlikely to be fully accomplished even by the end of the next president's term in office. But it remains a mission of importance. Although America's own import needs have greatly lessened, the global economy remains critically tied to the region's energy supplies, not only impacting our own prosperity but also increasing the economic difficulties of allies and of both poor and rich nations alike. The freedom to transit the region is at stake. Moreover, it remains a region from which terrorism aimed at the United States and its allies continues to be generated. Diminishing America's role in the region has done little to eliminate the threat posed by *jihadists* whose goals reach well beyond particular US policy decisions. Similarly, the Islamic Republic of Iran is now the principal security and proliferation threat to the region, Israel, and the United States because of its own hegemonic designs. Further stepping back from the region will do nothing to assuage those designs and, indeed, will enlarge a power vacuum that is already creating incentives for greater weapons proliferation and open sectarian conflict that threatens enduring American interests and, indeed, the interests of the entire world.

Frustrating Iranian ambitions, effectively defeating ISIS in both Iraq and Syria, and suppressing al Qaeda and its many affiliates is admittedly a tall order. Translated into force-planning terms, there are many "subtheaters" in the region: the Persian Gulf, South Asia, the Mediterranean littoral, the Sahel and Central Africa, and East Africa. US forces must be engaged and active in each of these with enough force to achieve something beyond evanescent results. It is quite conceivable that the next administration will need to deploy anywhere from 25,000 to 50,000 troops to reverse ISIS gains in Iraq and Syria—and perhaps as many troops for a lengthy stabilization campaign after that. A future president must not be denied this option for lack of force planning now.

Nor was the Middle East of 2009 an inherently stable status quo. Even if something that approximates such a favorable balance of power can be reestablished, the challenge of containing Iran—and, within the foreseeable future, a nuclear Iran—would endure. Even President Obama admits as much. So would the fundamental problems of legitimacy that plague the autocratic regimes of the Arab world and of support for jihadists that is the corollary for failures of Arab governance. Yet, absent a comforting cocoon of American security and power, there is little likelihood that Arab regimes can reform themselves—or do so without resorting to large-scale violence. America's retreat makes these weak states more prone to internal repression and hence even less stable.

A substantial portion of US military forces—especially the Army—must be devoted to carrying out this mission. Today's force is in no position to do so, not only because of its lack of materials but also because of its low morale. A rising generation of military leaders has seen its efforts of the post-9/11 years end, if not in direct defeat in battle, then in strategic retreat. We must restore a culture of leadership commitment as well as the manpower and firepower this mission demands.

Clearly, since 2009 the tide of events in the Middle East has turned sharply against the United States and continues to flow out. What was a relatively favorable balance of power has become remarkably less favorable. As in 1979, what is required now will be a renewed US engagement and a recommitment of American forces—one that eschews the temptation to see battlefield successes as the "mission accomplished"—for a sustained effort to again create a balance that secures American interests.

## A Force for Decision

Neither trip-wire deterrence forces in Europe and East Asia nor even a force that begins to reverse the jihadi tide across the greater Middle East possess traditional

"war-winning" power. The calculus of deterrence is never certain; success is measured in the mind of the adversary, not simply by a bean count of troops, planes, or ships. Thus the US military must possess the ability to deploy rapidly and sustain much larger and fully joint forces in times of crisis or conflict from their bases in the continental United States.

These forces must be "operationally" decisive—that is, capable of meeting major campaign objectives such as seizing and securing caches of weapons of mass destruction, removing an aggressive and hostile regime from power and ensuring postcombat stability, or restoring a favorable great-power balance and reestablishing a credible deterrent. Given the global interests and diverse nature of the three critical Eurasian theaters, this reinforcing "force for decision" must possess a wide array of capabilities—air, land, sea, space, and cyber. Such a balanced "capacity of capabilities" is also necessary to provide a wider set of options to campaign planners and their presidents as well as the ability to employ asymmetric and indirect military means to an adversary; although steady-state, in-theater forces can be more narrowly tailored to their immediate missions, in times of crisis or conflict the need for effectiveness supplants the need for efficiency.

Establishing the exact size and construction of this decisive force is beyond the purview of this study; however, it ought to be a primary task of the next formal quadrennial defense review. But, like the late–Cold War "10-divisions-in-10-days" standard for Europe, the objective should be to identify what would be required to intervene both quickly and powerfully. Therefore, we should be strongly prejudiced in favor of employing principally active-duty, highly trained units able to deploy from both Atlantic and Pacific points of embarkation.

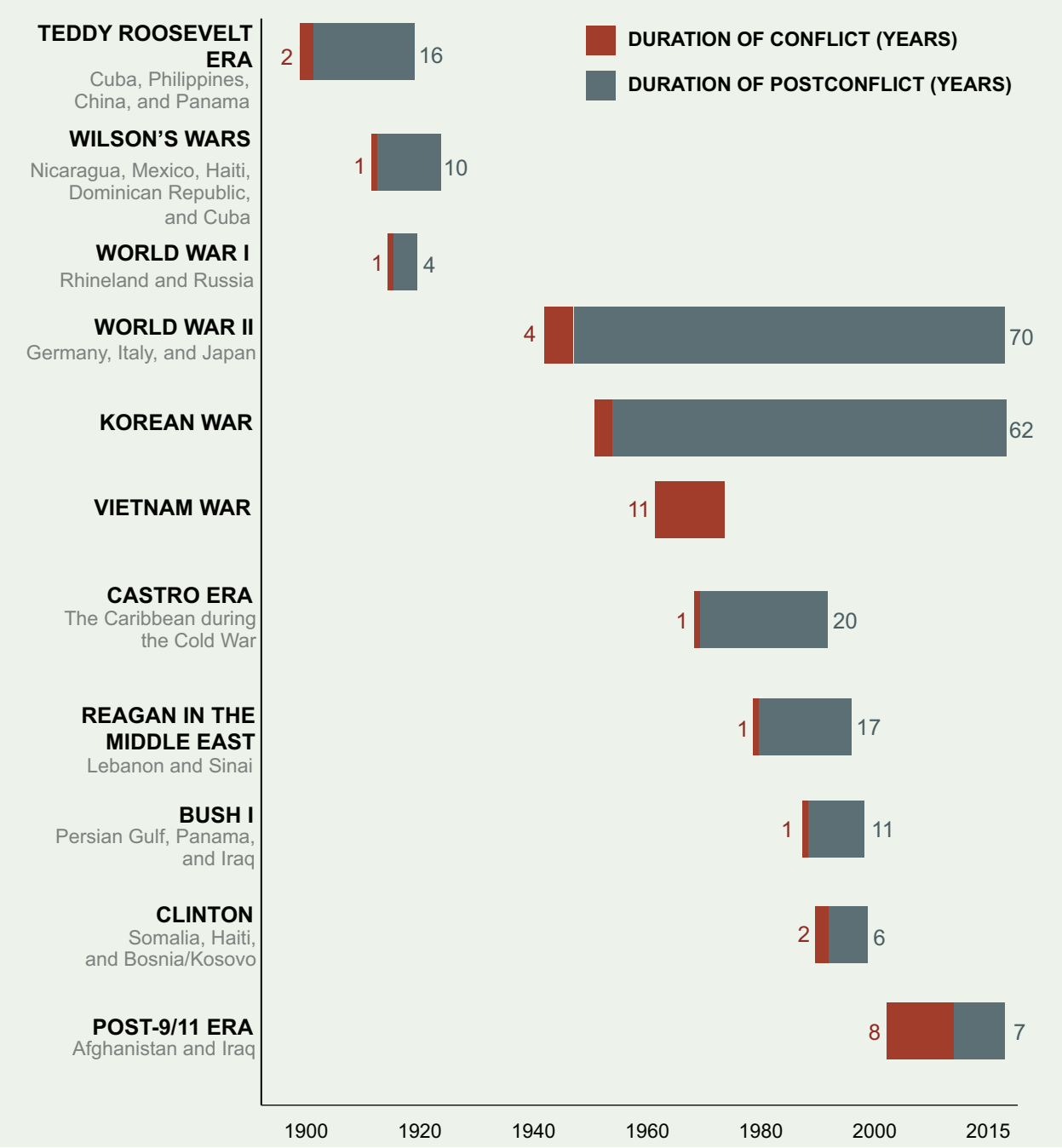
Providing a rapid, campaign-winning capacity to any theater is the first measure of a US-based military establishment, but it is hardly the only one. To endure as a global power, the United States must never be in the position—as it is now in danger of finding itself—of committing its last reserves of military power to any single theater. Thus, the American military and, as will be discussed in greater detail below, the particular armed services must retain the capacity, even while rapidly deploying a campaign-winning force, to generate a second such force within a matter of months. In accordance with Clausewitz's dictum that "war does not consist of a single short blow,"[14] plainly the strategic task for the United States—preserving a worldwide security system—must consist of the ability to operate on multiple fronts in a timely manner. The US military must retain a true "strategic reserve" of active-duty and reserve component forces that can be mobilized quickly to deploy either to a second crisis or conflict or, if conditions warrant, as further reinforcements in a large-scale campaign. That is the indispensable attribute of a superpower, and the military services must always possess a sufficient training base to continue to generate follow-on forces.

Finally, to provide the capacity to achieve America's traditional security goals in the 21st century, the US government and the Department of Defense must take a strategic approach to managing the "military-industrial complex," that is, not just the weapons-making defense industry but also the private contractors that provide essential services, without which the United States cannot sustain its military power. Yet, no post–Cold War defense review has addressed these issues directly, either in terms of long-existing industries such as shipbuilding or airplane making or combat vehicle manufacturing or in terms of newly invented weaponry, such as unmanned aerial vehicles. Perhaps even more important, there has been no strategic consideration of the need for services contractors, whether measured by the kinds of logistics services that are critical for deployment and sustainment of forces in remote theaters or the kinds of intelligence analysis needed for complex counterinsurgency operations. Any full consideration of the capacities needed to support adequate American military power, and particularly the kinds of large and long-lasting doses of American military power needed to achieve larger and longer-lasting victories (figure 4), must take private as well as public means into account.

## "Lesser Included" Contingencies

The 1993 *Bottom-Up Review* (BUR), conceived by former secretary of defense Les Aspin during his time as chairman of the House Armed Services Committee,

**Figure 4. Long-Term Commitments: The Uses of US Military Force**




Note: Values above represent the average duration of conflict and postconflict engagements for each era.
Source: US Army Capabilities Integration Center, Strategic Landpower Task Force.

framed the enduring measure of post–Cold War defense planning.[15] It argued that not only did the US military need to be able to respond to multiple "major-theater wars" but also that a force so sized and shaped would be able to respond to "lesser included contingencies." The idea was that a military able to deal simultaneously with big wars in Iraq and Korea could handle whatever else might come its way.

The shortcomings of this presumption became apparent in the deployments of the Balkans conflicts of the 1990s. The conflicts in Bosnia and Kosovo did not require heavy fighting or a lot of firepower, but their duration and irregular nature placed major stress on "low-density, high-demand" capabilities—troops with specialized skills and systems such as reconnaissance and intelligence aircraft.

In retrospect, however, the problems caused by the failure to predict the future of the former Yugoslavia—or, for that matter, the failure to foresee that al Qaeda would launch the attacks of September 11, 2001, from its base in Afghanistan—had far fewer consequences for the US military than the inability to imagine that forcibly removing parties from power, especially ones that had destroyed virtually all civic institutions, would require substantial stability operations afterward. American defense planners must, of course, hedge against the prospects for "strategic surprise"—genuinely unpredictable geopolitical developments—to some degree. What must be avoided, though, are predictable failures. It is one thing to run short of civil affairs specialists in Bosnia; it is quite another to have insufficient land forces, or indeed forces of many kinds, to properly conduct overlapping counterinsurgency campaigns in Iraq and Afghanistan. Not only are the consequences of the second kind of failure more serious, but they are also more predictable.

In sum, we must align US military force planning with a strategy designed to achieve traditional American purposes in the world. A passage from Clausewitz again leaps to mind: "Everything in war is simple, but the simplest thing is difficult." The recurring problems in American defense planning during the post–Cold War period do not result from the inability to field new technologies—the number of unmanned aircraft in US service inventories now exceeds the number of manned aircraft—or to innovate tactically, as the Iraq surge demonstrated. Rather, the larger fault has been a turning away from the simple-yet-difficult realities. We have stared, disbelieving, as states continue to acquire or modernize nuclear weapons. We have blinked at Putin's land grabs in Eastern Europe and at China's limits-testing in East Asia. And we have all but closed our eyes to the large but growing contest for power in the Middle East, pitting an Islamic Republic in Tehran against an Islamic State festering on the carcass of the old Arab order. The task of designing, building, and readying an American military strong enough to preserve America's interests in such a world is certainly not easy, but it is fully within America's capabilities. We now turn to the most important questions of what capacities and capabilities are required to meet a three-theater force-planning construct.

# 5

# Capacities

In 1961, responding to the management directives of the new secretary of defense, Robert McNamara, RAND political scientists Alain Enthoven and K. V. Smith in a famous report addressed the quintessential question of Cold War defense planning: *How Much Is Enough?*[16] Indeed, since the United States became a global power at the end of the 19th century, the prime directive for American security strategy is to have sufficient military capacity to achieve its geopolitical purposes.

Since the end of the Cold War, US defense planners have strayed ever further from this first-order enquiry. Absent the Soviet Union, whose military provided a global yardstick against which to measure sufficiency, the formal QDRs have adopted ever more obscure "metrics." Frequently, the reviews have confused qualitative and quantitative matters, seeking to mask the lack of capacity behind enthusiasm for capability. The 2001 QDR, written in the blush of enthusiasm over the prospects for military "transformation," explicitly argued for a "capabilities-based approach."[17] Similarly, the 2014 review, driven by the Obama administration's "rebalancing" strategy and the austerity imposed by sequestration-level budgets, sought to make up for the lack of capacity through "innovation" and what Defense Secretary Chuck Hagel described as an "offset" approach. Both these reviews substituted the hope that looking to the longer term—measured sometimes in decades—would make up for near-term shortages.

Chapter 4 of this report strove to frame a suitable set of measures of military sufficiency: a three-theater standard supporting a global security strategy. The discussion of required capacities that follows represents an attempt to further refine these quantitative assessments in regard to nuclear, air, land, maritime, special operations, missile defense, and space and cyber forces and to translate these into the current structures of the military services (figure 5). Given the rapidly changing—and increasingly threatening—international environment, we believe that the pressing question for defense planning is to understand "how much is enough—now." The United States does not enjoy the luxury of a "strategic pause," as was imagined in the late 1990s when "transformation" was the rage, or the ability to "offset" today's challenges while awaiting the "innovations" that might be available tomorrow; even if individual capabilities change rapidly, the required overall capacities do not.

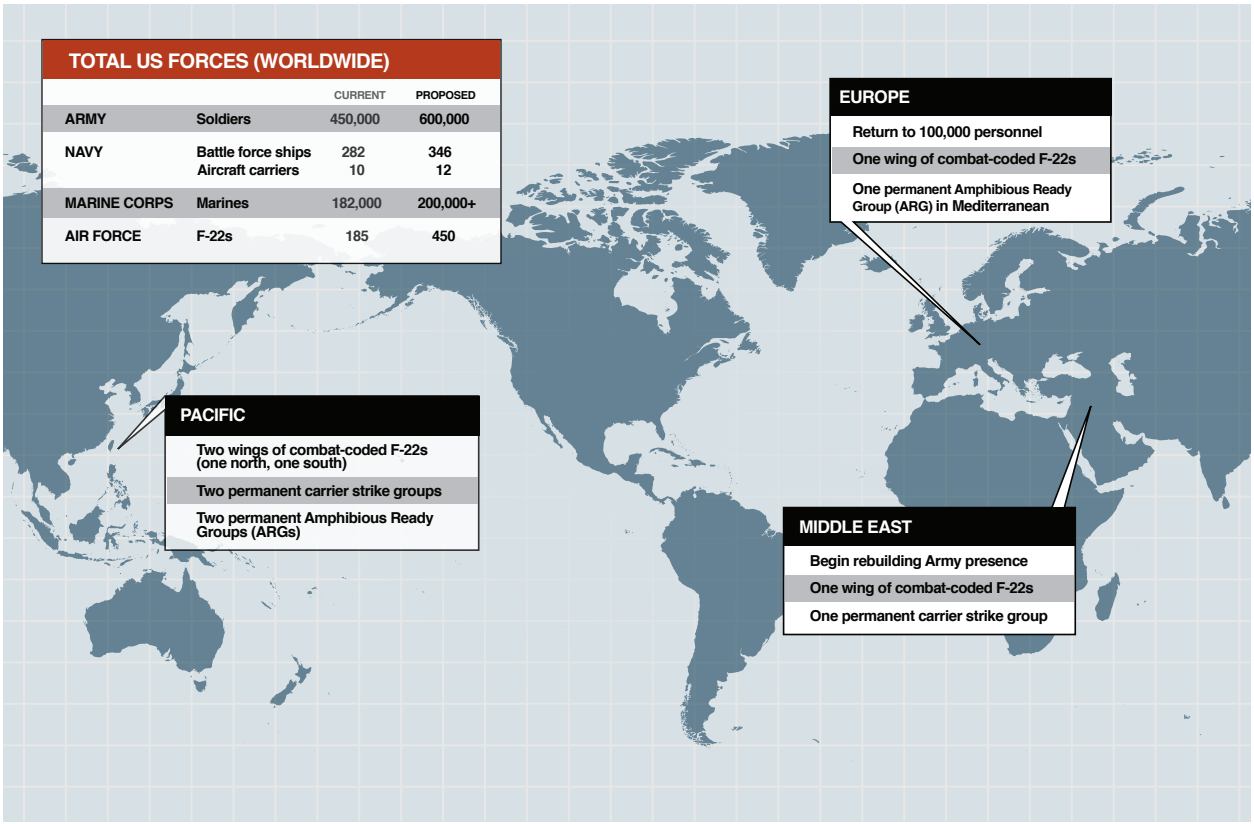
An analysis of capabilities, in terms of current procurement programs and potentially game-changing research, engineering, and investments, will be dealt with in the subsequent chapter.

## Nuclear Forces

The primacy of deterrence theory in American military strategy making is a result of the creation of nuclear weapons and is heavily shaped by the experience of the Cold War. Conversely, should Iran acquire nuclear weapons, our ability to rebuild a favorable regional balance of power will depend on the United States maintaining a favorable nuclear balance. For the future, and to support the global strategy and overall three-theater posture that is the centerpiece of this report, the United States needs to reimagine its nuclear strategy and revitalize its nuclear forces.

The global nuclear balance has become more complex in recent years. No longer does the United States stand athwart a single nuclear-capable superpower as it did in the Cold War. China is becoming a global power equipped with strategic arms and is increasing both the size and technological sophistication of its nuclear arsenal. Other nuclear forces, from the developed arsenals of

**Figure 5. Three-Theater Construct: Framework for Global Leadership**




Source: Calculated from the Office of the Undersecretary of Defense (Comptroller), *Fiscal Year 2016 Budget Request Overview* and the US Navy's *Carrier List*.

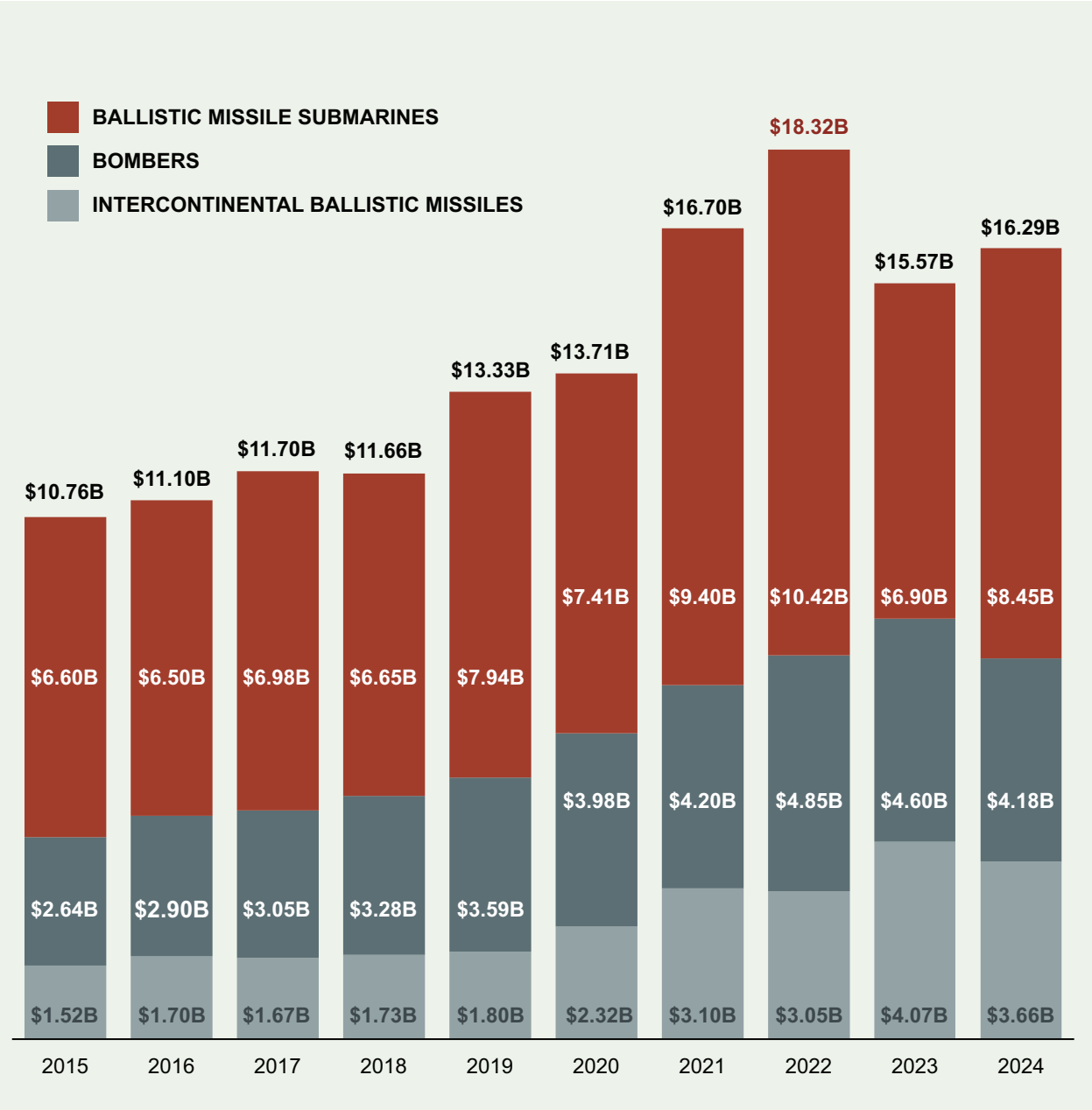
Pakistan and India to the growing capabilities of North Korea and the potential capabilities of Iran, further disrupt the traditional calculus of global deterrence and assurance; Iran's program could easily spark a nuclear arms race in an already volatile region. In response to such a likelihood, Saudi Arabia has declared its interest in acquiring its own nuclear capability. Moreover, many of these nuclear nations have long-standing differences and conflicts among themselves; even when the United States might not itself be directly involved in hostilities, it has sought to deter a conflict. In sum, the Cold War "bipolar" nuclear balance is morphing into a more unstable "multipolar" nuclear world.

As nuclear weapons have proliferated to new, often-aggressive nations, America has allowed its traditional nuclear "triad" of ballistic missile submarines, nuclear-capable bombers, and land-based intercontinental ballistic missiles (ICBMs) to decay. But in the emerging multipolar nuclear world, the stability of the triad is increasingly valuable. Each leg of the triad complements the others, balancing their weaknesses or vulnerabilities. If properly modernized—including the introduction of more relevant and less destructive warheads—even a relatively modest US nuclear force could prove a robust deterrent.

The US nuclear force is also relatively inexpensive. The current nuclear enterprise demands only $15 billion to $16 billion a year, but new and substantial investments, as shown in figure 6, must be made very soon to recapitalize the nuclear triad. Our nuclear forces, their service lives extended well beyond their designed lifespan, are aging precipitously, and we lack the sufficient infrastructure and industrial base to maintain a persistent modernization program.

Such a program should first focus on diversifying our deterrent by qualifying the F-35 strike fighter to carry

**Figure 6. The Big Bang: Cost of Modernizing the Nuclear Triad**




Source: Calculated from Congressional Budget Office, *Projected Costs of U.S. Nuclear Forces, 2015–2024*, January 22, 2015, www.cbo.gov/publication/49870.

nuclear bombs and by redeveloping a nuclear cruise missile. These "tactical" or theater-level systems are essential for enhancing the kind of extended deterrence that underlay NATO cohesion during the Cold War. A second step would be quickly replacing the *Ohio*-class nuclear submarine and the D-5 Trident ballistic missile. Thanks to their survivability and mobility, nuclear submarines are capable of providing a persistent, variable presence around the globe to deter potential adversaries and provide vital assurances to allies and partners. The

planned *Ohio* replacement will begin to enter service by 2031, but, because of past funding restrictions, the program has been delayed to the point that the submarine force will reach dangerously low levels of operational boats in the early 2030s. Under the constraints of current treaties, the Navy will need a smaller boat to keep up the necessary number of boats available and at sea for the Navy to meet its strategic requirements and sustain the survivability of the deterrent.

The nuclear bomber force similarly strengthens assurance for our allies through visible, forward deployments that signal resolve to allies and adversaries alike. And, as with the ballistic missile submarines, the current bomber force is old and small: the B-52 fleet operates 50-year-old airframes, and there are only 20 B-2s. The recently concluded "New START" treaty will restrict the B-52 fleet to 42 deployed and 4 nondeployed aircraft, well below the levels mandated by Congress. Furthermore, the B-52 cannot operate in a sophisticated air defense environment, and even the stealthy B-2 is vulnerable in daytime. The combination of old age and small fleet size has diluted the deterrent value of the bomber leg of the triad. In sum, the Air Force needs a new family of long-range bombers for nuclear as well as conventional missions.

The longtime backbone of the nuclear force is the silo-based Minuteman III ICBM. Though not as pressing a modernization requirement as the submarines or bombers, developing a new ICBM to replace the 450 Minuteman IIIs should remain a priority even as the Air Force modernizes the missiles to sustain them through 2030. In particular, revisiting the concept of mobile missiles, not tied to their silos, would increase the value of the land-based deterrent. In addition, planners should consider steps to modernize and replace the warheads used on both the Trident and the Minuteman IIIs. Current life-extension programs may buy more years out of existing systems, but, as with the rest of the triad, a new warhead will be needed in the coming decades as these systems age well beyond their life expectancy, increasing the cost of maintaining their effectiveness and safety. The current warheads are also hugely powerful weapons, perhaps too terrible to be a credible deterrent, particularly in the case of smaller nuclear adversaries or for "extended" deterrence to cover allies or in circumstances where the United States or US forces are not existentially threatened. The US nuclear arsenal has lost much of its flexibility and thus a proportion of its deterrent value.

Last, the United States must face the facts of its aging nuclear infrastructure. While the missiles, bombers, and submarines age, the operational, scientific, engineering, and testing infrastructure erodes. The problems at missile silos are well documented, but it is unacceptable that we would allow the hardened homes of our most powerful weapons to fall into disrepair. Beyond these maintenance programs for deployed weapons, the United States must address the dearth of an industrial base capable of managing the long-term modernization programs described here. Reestablishing this capacity requires immediate funding and deserves the full support of military planners.

The stability of the "triad" structure gains strategic importance as the overall size of the US nuclear force shrinks. Placing a diminishing number of eggs in fewer baskets opens up vulnerabilities and complicates our deterrence posture, even to adversaries armed with a smaller number of weapons. Even the Obama administration—led by a president committed to abolishing nuclear weapons before they abolish us—admits the continuing need for a robust nuclear deterrent. Former Secretary of Defense Chuck Hagel, who shared his commander-in-chief's overall goal, once described our nuclear deterrent as the Pentagon's "highest priority mission. No other capability we have is more important."[18]

The United States needs to retain a sufficient nuclear capacity not only to deter great-power challengers such as Russia and China but also to respond to the potentially even more unnerving direct threats posed by smaller nuclear states such as North Korea or, as might be too soon apparent, Iran. The prospects of "extended deterrence"—such as that thought to cover NATO allies in Europe during the Cold War—will be more uncertain and complex as weapons proliferate and as US conventional-force supremacy is called into question. The logic of the Cold War nuclear "balance of terror" rested on a blood-curdling calculus; the reckoning of a multipolar 21st-century nuclear balance will likely prove less stable—and the actual use of nuclear weapons a more likely prospect.

## Air Forces

Air power is the signature form of American conventional military power. Put simply, America's enemies most fear—and our allies most rely on—our ability to exploit the skies to find, to strike, and to destroy any target at any time at any point on the planet. Not without reason, it has been argued in recent decades that this precise, powerful, and useful form of power can have a "strategic" effect. In particular, tyrants such as Slobodan Milosevic and Saddam Hussein—those who fielded militaries quite capable of overpowering their own people and their immediate neighbors—found their armies so vulnerable that, when the United States and its allies would no longer tolerate their terrible behavior, their regimes could be removed at will and at a much lower cost than in previous conventional conflicts. The combination of global reach and the ability to mount and sustain a punishing theater air campaign are unique features of US military forces.

Tactical, "in-theater" air forces have become and must remain the pillars on which the strategic effect of American air power is premised. Whether by land or sea, they provide the forward-based capacity and sheer mass for presence, patrol, and, if needed, striking power that underpins conventional deterrence in Europe and East Asia and support for any effort to roll back the advances of ISIS or other foes across the greater Middle East. The combination of deployability by land or by sea; mass; flexibility; sustaining day-in, day-out air efforts; and many other factors makes tactical air forces the sine qua non of a globally engaged military power. America's enemies have long recognized the effectiveness of US tactical air power and have made vast investments to try to blunt its power, such as more capable and integrated air defenses to defend their skies and arsenals of ballistic and cruise missiles to hold airfields and aircraft carriers increasingly at risk.

To preserve this critical operational advantage, the United States must take two steps—and take them rapidly. The current fourth-generation aircraft that comprise the bulk of US fleets—the F-15, F-16, F/A-18, and AV-8B Harrier—are aging and reaching the limits of their technological utility. Likewise, the current fleet of stealthy aircraft—the F-22 and B-2—is microscopic. The first step in remedying the problem is to field a large "swarm" of stealthy everyday tactical aircraft—that is, the F-35. The second is to build a substantial fleet of very stealthy long-range bombers—the Air Force's Long-Range Strike Bomber (LRSB) program. Other enabling measures—such as fielding a new tanker fleet and a range of unmanned supporting aircraft—are also necessary, but the air campaigns of coming decades will demand a combination of mass and range that only the F-35—the F-35B will be of particular importance—and a new bomber fleet could meet. Another crucial factor at play in the F-35 program will be its proliferation to allies and partners, an effort that will add hundreds of advanced aircraft to the inventory of a US-led coalition.

Even though introducing more advanced aircraft into US service inventories will increase capability and change tactics and operational concepts, fleet capacity will not change as much; the size of the long-range and tactical-range air forces is, first of all, a reflection of geography, strategy, and the unforgiving arithmetic of force generation. Consider, as an example, the demands placed on the F-22 Raptor fleet, just 185 planes and now the sole aircraft that would be used to ensure air superiority, a requirement not only for other kinds of air operations but the employment of naval and land forces, against advanced air defenses. Of that 185, roughly 100 might be "combat coded"—that is, ready for use in a conflict or crisis—on a given day. In a South China Sea scenario, a 72-plane wing based at Anderson Air Force Base on Guam, the largest US base in the South Pacific but 1,500 nautical miles distant, could maintain a steady-state combat air patrol of six aircraft—if sufficient tanker aircraft were also available. In other words, the current F-22 fleet is incapable of supplying the needs of the Pacific theater, let alone other theaters or anything like the kind of operational reserve required to sustain an extended campaign.

At the minimum, and to remain a three-theater global power, the US Air Force needs to have a four-wing "combat-coded" F-22 fleet. In fact, given the size of the Pacific theater, a six-wing fleet—two wings allocated to the Pacific (one north, one south), one to Europe, and one to the Middle East, with at least one

tactical reserve wing in the continental United States plus an operational reserve—is needed.

In other words, the true requirement for an air superiority fleet is something on the order of 450 aircraft, not the 185 F-22s now in service. (The original projected F-22 buy was 750 aircraft.) A similar logic should be employed to determine the requirements for the total F-35 purchase; it is almost certain that the current program number—about 2,400 aircraft total across all Air Force, Navy, and Marine Corps versions—is too small. And a similar process should be used to determine the size of the new bomber fleet: it should be recalled that the LRSB is meant to be a "family" of aircraft, including manned and unmanned, nuclear-capable, and conventional platforms. Although a substantial portion of the new bomber fleet will of course be managed as is the current fleet—a "national asset" held in reserve—it is very likely that a scaled-down, unmanned version of the plane could be used to complement both the F-22 and the F-35, particularly the F-35, which will, with time, be employed more as a kind of stealthy "armed scout" hunting targets that could be struck by munitions from other platforms.

The effectiveness of US tactical airpower depends critically on complementary and enabling aircraft. Some of these are exotic command-and-control or electronic warfare planes, but the real sinews of theater-capacity tactical airpower are the Air Force's tanker and cargo aircraft fleets. Thus, the service has made the KC-46 tanker project one of its primary procurement efforts, and though the program has been a troubled one, buying these tankers based on Boeing's 767 airliner at substantial, steady rates should be a high priority; replacing the aged KC-135 fleet is dangerously overdue.

Declining budgets have also wreaked havoc on the Air Force's plans to sustain and modernize its fleet of cargo aircraft. As noted several times in this paper, the ability to provide logistics support on a global scale and in large quantities is a sine qua non capacity of the US military, but operational commanders' demand for this requirement well exceeds existing capacity.

Alas, in recent years, the Air Force has had to make crippling cutbacks in its efforts to fill operational shortfalls. First, it jettisoned the C-27 program, which was an affordable way to improve sustained short-range airlift for within a theater of operations, a job that had severely taxed and prematurely aged the Army's modest fleet of medium-lift helicopters. Second, it has terminated production of the C-17 airlifter, the lone large-body, "strategic" cargo plane in US production, while simultaneously funding upgrades on more of the older generation C-5 global airlifters. Finally, the Air Force has had to slow down additional deliveries of the most modern C-130J aircraft—thus being forced into keeping the less reliable and less capable H models in service.

In sum, rather than expanding the airlift fleet to close the gap between supply and demand, the Air Force has had to constrain its airlift capacity. Coupled with the Obama administration's decision to pull back from many forward deployments, the result is an American military increasingly based at home but equipped with reduced means to get to distant theaters. This is a fatal weakness now and a crippling deficiency that must be remedied to build the three-theater capacity recommended in this report.

Preserving the kind of air power that the United States has enjoyed since the end of the Cold War—that ability to project significant force into adversaries' skies and sustain it to punishing effect—is the cornerstone for preserving America's ability to act as the guarantor of the international system by deterring great powers and defeating lesser adversaries such as ISIS. The collapse of the Soviet Union allowed the US military to achieve this unprecedented dominance at an incredibly low cost by employing the fourth-generation aircraft purchased in the late–Cold War, Reagan-era buildup in new ways, by extending their service life with upgrades not only to the aircraft themselves but to the avionics and munitions they carried, and by leveraging a small number of revolutionary stealthy aircraft to multiply the effects of the nonstealthy mass fleets. The end of the era of cheap global air supremacy is in sight, leaving America with a choice: either pay the price to rebuild our air power or reap the strategic and military consequences of failing to do so.

## Land Forces

It has been the unerring inclination and desire of post–Cold War defense reviews to reduce the size of America's land forces, especially the US Army. This has also been the greatest folly of such reviews, one for which the Bush administration paid a very high price: for want of foot soldiers, the United States was unable to sustain coherent counterinsurgency efforts in Iraq and Afghanistan at the same time. The failure to attain sufficient success in a timely fashion was, quite arguably, the central factor in creating the conditions for the catastrophic retreats across the greater Middle East.

America's political class has long suffered from a fear of putting "boots on the ground." This neuralgia has reached a fever height in the case of President Obama's confused campaign to "degrade, defeat, and ultimately destroy" the Islamic State in Iraq and Syria; pursuant to President Obama's 2012 *Defense Strategic Guidance*, "US forces will no longer be sized to conduct large-scale, prolonged stability operations."[19] With the assistance of congressional budget hawks, the administration is attempting to translate this guidance into irreversible policy: at the budget levels predicted under the sequestration provision of the Budget Control Act, active-duty Army troops strength will fall to about 420,000—compared to the 562,000-soldier force achieved in the late Bush years and 780,000 at the end of the Cold War—and Marine strength to 175,000 or less—versus the recent level of 202,000.

This is a crippling injury to American geopolitical leadership, to the conduct of a traditional US security strategy, to the three-theater force-planning construct we have sketched out here and ultimately to American security and America's efforts to deter or limit armed conflict. The missions of deterrence in Europe and securing the greater Middle East both involve substantial land forces in efforts that must be sustained for many years to come. As will be discussed in greater detail in the chapter to follow, the strategy depends on preserving the Marine Corps as a sea-based force employed primarily in maritime operations. And to deliver anything approximating a decisive weight in times of crisis or conflict, any US-based force must be able to generate two Army and one Marine Corps–sized formations in a timely fashion for deployment.

Reviewing the level of land-force efforts required during the Iraq-plus-Afghanistan years—roughly 2007 to 2011—provides an indicative if imperfect force-sizing measure. To repeat: US land forces were insufficient to properly conduct both campaigns simultaneously. But not only were active-duty Army troops levels raised to 562,000 and Marine strength to 202,000, but the effort also required a very heavy and constant mobilization of National Guard and Reserve units and individuals, totaling about 100,000 every day through that period. Measured in terms of Army brigade and Marine regimental combat teams, the two campaigns required a constant deployment of about 24 BCT/RCTs as well as four corps-level and two combined command headquarters—because such operations are inevitably coalition efforts that include not only other allied but also indigenous forces. While understanding that the campaign requirements of the strategy outlined in this report demand greater analysis, we find it difficult to imagine that fewer land forces would be required.

To meet a three-theater standard, the active-duty Army should be built up to at least 600,000 soldiers and the active Marine Corps returned to 200,000-plus, for in addition to the many campaigns required to restore a favorable Middle East balance, the US garrison in Europe must be restored to sufficient strength. Although such strength levels would lessen the chances that reserve-component formations and individuals would be employed as a steady-state "operational" reserve, they would nonetheless continue to play a larger day-to-day role than in the Cold War, comprise an essential element of the US-based "force for decision," and be the backbone for further mobilization.[20]

An assessment of land-force equipment needs indicates the following: the combination of budget cuts and the demands of adapting to unanticipated battlefields wreaked havoc on service modernization plans, most especially Army ground vehicle programs. In simplest terms, the Army has come out of these conflicts with the same basic vehicles—the M1 Abrams

tank and the Bradley Fighting Vehicle—that it took to war; hurriedly bought about $30 billion of off-the-shelf Mine-Resistant Ambush-Protected armored trucks; and spent further billions to develop a system of Future Combat Vehicles that would have been ideal for the Balkans wars of the 1990s but of doubtful value in the Middle East. Whether the Army's latest major program—the Ground Combat Vehicle—was the right design or not, it has fallen prey to budget cuts. By contrast, the Army's helicopter fleet—the UH-60 Black Hawk and CH-47 Chinook transports and the AH-64 Apache—have proven winning designs capable of repeated improvements and are likely to have long service lives ahead. And although controversial, the Marines' aviation programs—the V-22 Osprey and "B" model of the F-35—have proved to be two of the few successful modernization efforts of the last decade. Alas, the Marines' effort to build a new generation of amphibious assault vehicles, one that could both move rapidly from ship to shore and be of greater value in land combat, died on the budget chopping block.

In sum, both services have healthy aircraft programs but vehicle problems. The Army needs a new complement of heavy land combat vehicles. The very heavy Ground Combat Vehicle makes more sense once a long-term commitment to the European and Middle Eastern theaters is granted, but less so if deployability drives the design. And the Marines need to retain both the ship-to-shore and close-combat requirements for their future fighting vehicle. Although neither service needs a Cold War–size fleet, they both need greater capability.

Halting the decline in US land-force capacity—and indeed, strengthening those forces to a point they have not been in decades—is an essential key to deterrence in Europe and success in the greater Middle East. Rebuilding American land power is also necessary to support deterrence in East Asia—particularly through amphibious and airborne forces and perhaps by developing intermediate-range missiles—and to reserve a force that can be deployed to intervene decisively when necessary. Such land forces are critical to giving the United States a "scale-tipping" weight in the Eurasian balance of power.

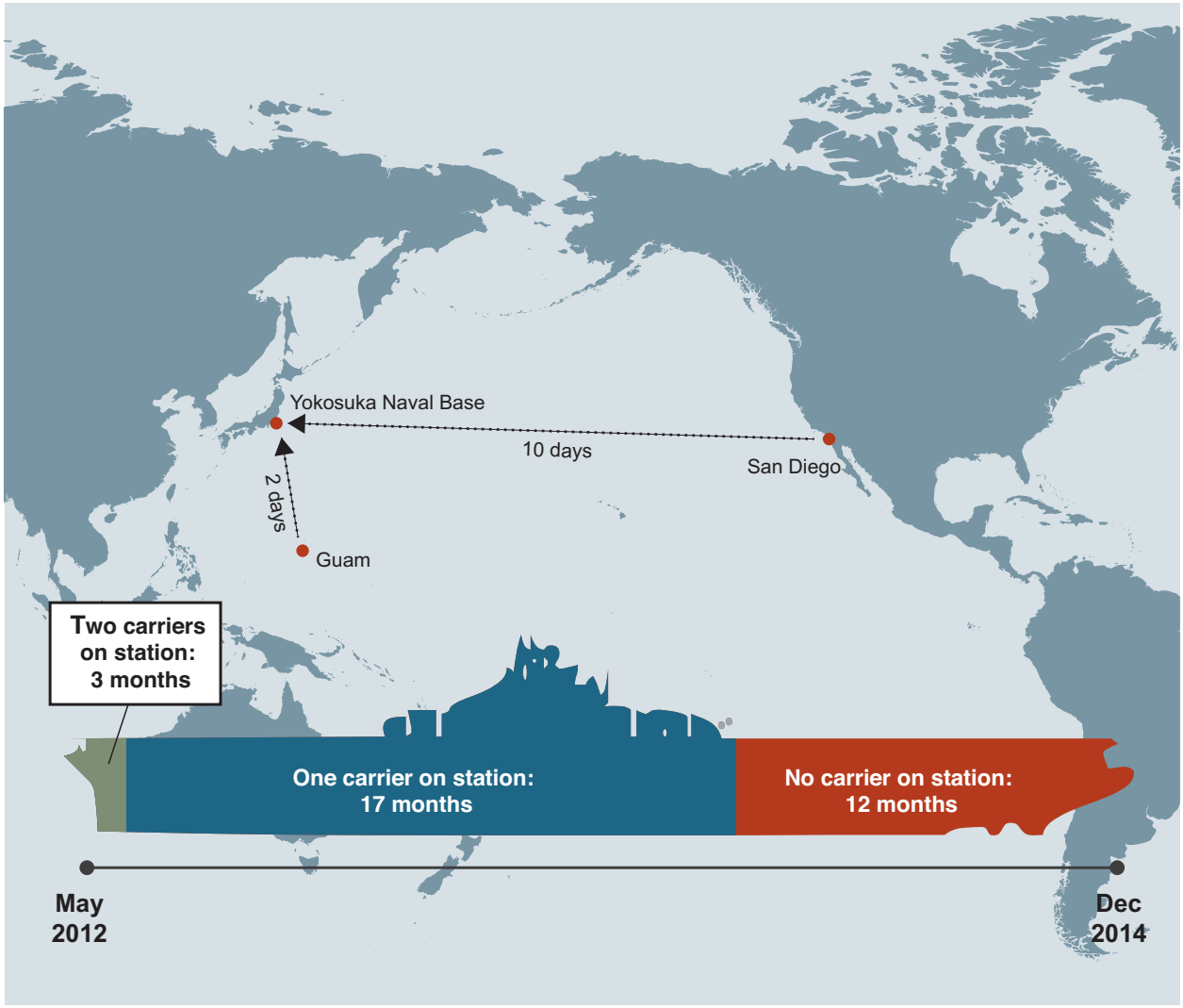
## Maritime Forces

Consequent to the Obama administration's "rebalancing" of the US military toward the Asia-Pacific region, the Navy and Marine Corps have accelerated the shift of ships and assets from the Atlantic to the Pacific that began during the Bush years. Although these steps are necessary, they are not sufficient. Focusing on basing rather than operating patterns is to mistake "inputs" for "outputs." For example, in announcing the Pacific Pivot, the administration and the Navy made much of the fact that 60 percent of the Navy would be based in the Pacific. But, too often, they have simply sailed across the Pacific on their way to the Middle East; in 12 of the first 32 months after President Obama issued his pivoting "defense guidance," there was no Navy aircraft carrier in the 7th Fleet area of operations (figure 7). And in only three of those months were there two carriers—the right number given the sheer size of the place—in the 7th Fleet area. China cannot be deterred from the Arabian Sea.

To support the three-theater posture required by the strategy defined at the beginning of this report, the United States must take further steps to concentrate the most maritime assets in the most maritime theaters, that is, the western Pacific, the Indian Ocean, and Arabian Sea. This will mean relying more on land-based air power, surface combatants, submarines, and Marine amphibious ships in the Mediterranean, Black, and Baltic Seas areas and ensuring that two large-deck Navy carriers are constantly on patrol in the Pacific. In sum, the structure of the two sea services must meet an overlapping set of "three-hub" measures: the Navy should keep two carrier strike groups in the western Pacific and one in the Indian Ocean/Arabian Sea at all times; the Marines should keep two Amphibious Ready Groups of three amphibious ships each in the Pacific and one in the Mediterranean at all times.

To ensure 365-day-a-year presence of both Navy carriers and Marine amphibious ships at these operational hubs, the US military needs a total of 12 nuclear-powered aircraft carriers and 12 amphibious assault ships—the current fleet includes only 11 of each. This four-to-one, fleet-to-operating hub calculus is driven by the unforgiving arithmetic of maritime force generation.

**Figure 7. What Pivot? Carrier Presence in the Pacific**




Source: Calculated from Stratfor's US Naval Update Maps, May 2012 to December 2014

The combination of the large distances ships must travel from their bases to their operating areas with the need to train crews before deploying, maintain and modernize ships between deployments, and ensure sufficient periods of "home time" for crews and their families drives these day-to-day requirements. With respect to the 12 aircraft carriers, for example, 3 would be deployed on-station, 3 would be returning home from deployment, 3 would be preparing/training for their next deployment, and 3 would be in some kind of maintenance and modernization period. The ability to deploy larger forces in times of crisis or conflict would depend on ensuring a relatively high rate of readiness among forces not actually operating in the hub areas. Both sea services must be able to put to sea an additional three groups in support of a US-based force needed for a more decisive operation of the sort described above.

While these carrier and amphibious group requirements are the backbone of maritime capacity requirements, other critical missions demand steady presence of submarines, a variety of surface combatants, and maritime patrol aircraft. These should also be regarded as operating hubs for force-planning purposes. As discussed, a reinvigorated deterrence posture in Europe

demands stepped-up presence in the Baltic and Black Seas, but these are not the only requirements. Competition over the Arctic is also heating up and is likely to demand US presence, perhaps with NATO partners. Antipiracy and antiterrorist missions off the coast of East Africa have become steady-state demands; West Africa and the Gulf of Guinea should be considered in a similar light. Even within the major-hub construct outlined above, there is a need for increased capacity. For example, Chinese behavior in the South China Sea results, in no small measure, from the absence of a US Navy presence. The plan to station four littoral combat ships (LCSs) in Singapore is a good first step, but it is likely to provide less than half of even the small-surface-ship presence needed to cover that vast region. Moreover, China's ability to put larger and more capable fleets to sea means that the US Navy must have more capable ships than the LCSs in the region. Similarly, the future ability of the Chinese navy to operate in the Indian Ocean inevitably will shift the orientation of Navy operations there. The current focus is on the Persian Gulf and the Arabian Sea approaches to Iran; over time, attention will shift to the Bay of Bengal and eastward, perhaps demanding expanded basing in and operating access to northern Australia.

The current and emerging requirements for US sea-service assets demand both a shift in patterns of operation as well as an increase in fleet capacity. To begin with, the Department of Defense needs to undertake a rigorous analysis of what maritime missions can be conducted by land-based forces—including the US Air Force—particularly in smaller seas such as the Baltic, the Black, or the Mediterranean, or even in subregions of the Pacific. Possible missions particularly include missile-defense in the Mediterranean; it is a waste to have four very capable *Arleigh Burke*–class destroyers—and a much larger number, if the rotational requirements are taken into account—parked in the eastern Mediterranean. It is similarly wasteful to have carrier-based aircraft conduct endless combat air patrols over inland areas of the greater Middle East. There is a political convenience that comes with employing sea-based forces—such as, supposedly, avoiding the appearance of an American "occupying" force in Muslim-majority regions—but it comes at huge operating and opportunity costs. The United States can no longer afford to be so profligate with its maritime power.

This more parsimonious approach is also the result of allowing the Navy to shrink to a size not seen since World War I. Today's Navy consists of just 289 ships—a number too small to meet current requirements, let alone the demands of a three-theater, three-overlapping-hub posture. Nor is the Navy's current plan—which it almost certainly lacks the budget to carry out—to increase the fleet to 308 ships adequate. The truth is that, lacking useful strategic or operational guidance, the Navy itself does not know what capacity it would require. In its 2014 report, the National Defense Panel expressed its frustration at the lack of a coherent measure of US naval power and could do no more than estimate a range of fleet sizes from 323 to 346 ships. To repeat and to summarize: even if the Navy and Marine Corps were perfectly postured and deployed only to those places where sea-basing paid its maximum dividends, the fleet would be too small.

## Special Operations Forces

In his farewell address on retiring as the head of US Special Forces Command (USSOCOM) in the summer of 2014, Admiral William McRaven declared that the United States is in "the golden age of special operations forces."[21] McRaven was correct: special operations forces (SOF) have played an outsized role in the wars of the post-9/11 period. Ironically, the dazzling successes of elite special operations forces—and most of all, the raid that finally killed Osama bin Laden—seem to have dazed and confused American strategists.

If the United States intends to preserve and enhance the international system that has become the framework for defending our global national security interests, it cannot rely too heavily on military forces designed to carry out small-scale raids, conduct strikes, and provide intermittent small-unit training. Although special operations forces do play a critical role across the three-theater construct outlined in this report, in no case can they be considered as the primary instrument of US military power. This rule applies especially to the greater Middle East, where the extraordinary

capabilities of special operations forces have too often been asked to make up for a lack of conventional land-force capacity and operational concepts detached from sound strategy.

McRaven's "golden age" of SOF might be said to have begun during the initial invasion of Afghanistan, where a small number of elite units, in tandem with CIA operatives and a remarkable display of American air power, partnered with Uzbek and Tajik militias to remove the Taliban from power much more rapidly than imagined in the wake of September 11. Special operations forces directed by then Lieutenant General Stanley McChrystal were also highly effective in hunting down "high value targets" in Iraq and Afghanistan, developing the methods that were eventually displayed in the audacious bin Laden raid. These successes drove the Obama administration, motivated primarily by its desire to "end" the Middle East wars, to rely too heavily on special operations forces, to the point of building SOF up while sharply cutting conventional forces. Both the 2012 *Defense Strategic Guidance* and the 2014 *Quadrennial Defense Review* called for increased reliance on special operations forces, and recent USSOCOM budgets are at record levels.[22]

Even at such levels, the number of personnel assigned to USSOCOM makes up only about 5 percent of the US military. Special operations forces should be thought of as the military's scalpel and conventional forces as its sledgehammer: one tool is used selectively and incisively; the other is applied when the application of power is required in mass. One force brings innovation; the other brings amplification. These forces, though complementary, are not perfect substitutes.

In general terms, the Department of Defense needs to preserve the special operations capacity it now has—including the full stable of elite, direct-action units—while rebuilding its conventional capacity. In some important cases, such as counterinsurgency, the training of foreign militaries, deep area knowledge, and stability operations, USSOCOM will be the standard-setting organization for the other services. Special operations forces are a vital asset in the military toolkit, but preserving their value will require the Pentagon to take a harder look at what missions they are—and are not—best suited to perform and how these complement the conventional force posture requirements outlined in this report. A failure to define the future roles of special operations forces risks creating a force of generalists rather than a sharply focused organization. The flexibility, independence, and constant training that have, for 15 years, pushed US special operations forces to the "tip of the spear" will, inevitably, become dulled by overuse.

## Missile Defenses

The value of missile defenses has always been measured in strategic rather than operational, tactical, or technical terms. One need only think of the blurry images of Patriot missiles intercepting Saddam Hussein's Scuds over Saudi Arabia in 1991 or the successes of Israel's "Iron Dome" against Hamas rockets to understand the role such systems play in the politics of war. The United States cannot afford to have its people, its forces, or its allies feel or actually be defenseless.

This is, of course, especially true in the case of nuclear or other weapons of mass destruction. America's adversaries view nuclear ballistic and cruise missiles as the most certain and most readily available form of deterrence against the US conventional forces that are most threatening to them, and thus the pace of proliferation is accelerating. Moreover, by increasing the accuracy and mobility of their large missile arsenal, the Chinese have shown a way not only to deter American intrusion but also to build anti-access and area-denial buffer zones. If the United States is to remain the guarantor of the current system of international security, it must accelerate currently existing missile defense programs while developing new and innovative systems to address and anticipate emerging threats.

In broad terms, the United States faces two distinct and different missile threats. One is the danger posed by hostile regimes that have or may be on the cusp of acquiring a relatively small number of nuclear-armed ballistic or cruise missiles to deter American action or to intimidate neighboring US allies; North Korea and Iran are the paradigmatic examples. This is a lamentably familiar problem, not only one apparent for decades but also one that has yet to be adequately solved, in good measure because of constant political and program

changes. The Obama administration has exacerbated this problem to an unprecedented degree. It inherited a well-developed, if limited, program from its predecessors that would have installed existing ground-based interceptors and a powerful radar in Central Europe—extending the success of the crash program initiated after 9/11—as a way to protect both Europe and the United States against intermediate-range ballistic missiles and intercontinental ballistic missiles (ICBMs) from the Middle East. President Obama, negotiating the "New START" treaty with Russia, terminated that effort, embarrassing the Poles and Czechs in the process by neglecting to consult with or inform them of the decision. The administration then substituted a "Phased Adaptive Approach" centered on the deployment of US Navy destroyers equipped with Aegis systems, then moving those systems permanently ashore and culminating with the development of a new version of the Standard Missile, known as the SM-3 Block IIB. That missile has now been canceled, reflecting both budget cuts and its limited ability to intercept speeding, high-flying ICBMs.

The second challenge is equally dangerous to US military strategy but qualitatively entirely different: large fleets of increasingly accurate short- and intermediate-range conventional ballistic and cruise missiles. For the Chinese, in particular, these weapons represent a form of cheap air power and strike power that can hold US expeditionary forces—both land based and at sea—at risk. The threat of salvo attacks is especially worrisome; these missiles are inexpensive. The Chinese field thousands of them and continue to produce hundreds per year, and their success will soon be replicated elsewhere; Iran is already following a similar path and will no doubt invest a good measure of the proceeds from sanctions relief in this way. Although we can find many ways to disrupt this threat, we will still need to defend airfields and ports, command posts, surface fleets, logistical nodes, and so forth—the capabilities and capacities that make the US military the only one able to protect power on a global scale. America cannot afford an anti-access problem that is operationally crippling. At the same time, current missile defense systems are insufficient to counter this salvo threat; the magazines on Aegis ships are relatively small, and a Standard Missile costs ten times as much as its Chinese-made target. Solving this problem requires a broader, systemic approach to "missile defense" as well as better, cheaper, and more effective ways to build a bullet that can hit a bullet.

Taken together, these two challenges demand a new approach to missile defense programs, accepting some risk in regard to larger-scale nuclear attacks and midcourse interception to create new capabilities against conventional barrage attacks while developing options for a potential space-based system that would allow boost-phase interception. That is, the effort of the recent past—to create a smoothly "layered" set of defenses that provide opportunities for interception at every phase of missile flight—has not been adequately responsive to the range of emerging threats. In particular, the current Aegis system and Standard Missile do not appear to be a very effective solution for midcourse intercepts or cruise missile threats.

Thus, the Defense Department should refocus its programs to build out a larger, but still limited, Ground-based Midcourse Defense system with particular focus on Ground-Based Interceptors with multiple kill vehicles. At the same time, it should fund a rapid program to replace the Aegis–Standard Missile combination with a newer and more powerful radar and either electromagnetic rail-gun or directed-energy interceptors in coordination with the revival and redesign of the Navy's *Zumwalt*-class destroyer described below. This will not only give improved fleet defense but can also be the basis for point and small-area defenses ashore. And, perhaps, it can provide improved midcourse defense; certainly the more powerful and modern radar, not constrained by the size limits of the *Arleigh Burke*–class destroyer design, can better do what the recent "Aegis ashore" effort was intended to do.

The conventional missile threat to US power projection forces—especially the US Navy and Marine Corps—should be a higher strategic priority than a marginal improvement in midcourse interception capabilities against small nuclear attacks. Building a Ground-based Midcourse Defense site on the East Coast while developing upgrades that can be introduced to improve the system's capability will provide an additional layer of defense that is both urgently needed

and within grasp. A *Zumwalt*-based fleet defense would be a marked improvement on the *Arleigh-Burke*–based Aegis, will have a potential for further growth and wider application, and would incorporate relatively mature technologies on an existing platform. With sufficient investment, it can be fielded within the medium term.

Finally, the renewed hostility of Vladimir Putin's Russia should be a reminder that the only truly existential threat to the United States is a large-scale nuclear attack. Putin has also wielded the threat to intimidate Europeans and deter the United States from responding to Russian aggression in Eastern Europe. The ultimate goal of missile defense programs has always been to counter this threat, which would require a system capable of boost-phase intercept. This would also almost certainly require a space-based platform; this, too, was once a research priority for the Department of Defense. It should be again.

## Space and Cyber Forces

Space tends to be an afterthought for American strategic planners. Despite the increasing importance of America's space posture to its ability to win decisively on the ground, at sea, and in the air, there has been relatively little public discussion since the Cold War about the role that space should play in American warfare. It should not be much of a surprise, then, that the White House's 2010 "space policy" was a mere 14 pages or that only about a third of it was dedicated to the national security implications of space policy.[23] Despite the centrality of the global positioning system and space-based communications to America's approach to warfare, space policy remains little more than an opaque backdrop to developments on the ground.

At first glance, America's space posture might seem like a solid foundation for 21st-century warfare. But on closer inspection, it is actually a patchwork system, cobbled together across public, private, and international domains with not enough thought given to improving the system's long-term viability, to mitigating its vulnerabilities, or to matching its capabilities with the future needs of the Department of Defense enterprise or the expectations of its leaders. To wit, in an effort to create redundancy within its communications infrastructure, the Department of Defense has signed bandwidth leasing agreements with a number of foreign satellite operators, many of whom have ties to America's potential space rivals, such as China. We can, and must, do better. The next administration should protect American national security interests in space by both maintaining existing space infrastructure and implementing a plan that will extend American space superiority into the future.

In this regard, the next administration should first increase and protect funding to programs that enhance the survivability of the current constellation. As the Federation of American Scientists describes, the miniaturization of satellites has made the space realm accessible to an increasing number of actors across the world.[24] Increased access without countermeasures leads to increased vulnerabilities, especially with respect to space-based antisatellite technology and collisions. Meanwhile, on the ground, the next administration should seek opportunities to maximize the utility of our current constellation by increasing redundancies in ground stations and bolstering capacity—whether automated or simply adding manpower—to analyze and process the vast amounts of data relayed to earth from space each day. Aside from personnel questions, many of the technologies necessary to mitigate vulnerabilities and increase analytic capacity are already in the research pipeline, but the unpredictable budget environment of the past several years has stymied their development.

Second, the next administration should define a robust, multidecade space strategy and ensure that research and operations funding is aligned to support defined goals. Because the fielding times for space technology often span decades, not years, a new administration must make decisions that will protect America's edge in space-based positioning, in deployment technologies, and in remote sensing. Specific steps to take include a renewed commitment to the GPS Block III program, the development of a new national rocket engine, and enhancements to the military's signals and imagery intelligence satellite constellation. Acquisition reforms, discussed elsewhere in this paper, will help smooth over many of the problems that have stood in

the way of fielding these systems in the past, but the most effective reform would be a national commitment to sustained funding for space-related research and development and operations budgets. Because of the long-term and contractor-reliant nature of aerospace research, even small interruptions in funding can lead to major research setbacks. America should, where appropriate, leverage the comparative advantages of allies toward common defense goals in the space realm, but such efforts must be viewed as supplements to, not replacements for, America's own efforts.

An even larger challenge for the United States is to become the guarantor of an international system in the realm of cyberspace. The Internet—and computer-and-information networks more broadly speaking—is obviously an important component in modern communications, commerce, and military organizations. It is not only a realm that enables other forms of economics, politics, and military affairs, but it is itself an area of strategic and tactical competition. Providing safe and secure cyberdefenses for Americans and our allies, while also deterring the cyber activities of our adversaries, is a critical—perhaps *the* critical—role for the Defense Department in the coming era. Conversely, if the United States cannot broadly secure the Internet and similar networks, then America's prospects for continued geopolitical leadership, and the general peace, liberty, and prosperity that American leadership has created, will be significantly diminished. Indeed, the direct and second-order effects flowing from the revelations of Edward Snowden render an important measure of diminished confidence in the United States.

America has yet to devise an effective strategy for how it will achieve and maintain security, let alone military supremacy or superiority, in cyberspace. For example, the White House's two landmark cyberspace strategy documents, the *International Strategy for Cyberspace* and the *Cyberspace Policy Review*, catalogue the vulnerabilities that threaten information security and discuss approaches to defend against cyberattacks at great length, yet the Pentagon's chief weapons tester recently found that almost every American weapons system remains vulnerable to cyberattacks.[25] The recent revelation by the Office of Personnel Management that millions of personnel records were breached by an attack originating in China underscores the breadth and depth of the nation's cybersecurity vulnerabilities. A litany of weaknesses is no substitute for strategy, capacity, or capability.

We should not be surprised by the recent revelations, however. The disclosure that hackers stole designs to the F-35 was met with little more than a shrug from the White House. Similar to the F-35 data loss, huge amounts of information have been stolen from various defense contractors, thereby increasing the knowledge of adversaries and jeopardizing our technological advantage. The less serious but similarly embarrassing hacking of US Central Command's Twitter account by Islamic extremists also failed to generate swift or substantial action. The US government has not created, much less enforced, consequences that are commensurate with the recent offenses committed by its adversaries in cyberspace. Quite simply, it has not developed a coherent way to think about cyber power. It speaks volumes that the greatest reaction from the current administration resulted from the North Korean attack on the Sony Corporation, not the Office of Personnel Management breach: an attack on the entertainment industry seemingly generates more concern than a multitude of attacks affecting our national security.

Secretary of Defense Ashton Carter recently unveiled the Pentagon's updated cyberspace strategy, *The DoD Cyber Strategy*, but despite its name, the report reads more like a policy document than a directive that links means, ways, and ends.[26] Any strategy for cyberspace must originate from the goals stated at the beginning of this report: our purpose is to secure the use of the Internet and other such communications-and-computer networks for ourselves and our allies and to possess the capacity to deter or attack adversaries' abilities—or the ability of international "cyber criminals" or "cyber pirates"—to obstruct our commerce, disrupt our politics, or diminish our military power. In other words, cyberthreats originate from other humans, in the realm of international politics, not in the realm of science fiction. Just as the seas and skies are safest when there is a favorable geopolitical balance across Eurasia, so will cyberspace be secure when other states—who have the greatest capacity to disrupt the free flow of commerce and data—are

supportive of a liberal international order. To paraphrase and update Clausewitz: cyberwar is a continuation of politics by electronic means.

In sum, the United States needs to think about waging war not only *in* cyberspace but *for* cyberspace. It is increasingly apparent that there is a clear and present danger to the nation's welfare and security from cyberattacks. Defensive measures alone will ultimately be insufficient to address the hostile actions of foreign governments and organizations. Incorporating offensive measures into a cyberspace strategy is analogous to, and no less important than, planning for conventional military campaigns. Just as constructing bunkers and securing ports do little to enhance a country's ability to project its power, current efforts to secure cyberspace do little to create effective deterrents and offensive options that would constrain or dissuade malicious actors from attacking American interests. Securing cyberspace will require defining rules of engagement in the cyber realm and clearly communicating and, when necessary, enforcing consequences for those who break the rules at every level of the escalation ladder. Declaratory policy is absolutely essential in this domain that often allows anonymity and freedom of action to the talented actor who may or may not have state sponsorship.

Finally, although imagining a "bottom-up" force-planning construct in the cyber realm is beyond the scope of this report, the character of a proper construct can be inferred. It will require a constant and changing assessment of "how much is enough," but the consequences of strategic surprise—discovering how much is not enough—could be devastating.

## The Armed Services

For the United States to rebuild the three-theater capacity, it needs to sustain its position of global leadership, but it must first rebuild the institutions of its military services. It is past time for a fundamental review of the 1986 Goldwater Nichols Act.[27] To be sure, the law's creation of joint commands has unified war-fighting efforts. Nevertheless, by removing the service chiefs of staff from the chain of command, subordinating the military services to the chairman of the Joint Chiefs of Staff, enlarging and empowering both the Joint Staff and the Office of the Secretary of Defense, and giving additional institutional and budget-making clout to the regional combatant commanders, the law severed the link between current operations, war fighting, and the raising, training, and equipping of the force. In combination with the steady decline in resources, the result has been nothing short of catastrophic: the services have been whipsawed between, on the one hand, the immediate needs of current operations and, on the other hand, the diffuse direction to "transform" themselves or come up with undefined capabilities to "offset" investments made by adversaries.

Stronger service institutions would better serve American interests in two important ways. To begin with, the US military must project power not only across the global "commons" but onto key parts of the Eurasian landmass if we are to maintain a favorable geopolitical balance; this is the distinguishing feature of the world America made in the 20th century. Second, competition among the services—for missions and for resources, for example—is the key to innovation. It is, perhaps, no accident that the ironclad "jointness" of the last 30 years has coincided with failed attempts at "transformation." Had Goldwater-Nichols been the law of the land in the 1930s, the Marines might never have conducted experiments in amphibious warfare. Moreover, it is telling that the absence of Goldwater-Nichols did not inhibit joint efforts, such as the development of the Army and Air Force "AirLand Battle" doctrine.

Vibrant service institutions rest on retaining the ability to raise, train, and equip forces with unique, "domain-centric" capabilities and capacities. Indeed, in an era where success in the realm of cyberwarfare may be the first order of business, a case can be made for a separate cyber service. Ironically, many of the sinews of service power—be they installations, service-specific schools and staffs, or narrowly tailored kinds of units and weapons—are frequent targets of centralizing "reformers" who value bureaucratic or budgetary efficiencies over combat effectiveness. Further cuts to service infrastructure will also foreclose the ability to mobilize reserve component forces or expand the

services in ways that the strategy outlined above would demand; indeed, the challenges faced in increasing the size of the Army to meet the demands of the Iraq surge should serve as a warning.

Finally, the American military needs more interservice competition, not less; this is something approaching a fundamental truth, but the value of strategic pluralism is heightened by the uncertainties and complexities of the 21st century. Beyond the need to have many tactical and operational tools at hand, building strong service cultures fosters a richer and more diverse discussion of the nature of war and serves as a check on the American propensity to rely too heavily on technology. As much as a new administration needs to put more forces in the field and modernize weapons systems, its greatest task may be to rebuild the service institutional capacities that are essential for sustaining the breadth and depth of military leadership global power demands.

## The "Defense Industrial Complex"

Departing office in 1961, President Dwight Eisenhower warned against "the acquisition of unwanted influence" by America's new "military-industrial complex."[28] At that time, the defense industry was an exponentially larger proportion of the economy than it is now. Back then, defense spending consumed about 8 percent of GDP; defense procurement alone accounted for more than 2 percent of US economic output. More than a dozen firms competed to build complex fixed-wing military aircraft.

Today the defense-industrial "complex" is a ghost of its Eisenhower-era self. The amount requested for the national defense—defined as budget function 050—in 2016 is less than 3 percent of GDP; procurement will account for less than six-tenths of 1 percent. Today there are but three defense airplane makers. By contrast, the World Health Organization estimates US health care spending at 17.1 percent of GDP, and the Patient Protection and Affordable Care Act attests to that industry's political influence.[29] The market capitalization of Lockheed Martin, the largest defense prime contractor, is less than one-tenth that of Apple.

Not only is the US defense industry a smaller slice of the overall economy, but it has also become a highly concentrated market. In 1991, at the end of the Cold War, the top 10 defense companies represented less than 40 percent of the total revenue of the top 100; by 2000 they accounted for about 60 percent. Moreover, despite an aggressive move by the Pentagon to rationalize the industry in the early 1990s (an event dubbed "the Last Supper" for its effect on the industry), there probably are too many large firms for the current budget to sustain; this is especially true in the shipbuilding sector. To keep two nuclear submarine yards in business, the Navy builds parts of its *Virginia*-class attack submarine at General Dynamics' Electric Boat division in Connecticut and other parts at Huntington Ingalls' Newport News Shipbuilding; the two yards take turns building the reactors that power the subs and take turns doing the final assembly. The verdict from the financial sector is likewise bearish. After a post-9/11 spike, investors have driven industry stock prices down to a multiple-of-earnings low similar to the 1990s—one of the problems that led to the Last Supper.

Unfortunately, a further consolidation and restructuring of the industry would all but eliminate competition. For example, two industry teams are competing to develop the Air Force's new bomber. One team is led by Northrop Grumman, which built the B-2—the last of which was delivered two decades ago—and the other by Boeing in conjunction with Lockheed Martin. Boeing already is under contract to build the KC-46 tanker (and its prime business is, of course, commercial aircraft), while Lockheed is the prime contractor for the F-35. If Northrop Grumman loses the competition, neither its corporate leadership nor its shareholders will want to retain the management or aircraft design expertise—and costs—without a program to support them.

It is up to the government to manage the defense industry. It is anything but an open market, and the politicization of the market is a complex global phenomenon. The ability to field the fifth-generation F-35 fighter not only for US forces but also for multiple allies may create a business and management nightmare but is a tremendous strategic accomplishment.

And because the industry is privately financed, the government needs to allow defense companies to remain reasonably profitable. Previous defense reviews have addressed the issue only indirectly, but the incoming administration ought to devise a defense-industry equivalent of the military force-sizing constructs that have been at the core of previous defense reviews. Just as the United States needs a three-theater capacity in its military forces, so too does it need a defense manufacturing capacity—both in scale and scope—to equip such forces.

## How Much Is Enough?

The analysis above is no more than an attempt to estimate an appropriate measuring stick for sizing US military capacity, a way to frame the correct question—"How would we know how much is enough?"—rather than provide detailed answers. The defense reviews of the post–Cold War period have wandered ever further from this first-order question, either diverting themselves into a morass of process—such as the process of "defense transformation"—or beginning first with technological capabilities in the abstract. Only after addressing the how-much question can we ask what kinds of forces we need.

# 6

# Capabilities

Even as the size of America's military has been deeply cut over the past generation, so too have the US armed forces lost the tremendous technological advantages they once enjoyed. If the 1991 Gulf War revealed the superiority conveyed by the many investments of the Reagan years, so may the next war demonstrate the consequences of the failures to substantially modernize the force since then.

Just as the traditional strategy and the three-theater force posture advocated in this report will require a significant expansion of the current US military, it will equally require accelerating the pace of current procurements, rapid engineering and fielding of new systems with mature designs and technologies, and selected investments in innovative technologies that hold promise to restore the kinds of advantages American forces have, until lately, enjoyed. In sum, this strategy is a 180-degree reversal of the Obama administration's "offset" approach or the "skip-a-generation" form of "transformation" originally championed by Donald Rumsfeld at the outset of the Bush administration. Given the urgent need to reassert American leadership and rebuild US military power, the Department of Defense must buy what it can, build what is possible, and only then seek "game-changing" innovations.

What follows in this chapter is an exposition of the operational capabilities that US forces must possess to support the strategy and posture discussed above as well as an analysis of current programs and mature and rapidly emerging technologies that are ripe for procurement, development, and focused research.

## Nuclear Forces

As argued in the preceding chapter of this report, a robust nuclear deterrent, based on the traditional "triad" of land-based and submarine-launched missiles and long-range bombers, supplemented by tactical aircraft capable of carrying shorter-range weapons, takes on a renewed relevance in the context of a three-theater reassertion of American geopolitical leadership. In a multipolar nuclear world, the nature and needs of a credible deterrent may change significantly from one theater to another and from one nuclear challenger to another.

The Obama administration has resolutely ignored these shifting realities. Because its overriding goal has been to reduce US nuclear forces and ultimately to eliminate them, it has clung with increasing desperation to the Cold War notion that America's deterrent should be determined solely in response to Russia; this was the logic of the "New START" treaty of 2010 and the president's suggestion—meant to be private but caught on an open microphone—to Russian president Dmitri Medvedev that after his "last election" in 2012 he would have "more flexibility" to offer concessions on such issues as missile defense as part of further negotiations on nuclear reductions.[30]

Alas for the White House, Russia's aggression in Eastern Europe has diminished its utility as a foil for American disarmament. At the same time, proliferation elsewhere has not proved to be a spur to rethink the requirements for US nuclear forces, to make *them* more flexible. Most striking of all is the lack of discussion about the nuclear capabilities needed to deter Iran, which can and likely will, even if it were to observe the terms of the recently negotiated deal on its nuclear program, eventually develop atomic weapons. A 10-year delay—the most optimistic outcome of the framework negotiations—is almost certainly a shorter period of time than it would take the United States to tailor an Iran-focused nuclear deterrent. If the traditional logic of deterrence applies to Iran—which itself may be an uncertain proposition—the United States would need to

field different weapons and adjust its force-deployment patterns. Such changes would be even more urgent if the United States were to "extend" deterrence to America's strategic partners in the Middle East. Moreover, the Obama administration, like its predecessors, has shied away from discussions of the nuclear balance with China, even as uncertainties about Beijing's capabilities and ambitions grow. Despite the fact that the People's Republic adds hundreds of nuclear-capable missiles to its inventory each year; keeps a massive amount of fissile material available to build many more warheads than it is now thought to possess; is demonstrating the ability to field highly accurate, multiple-warhead missiles; and is lavishing particular attention and investment on newer and quieter ocean-going, nuclear-powered ballistic missile submarines, US nuclear programs and doctrine have not changed.

*A Kennedy-style nuclear posture would mark a reversal of course from the Obama approach and would be a significant departure from post–Cold War nuclear strategy more broadly.*

The conundrum for the United States has been well defined by Clark Murdock, a senior adviser at the Center for Strategic and International Studies and a former Air Force official. "U.S. forces were designed for a global conflict involving the exchange of thousands of high-yield weapons, not limited exchanges of low-yield weapons," he writes. "Since most U.S. nuclear response options are large, 'dirty' and inflict significant collateral damage, the United States might be 'self-deterred' and not respond 'in-kind' to discriminate nuclear attacks. . . . The United States needs discriminate nuclear options at all rungs of the nuclear escalation ladder to make that option unattractive as well."[31]

From this basic insight, Murdock recommends a nuclear strategy of "measured response," an intentional echo of the "flexible response" approach adapted by the Kennedy administration when it turned away from the Eisenhower era of "massive retaliation"—when the United States first started to sever the links between geopolitics and its nuclear arsenal. Although Murdock does not follow the three-theater construct in this report, his approach to nuclear force planning is one that, in general, can be applied. His force-sizing "guidelines" are to "maintain rough parity with Russia, maintain nuclear superiority over China, maintain sufficient capability to cope simultaneously with nuclear-armed 'regional rogues'"—such as North Korea, Pakistan, and, particularly, Iran—and "maintain a stockpile which is enabled by a responsive [nuclear] infrastructure." He also calls for forward-deployed nuclear forces.

A Kennedy-style nuclear posture would, to put it mildly, mark a reversal of course from the Obama approach and would be a significant departure from post–Cold War nuclear strategy more broadly. It would also give a new direction for defense nuclear programs, with an emphasis on increased diversity of nuclear options. Although both a "Russia-parity" and a "superiority-over-China" force would continue to resemble the legacy force, with an emphasis on submarine-launched ballistic missiles and ICBMs, the "rogue-response" force would have to be more discriminate, more flexible, and more obviously forward deployed. The demands of a very visible "extended deterrence force," as Murdock dubs it, would be primarily tailored to reassure US partners in the Middle East. The goal is not merely to offset fears of an Iranian bomb but also to lessen the incentive for the Saudis, Turks, Egyptians, and others to acquire their own nukes, either by domestic development or from Pakistan. The purpose is to "couple" a credible—and clearly present—US theater-level nuclear capability to the larger questions of regional security and the balance of power.

As during the late Cold War, when the Reagan administration pushed for the deployment of Pershing II missiles in Europe to offset Soviet theater nuclear forces, a US extended deterrence force for the Middle East cannot rely on the "virtual" threat of submarine-launched missiles or on US-based bombers or ICBMs. As Murdock points out, "Dual-capable F-35As (based on land) and F-35Cs (based on carriers) would provide visible manifestations of US extended deterrence and allied [trust]." In addition, because this extended deterrence

force must be credible as a "counter-force" deterrent—that is, one not meant to destroy cities but to eliminate military forces and nuclear facilities—these in-theater platforms must be equipped with smaller, lower-yield warheads, fitted either to gravity bombs or on a small cruise missile that the F-35 could carry.

This extended deterrence force would be a distinguishing capability of the three-theater force described in this paper and thus should be the foremost priority for the modernization of US nuclear forces. Developing an in-theater nuclear platform would be the least expensive element in the overall nuclear budget, which is already slated to top $125 billion over the next 10 years and will surely remain high as more of the US nuclear force needs replacing. It is beyond the scope of this paper to predict the costs of developing the smaller warheads and bombs needed, but these tasks work with existing technologies; they are not science projects.

A second and still relatively inexpensive step—and one that would also increase the flexibility of the US nuclear posture overall—is to ensure that the nuclear-capable version of the LRSB is built in a timely fashion. The preceding chapters of this report have shown the value of this program as a conventional platform, and that will remain its primary justification. But the need for a new nuclear-capable bomber is pressing. In the past two decades, arms-control and budgetary constraints, together with the development of GPS- and precision-guided missiles, have diminished the role of long-range bombers as nuclear delivery vehicles. Long-range aircraft have also been pressed to fill the gaps created by the retirement of the F-111 and the failure to build a theater-range replacement. As a result, the B-1 no longer has a nuclear role at all, and the B-52 can be made nuclear capable but cannot survive in a modern air-defense environment, leaving the tiny B-2 fleet as the only true and remaining nuclear aircraft. A nuclear-capable LRSB would promptly fill that gap and build the inventory beyond just the 20-aircraft B-2 lineup. Along with a nuclear-capable F-35, the LRSB program is the only option for improving and adapting US nuclear posture within the near term or medium term, and thus it is critical to the continued flexibility of the nuclear triad that America's front-line bomber continue to be capable of at least small-scale nuclear missions.

The next step toward revitalizing the nuclear force is the biggest and most expensive one: replacing the *Ohio*-class fleet of ballistic missile submarines. The Navy has already extended the life of these boats beyond their planned service life but must begin to retire the oldest ones, which were built in the late 1970s, within the next 15 years. The Navy has initiated a design program for 12 new ballistic missile subs that would result in procurement from 2021 to 2035, with the rate hitting one per year in the decade from 2026 to 2035. Moreover, the Navy is in the process of extending the life of the Trident D-5 missile, the main armament of the *Ohio* class, thus ensuring that any replacement sub must be designed for the Trident as well.

Although the submarine force remains the most survivable leg of the triad, the combination of arms-control limitations, budget limitations, and advancing submarine and antisubmarine warfare technologies is changing that equation to some degree. Under the New START treaty, the United States must declare the total number of deployed missiles and bombers; of warheads deployed on ICBMs, SLBMs, and heavy bombers; and of launchers, both deployed and nondeployed. In practice this means that submarines make up a larger proportion of a smaller triad force. It also means that the number of submarines in total and the number at sea are diminishing; a decade ago, the United States had 18 *Ohio*-class boats, but the fleet of replacement boats will number just 12. The survivability, and hence deterrent value, of the submarine-launched ballistic missile force would be increased substantially if the fleet were larger and the number of delivery vehicles per boat were smaller; putting fewer eggs in more baskets would be better. Such a plan would imitate the very successful "de-MIRVing" of the Minuteman III ICBM fleet—which was designed to carry three warheads but now carries just one. A larger and more dispersed fleet would also be a better deterrent in a multipolar nuclear environment.

Increasing the size of the fleet would, however, be very expensive, and funding for the currently planned *Ohio*-class replacement program—likely to exceed $100 billion—is far from secure. The Navy has already made plain that its shipbuilding budget cannot accommodate that cost. Navy supporters in Congress have suggested creating a "Sea-Based Deterrence Fund,"

arguing that the ballistic missile submarine force is a "national asset," but reordering the budgetary ledger does not create new funding; the problem is the lack of money, not what account holds the money. In sum, a new administration will be forced to increase overall defense spending to begin the long process of modernizing the ballistic missile submarine fleet—at a cost that will make this program the second most expensive weapons program after the F-35. Before embarking on that huge investment, it should demand that the Navy investigate alternatives that would increase fleet size back to at least 18 boats.

*Reordering the budgetary ledger does not create new funding; the problem is the lack of money, not what account holds the money.*

The Air Force continues to take an incremental approach to extending the life of the Minuteman III, first fielded in the early 1970s. From the rocket motors and fuel to the guidance system to the reentry vehicles, the Minuteman has been and continues to be constantly upgraded. These efforts, however, reflect the low priority that the Air Force accords to the ICBM deterrent. There is a real danger that continued sequestration-level defense budgets would exacerbate this condition to the point where the Pentagon would eliminate the land-based missile force; a former deputy chairman of the Joint Chiefs of Staff, Marine Corps General James "Hoss" Cartwright, has repeatedly recommended doing so.[32] In fact, developing a nuclear force for the future may demand renewed investment in and innovative thinking about the land-based leg of the triad.

Land-based ICBMs formed the largest component of both US and Soviet arsenals during the height of the Cold War, mostly because they were relatively inexpensive. Still, for both budgetary and domestic political reasons, the United States, in contrast to the Russians, chose not to field mobile ICBMs; this lack of interest has continued even as the value of mobile missile launchers—and the costs of dealing with such threats as demonstrated in the infamous "Scud Hunt" of the First Gulf War—has been proved repeatedly. Furthermore, given the costs of replacing the *Ohio*-class subs, a new administration should consider an accelerated "Minuteman replacement" program, not simply putting a new missile in current silos but building the kind of smaller and more mobile one-warhead system that would improve the utility and the deterrent value of this leg of the triad. Although such a move would unquestionably cause domestic political debate—and not be as inexpensive as continuing to refurbish the Minuteman fleet—the strategic value of a mobile ICBM force in a multipolar nuclear world deserves serious consideration.

Finally, as indicated above, the United States must invest in its nuclear infrastructure, particularly with a view toward modernizing and diversifying the range of warheads in its inventory. The two principal US nuclear warheads, the W76 and W88 designs, are both old and incredibly destructive weapons, at about 100 and 475 kilotons yield, respectively—the W88 is about 30 times more destructive than the bombs used against Japan in World War II. The sheer power of these weapons makes them, to some degree, self-deterring devices. Conversely, not even the most powerful conventional munitions can be completely effective against some modern targets, such as the deep underground facilities that house much of Iran's nuclear program. Weapons that are increasingly militarily irrelevant now serve a diminishing strategic purpose.

Unfortunately, the bureaucratic, scientific, and engineering structures created to build and ensure the safety and relevance of the Cold War nuclear force have become increasingly decrepit. One of the last steps taken by former defense secretary Chuck Hagel was an audit of these structures; Hagel, who often advocated compete nuclear disarmament, concluded that "a consistent lack of investment and support for our nuclear forces over far too many years has left us with too little margin to cope with mounting stresses."[33] The current US nuclear infrastructure has difficulty maintaining today's deterrent and needs, in Hagel's judgment, a further investment of $10 billion to sustain operations, let alone build the new systems that would be both a safer and better deterrent.

Thus the requirements for reinvesting in nuclear forces mirror the need for conventional force improvements. The current systems are old, current operations have been underfunded, and the prospects for modernization are uncertain and expensive. Yet an effective and credible nuclear deterrent forms the cornerstone of American military strategy and is the foundation for the three-theater construct enunciated in this paper. The next president will face the consequences of decades of nuclear neglect and must take the steps necessary both to reshape US nuclear forces for the near term and to embark on the program of long-term modernization necessary to keep them relevant in a new nuclear world.

## Air Forces

The US Air Force must retain its fully global posture. Although dominant air power is by itself rarely sufficient to America's traditional national security purposes, it is always necessary; just as the US Navy must "rules the waves," so must the Air Force rule the skies. The challenge for the Air Force is to develop a breadth of capabilities relevant to conflicts in increasingly diverse theaters, as outlined earlier in this report. The service must retain and improve on the kinds of persistent reconnaissance, surveillance, and precision-strike capabilities it cobbled together during the post-9/11 conflicts. At the same time, it must develop new technologies needed to conduct large and powerful air campaigns in an increasingly contested air-defense threat environment. As if those two divergent tasks were not enough, the Air Force must also preserve and enhance the ability to operate in near-earth space and take a principal role in the military's efforts in cyberspace.

Since 9/11, no military service has undergone more wrenching change than the Air Force. Its innovative approach to the invasion of Afghanistan—combining long-range bombing sorties and precision munitions with special operations forces riding the ponies of Afghan militias—and its final act of shock-and-awe in Baghdad gave way to endless combat air patrols and the introduction of large fleets of unmanned aerial vehicles during the irregular campaigns that followed. These were the best of times, in which many of the long-held ambitions of air-power theorists were realized. But they were also the worst of times, especially as the service leadership crossed swords with Robert Gates when he was secretary of defense. Restoring the Air Force to health will require steady guidance as well as increased investment.

The most obvious and painful changes of the last decade occurred as the Air Force adapted to irregular warfare in the Middle East, principally through the service's wholesale—if incomplete—embrace of Unmanned Aerial Systems (UAS). In mid-2014, the Air Force finally reached the goal set by former secretary Gates of being able to provide 65 UAS combat air patrols; each patrol requires four aircraft, and the fleet is apportioned equally between the MQ-1 Predator and the larger MQ-9 Reaper, the two workhorses of the past decade. The total Predator/Reaper fleet is about 300 aircraft, and the balance is shifting toward the Reaper. Facing severe budget cuts and an overtaxed workforce, the Air Force unilaterally cut five combat air patrols despite a continued growth in demand for drones by combatant commanders. The Air Force has also had a chronic shortage of UAS pilots, frequently assigning pilots from training units to meet immediate operational demands.

In long-running irregular wars and close support missions flown over relatively benign airspace, UAS have become an attractive and low-cost complement and alternative to traditional fixed-wing strike aircraft such as the F-15E, F-16C, and A-10C. Tactical strike aircraft still have a role to play in providing additional and more flexible support—especially the F-15E, a newer and larger airframe than the aging F-15C, which was in any case designed as a true, air-to-air fighter capable of carrying larger payloads. For these support missions in largely uncontested skies, the Air Force would be better served by maintaining and upgrading its current "small war" UAS fleet, gradually shifting the mix more toward the Reaper while also developing new sensors and weapons for that aircraft, accelerating its plans to upgrade more than 200 of its hardy F-15Es, and divesting itself of the A-10 and older F-16Cs. But, as with the Navy's F/A-18s, the best solution is for the US Army to rebuild its artillery arm as the most efficient and effective means of fire support.

The final key to the support-to-ground-operations puzzle will come from the rapid fielding and integration of the F-35, which will have the ability to be a stalker of targets for a multitude of platforms: the F-15E, unmanned platforms, and even Army aviation and direct fire support. Such a network, in addition to being less expensive, would be a more flexible, sustainable, and effective way to provide intelligence, surveillance, reconnaissance, and responsive fire support to ground formations in complex hybrid war environments. The Air Force seems to understand this, but it has failed utterly to explain its case to Congress or to the public more broadly. Aficionados of the A-10, in particular, have been able to portray themselves as the defenders of the close air-support mission and paint the Air Force as little concerned with supporting grunts in close combat. Alas, this is actually delaying the effort to create a better approach to the mission, especially in the context of long-running irregular and hybrid operations. The Air Force's steady-state requirements have grown far faster than the service can keep up with, particularly in the airlift and intelligence, surveillance, and reconnaissance missions. Even as the Air Force shrinks today, it has been called on to deploy several extra squadrons to Europe, prosecute an air war in the Middle East, and support an ever-growing list of exercises the world over. Worse yet, the Air Force would be strained to meet the need for fighters in any true contest for air superiority today. Many of these problems are exacerbated by the delayed procurement of the F-35, which is designed to replace more than a half-dozen aircraft.

The importance of the F-35 program is made clearer when considering the need to rebuild the Air Force's capability to conduct large-scale air campaigns. As argued in the previous chapter, these campaigns have been the signature form of American military power since the end of the Cold War, and the proliferation of modern air defenses and other forms of anti-access and area-denial technologies make the outcomes of such campaigns less certain and raise their costs. The termination of the F-22 and delays in fielding the F-35 have left the Air Force—and, indeed, the US military as a whole—without the fifth-generation tactical aircraft needed for both air superiority and sustained strike efforts. We must restart the F-22 program and bring the F-35 production line to economic rates of production. Given the F-35's role as a "coalition airplane," that is, one to be operated by many of America's most important allies, the Air Force must be given the resources to move immediately to serial production of the Lightning.

*The final key to the support-to-ground-operations puzzle will come from the rapid fielding and integration of the F-35.*

The Joint Strike Fighter was not designed merely to replace the fourth generation of multirole combat aircraft but to change the way large-scale air campaigns would be conducted. Rather than choreographing an intricate ballet of single-purpose combat aircraft as per the air-war phase of the First Gulf War, the F-35 fleet will enable a new concept of air operations resembling a swarm of stealthy and sustainable "nodes" in a very flexible "combat cloud." The large-scale introduction of unmanned aerial systems will, in fact, make the F-35 and its advanced electronic systems and software even more valuable, not least because of the upgradable nature of the plane's electronic warfare and communications systems. It is only a modest stretch to observe that what smartphones and mobile computing devices have become to civilian endeavors, the F-35 will become for the US military.

Alas, the program has been managed as though it were a traditional combat aircraft, a fancier version of the F-16 or F/A-18. Whereas software and computer companies have learned to release "beta" versions of their wares—knowingly imperfect but intentionally improvable products—the development of the F-35 has been slowed at every stage by intrusive bureaucracy and insufficient funding. Indeed, for such an ambitious project not only in scale but also in terms of the "concurrent" design, development, and procurement approach, the F-35 has had relatively few flaws, and addressing them has been inexpensive relative to

the overall investment made in the program by the US military. The F-35 has been ready to fly at least since 2011, and with every delay and decrement of funding, the Defense Department squanders not only its huge past investments—tens of billions of dollars—but also future advantages.

Recent years have been a terrible waste in this regard. When the BCA came into effect, the Air Force, Navy, and Marine Corps had already purchased 175 F-35s; the last Gates budget proposed for fiscal year 2012 would have added another 251 planes through FY2016, bringing the total to 426—including a buy of 108 aircraft in FY2016. Under the BCA, F-35 purchases were but 29 in FY2014, 38 this year, and—under the "dead on arrival" budget proposed by President Obama—just 57 for FY2016; the total "BCA F-35 fleet" for this time period will be but 274 aircraft. Given that the F-35 production line is scaled to build 300 planes per year, the per-plane cost will remain commensurately high. Perversely, the Pentagon is paying extra to slow its modernization.

Simply increasing the F-35 production rate would be the most effective single source of cost savings for the Defense Department. This reality resulted in the Pentagon's 2015 proposal to use block buy contracting to purchase 450 F-35s over the next three years, a small number of which would be destined for international program partners. Achieving economies of scale in the F-35 program is also a key to immediately improving the capabilities of the Air Force, the Navy, and, especially, the Marine Corps. By FY2017, the Air Force should be buying 70 F-35s, the number projected in FY2012, as opposed to the current plan to purchase 48, and the Marine Corps should be buying at least 12 of the F-35B short take-off and vertical landing (STOVL) variant. The F-35B's STOVL capability is exceptionally useful in East Asia, where it could be dispersed and forward-stationed across the region, operating from austere locations hosting less-than-ideal runways. The forward-operating bases the Pentagon plans to establish throughout the Asia-Pacific region, as well as combined, in-theater repair depots, will compound the effectiveness of F-35Bs and enhance the resilience of the other variants. Indeed, the US Air Force should consider acquiring a fleet of approximately 200 F-35Bs over the next two Future Years Defense Programs to disperse and operate in tandem with forward-operating locations throughout the Pacific Command.

*Simply increasing the F-35 production rate would be the most effective single source of cost savings for the Defense Department.*

Nevertheless, simply increasing the rate of F-35 production would not sufficiently rebuild the fleet needed to reassert air superiority; as argued above, there exists a pressing need to reopen the F-22 production line. That would be an expensive proposition, but there is no available alternative; development of a sixth-generation aircraft, be it manned or unmanned, will take a decade or more. With just 187 F-22s in its inventory, the Air Force must now rely on around 200 very old F-15Cs that suffer an increasing number of catastrophic accidents, repeatedly grounding the fleet for inspection. The other alternative is the remaining fleet of F-16Cs, of which there are approximately 800. Although the F-16 has proved its worth for decades and has been adopted in ways never imagined, it, too, is a 1970s design: a small aircraft loaded to its limits with electronics and weapons and lacking stealth properties needed for survival in a modern air-defense environment. Like the F-15, the F-16 is also starting to suffer increasing structural problems that are forcing fleet groundings.

In restarting F-22 production, the Air Force should take the opportunity to upgrade the plane's electronic systems, using the systems on the F-35 to increase the Raptor's electronic warfare capabilities and its ability to network with other platforms. In addition, the Air Force should offer variants of the F-22 to Japan and Australia. It is critical that the Air Force focus solely on expanded procurement of the F-22 to ensure future air superiority. Erstwhile proposals to modify the F-22 into an intermediate-range strike platform will only distract from the air superiority mission. Furthermore, a new intermediate-range strike platform—along with ground-launched missiles and exquisite stand-off

weapons—remains wholly inadequate in ensuring the Air Force's core mission of global precision strike. For this critical mission, the Air Force must steadily fund a new family of optionally manned low-observable long-range bombers. The smaller members of the LRSB "family" could be made available to allies such as Australia, which has a need for a theater-range strike aircraft.

***Even though long-range capabilities are not themselves sufficient, they are vitally necessary.***

Building a new bomber has been an Air Force priority for the better part of a decade. The service has found creative ways to extend the life and the utility of the 1950s-era B-52 and the 1970s-vintage B-1B and, somewhat miraculously, lost only one of its original 21 B-2 aircraft. Yet this still remains a very small and very old fleet of bombers. There are 76 B-52s, 63 B-1s, and 20 B-2s; the B-2 is entering its third decade of service and the *newest* B-52 was built before the 1962 Cuban Missile Crisis. Although the addition of GPS-guided bombs had made these planes much more capable than they once were—able to hit up to 80 different targets in one sortie—only the B-2 is able to survive in a contested air-defense environment. In sum, the Air Force has not only a capacity problem but also a capability gap when it comes to long-range strike.

Moreover, the need for increased operational range has been multiplied by the proliferation of anti-access and area-denial technologies and concepts of operation that put regional air bases and surface fleets increasingly at risk. The US military must rebuild the ability to deliver heavy and sustained blows at great distances, particularly in the early phases of an air campaign, both to suppress adversary forces and to allow for any follow-on, in-theater efforts. Long-range strike is both an increasingly important capability on its own and a critical enabler for the swarms of tactical aircraft that will be needed to bring any air campaign to a successful conclusion—given that the average theater-level campaign involves more than 30,000 aim points, there is no way that long-range aircraft or standoff munitions alone can achieve the volume such an effort would demand.

Even though long-range capabilities are not themselves sufficient, they are vitally necessary. After several failed programs, the Air Force is on course to field a new Long Range Strike-Bomber by the mid-2020s. And because of past program troubles, the Department of Defense has imposed a $550-million-per-plane cost cap on that aircraft. This is a mistake. To begin with, the price tag is a reflection of the Pentagon's budgetary woes—it defines the plane a constrained military thinks it might be able to afford, not necessarily the plane it needs. Second, it is almost certainly an unrealistic target; the cost cap itself excludes significant elements of the aircraft, and, unless the BCA is repealed, the Air Force will have a difficult time developing and procuring the LRSB on time and under budget. Third, the Air Force is counting on the ability to use the looser procurement rules developed after 9/11 for emergency wartime purchases, but it remains to be seen whether Congress will permit that. Finally, the LRSB seems a likely candidate to breach the so-called Nunn-McCurdy law, which automatically applies to procurements whose costs begin to exceed estimates—it is just the sort of arbitrary procurement reform that has confounded proper program management and requires repeal. Nunn-McCurdy was designed to punish the Pentagon for specific cases of poor program management, not further hamstring programs already thrown into chaos by congressional whim.

As mentioned in the previous section, the US Air Force is increasingly unable to meet its airlift requirements, exposing a severe vulnerability in global US military posture—one that would be absolutely fatal for the three-theater construct needed to sustain American geopolitical leadership. The solution is a two-step program to increase capacity and improve capability.

To begin, the C-27 program should be restarted. This aircraft would not only provide flexibility and improve the ability of all US forces to conduct sustained operations in austere conditions—in both the Middle East and Southeast Asia, for example—but also improve the military's capacity to respond to natural disasters without committing limited and more precious resources

to such missions. For example, a substantial number of C-17s were commandeered for relief efforts in Haiti in 2010, because of their ability to bring large loads into a short airfield; a swarm of C-27s might have served the same purpose and preserved the C-17 fleet for other uses. C-27s would fit exceptionally well into the Air National Guard structure.

The original C-27 buy was to be about 120 aircraft; the initial purchases were to come from Italy. (The plane is an Italian design but has been improved substantially by introducing the same cockpit, power plant, and propellers as the C-130; indeed, the C-27, officially dubbed the "Spartan," is also known as the "Baby Hercules" because it is essentially a two-engine version of the C-130.) Other short-term and relatively inexpensive ways to increase airlift capability would be to revive and restore funding for the block upgrades to the C-17 and C-130.

The larger and longer-term challenge and opportunity is to design and field a new strategic airlifter within an eight-year span. While this is driven mostly by the insatiable and growing need for long-range, large-bodied airlift, it is also time to take a big step forward in airlift capacity by capitalizing on the great strides made in composite materials, design, and other advances derived from the highly competitive commercial airline market. The construction of new editions of more traditional aircraft designs, like Boeing's 787 Dreamliner, represents a big advance, but so do new designs, such as the so-called "hybrid" or "blended" wing shape—a mix of the traditional design and a B-2–like "flying wing" contour—and the prospects for increased autonomous flight. Although such a new airlifter would be based on current technologies, taken together these advances could represent an airlift revolution. The next administration should put out tenders for such an aircraft immediately, while simultaneously restoring the C-17 production line to have the industrial capacity to surge in the interim.

What is about to happen to the fleet of large airlifters is already beginning to happen to the Air Force's refueling aircraft. Even more so than strategic airlift, aerial refueling is the linchpin of the service's global reach. Both the current tanker planes, the larger KC-10 and the medium-sized KC-135, are old designs. The KC-135, which comprises nearly 90 percent of the fleet, averages 53 years of age. A decade ago, the Air Force leadership came up with a creative and budget-stretching lease-to-buy approach to building a new medium-range tanker based on the Boeing 767, but a lethal combination of official corruption and congressional intrusion set the program back to the point that the Air Force is only now beginning to procure these KC-46s. And thanks to the Defense Department's budget shortfalls, this effort is moving at a snail's pace.

In sum, restoring the full range of capabilities the US Air Force needs requires substantial investment if it is to play the principal role it has long played in American military operations, both on its own and as a necessary enabler for the other services. Fortunately, the structure of programs still exists—the F-35 and KC-46 programs are ready to take off, the F-22 and C-17 lines can be revived in short order, and the LRSB can be ready for fielding within the span of the next administration. Thus, the Air Force, unlike the Army or Navy, does not suffer from any uncertainty as to its mission; it does not face any modernization problems that money will not fix.

## Land Forces

As indicated in the previous chapter, US land forces (that is, the US Army; Marine Corps capabilities will be discussed separately below) face a wide variety of missions in increasingly challenging operational environments. This is particularly true in the rapidly escalating and violent Persian Gulf–Levant region, and indeed that is the war the US Army must be prepared for, organized around, and equipped and trained to win.

To understand these demands, consider four kinds of scenarios, each more demanding. To begin with, the Army must be able to lead and conduct long-running, large-area stability campaigns of the sort that would be needed in northwest Africa against an opponent such as Boko Haram and similar jihadi insurgents. Such an effort would require substantial partnership efforts with local forces; these local forces need help not only with targeted raids and strikes against terrorist cells or insurgent leaders but also with efforts to build a modest level of conventional, larger-unit competence—

African forces must be able to retake a village or assault an insurgent redoubt without excessive reliance on American or other Western troops. At the same time, US help will inevitably be needed for a range of demanding tasks from reconnaissance, surveillance, and intelligence analysis to mobility, fire support, sustainment, and medical evacuation. Moreover, because these insurgent groups move easily across national borders, the United States must provide command and control and "coalition management" so that diverse and occasionally antipathetic local governments can synchronize their actions to some degree. Finally, the US commander must be able to bring substantial rapid-reaction forces to bear in a tactically decisive way.

*The Army already possesses most of the capabilities necessary for such an effort, though these are in short supply.*

Such a campaign would call on a panoply of Army forces and capabilities. Army Special Forces could supply only a fraction of the need; there would be a call for light infantry and some number of Stryker-equipped units. The need for helicopters of all sorts—scout, attack, and both large and small utility aircraft—would be great, as would the demand for unmanned systems. Yet the logistical and headquarters burdens would be greater still; this is inherently a manpower-intensive mission, especially for higher-grade noncommissioned officers and staff officers devoted to building "country teams" in many capitals and regions.

The Army already possesses most of the capabilities necessary for such an effort, though these are in short supply. For example, CH-47 Chinook medium-lift helicopters would be in high demand for their range, their engine power (to sustain performance in a hot, harsh environment), and their cargo capacity; the Army might also reconsider the need to buy the V-22 Osprey tilt-rotor plane. This sort of wide-area mission is also a strong argument to accelerate the Army's programs to field a new, lighter-armed scout chopper. The Army should also examine ways to expand the use of unmanned systems in conjunction with manned helicopters to increase the area that can be monitored and add "off-board" firepower or even cargo-carrying capability. The service will also need eased and expanded procurement authorities to acquire smaller amounts of mission-specific equipment.

A second and all-too-familiar force-shaping scenario for the Army is a long-term stability campaign. Unfortunately, the model for such efforts is likely to be more like Iraq in 2006 than 2009 or even 2003; conditions in the region have become increasingly violent, and the United States—if it is to intervene with any effect—must accept that it will be stepping into the middle of a larger struggle for power between a loose confederation of Sunni powers from Turkey to Egypt to Saudi Arabia (and possibly even including Pakistan) and Iran and its proxies. It will take years of effort simply to reestablish that US forces constitute—to use Bing West's raw but apt term—the "strongest tribe," let alone the kind of trusted broker that they had become prior to the withdrawal from Iraq. In sum, the kind of aggressive patrolling that marked the early years of the Iraq "surge" is likely to be required.

While dismounted infantry operations would be key to establishing security and stability, foot patrols would have to be closely supported by armored units, aviation, and precise indirect fires. In urban terrain—the most frequent setting—a plethora of unmanned air and ground systems will be needed to multiply the capabilities of what will inevitably be a small force carrying out traditionally manpower-intensive missions; a small force cannot sustain the levels of casualties often associated with operations in cities. Furthermore, as the experience of the post-9/11 wars makes plain, these battlefields demand constant technological innovation; jihadists and other irregular forces in the region are nothing if not clever, as the ever-changing use of improvised explosives indicates. The Army will need to retain the kind of rapid acquisition authorities it has been granted.

Nonetheless, the Army must adjust its traditional weapons procurement programs to take account of these missions. This is especially true of ground combat vehicles—an area of modernization where the service has an absolutely abysmal post–Cold War track record. The M1 Abrams tank and the M2/3 Bradley

fighting vehicle cannot be expected to provide the kind of advantage they once did; as they reach the end of their service lives (both are 1970s designs), they are increasingly vulnerable. Despite the fact that it was huge and heavy at 10 feet tall and close to 70 tons with full armor, the recent Ground Combat Vehicle project probably points the way toward what would be a new generation of vehicles. Certainly, the supposition of information dominance and a transparent battlefield—which lay behind the Ground Combat Vehicle's predecessor, the 40–45-ton Future Combat System—cannot be sustained. Nor should strategic deployability or even fuel efficiency be as important as tactical effectiveness—the Army needs systems for close combat. Moreover, it seems less likely that one chassis design can serve as the basis for all the service's tracked vehicle needs, and, as suggested above, there is a substantial role for wheeled armored-car style carriers. In sum, the Army needs to come to a quick but firm decision about next-generation vehicle designs. The challenge is less technological—although advances in materials science and power systems should be incorporated in any new design—than operational, intellectual, and budgetary.

More challenging but still credible scenarios buttress the need for the Army to regain its ground-gaining superiority. As Jim Thomas of the Center for Strategic and Budgetary Assessments has put it, the United States has felt the need to issue periodic "eviction notices"—or to brandish such warnings—to Middle Eastern regimes whose ambitions and oppressions have threatened the regional balance of power and US security interests.[34] The US Army has been the final delivery service for these notices and the ultimate guarantor of their credibility and historically low cost. Whatever the strategic wisdom of any "regime change" may be, and however operationally effective other forms of military power may prove, large-scale land-force operations remain the only sure way, in Clausewitz's words, "to compel an enemy to do our will."

The cost of conducting regime-changing land campaigns is rising exponentially. To begin with, the well-documented challenges posed by anti-access and area-denial technologies would complicate the ability of US forces to deploy to or within the region. But on the ground, destroying opposing forces, especially those defending urban areas where substantial parts of the local population may support the defenders, will be much tougher for the immediate future than it has been in recent years. Routing ISIS out of its strongholds in Iraq—in Mosul, for example—or in Syria would likely be incomparably bloodier than the Desert Storm clash with Saddam's Republican Guard or the 2003 "Thunder Runs" that finally shattered his hold on power. Though ultimately extremist forces will not be able to match the firepower, mass, and professionalism of US units, they will be well dug in, generally well armed—they will probably have advanced anti-armor weaponry—and zealously committed to the battle; one need only recall the difficulties of evicting Abu Musab al Zarqawi's forces from Fallujah.

***To reclaim the kind of technological edge needed to succeed on lethal urban battlefields, the Army must come to some very quick procurement decisions about what kind of ground combat vehicles it needs.***

To reclaim the kind of technological edge needed to succeed on these lethal urban battlefields, the Army must come to some very quick procurement decisions about what kind of ground combat vehicles it needs. To repeat: these designs must be driven first and foremost by the need for survivability; it will be very difficult to avoid close-in fighting or being hit by enemy fires. There will be a need for a tank-like main gun, though its purpose will be less the destruction of opposing tanks than the destruction of built-up fighting positions. An infantry carrier will also need heavy protective armor and a powerful automatic cannon. And small units must have sophisticated electronic networks to achieve superior—if hardly perfect—situational awareness in inherently chaotic circumstances; it is also likely that the electromagnetic spectrum will not be a benign environment, so such networks must be robust enough to function under attack.

Finally, there is the nightmarish prospect of nuclear proliferation across the Middle East. In particular, Iran's nuclear program is driving a host of other states to try to match—even before Iran declares itself to have a fielded weapon—Tehran's looming bomb. Not only is this a grave deterrence challenge for the United States, but it should force US conventional forces to reconsider the consequences of operating on a nuclear battlefield, something the Army has not had to take into account since the 1950s.

Alas, with its "pentomic" unit designs and various tactical nuclear rockets, the Army imperfectly solved the puzzle of the nuclear battlefield. Still, the prospect is a more likely one now than then; the number of nuclear actors—Israel, Pakistan, Iran, Saudi Arabia, Turkey, and Egypt, just to name the most probable—will be far larger and their volatility greater. This represents a fourth force-shaping and capability-compelling scenario that US land forces must consider.

Although these scenarios are only illustrative—they do not include any assessment of what is needed in Europe or on the Korean Peninsula, for example—they help to frame the range of capabilities needed by the Army. They also provide a framework for understanding the service's modernization challenges. In broad terms, the Army's current aircraft programs, including the UH-60 Blackhawk, AH-64 Apache, and CH-47 Chinook helicopters, remain superior platforms and are capable of additional improvements; their designs retain the ability of having room to grow, and they are programs that warrant additional near-term investment. Nonetheless, they need to be supplemented by a lighter armed scout chopper—the Army finally has retired its Vietnam-era OH-58 Kiowas—and a family of unmanned systems. Ground combat systems are another matter, as the discussion above makes plain. The proposed designs for the Ground Combat System program were behemoths, but the nature of the battlefield challenge probably demands such a design, one that emphasizes survivability, firepower, and an engine powerful enough not only to move the vehicle but also to generate a lot of electricity for both onboard systems and those carried by dismounted soldiers.

Finally, Army land forces need to become less dependent on fire support in the form of tactical fighters. Over the past decades, the service has divested itself of a good deal of its artillery, a decision that should be revisited with a view to increasing both the range and accuracy of fires. The bad news is that uncertainty over the Army's mission has wasted a generation of investment and left a long trail of failed modernization efforts. Fortunately, this problem can be solved with engineering and funding; the Army should be able to move rapidly to develop and begin to field replacements for both the Abrams and Bradley, perhaps using common chassis, automotive systems, and even electronics.

## Naval Forces

If the challenges of hybrid warfare across the Middle East provide the force-shaping scenarios that should drive US Army modernization, the need to project and sustain maritime power on the far side of the Pacific will define the kinds of capabilities the US Navy must possess. This is proving increasingly the case as other countries, such as Iran, acquire the anti-access and area-denial technologies fielded by China's military—whether in imitation of the Chinese or through direct transfer and arms sales.

Thus the Navy must rededicate itself to "ruling the waves"—establishing sea control on and under increasingly contested waters while at the same time stepping up its presence patrols to deter an open conflict in the first place. The service has started to come around toward such a direction, and that has meant a near-180-degree course correction from the early post–Cold War years when it settled on its current ship designs. Back then, the Navy thought its purpose was to project power "from the sea"—indeed, that was the title of its 1992 capstone doctrinal manual—onto littoral shores. In the aftermath of the collapse of the Soviet Union and Operation Desert Storm, the sea services played only a secondary role in the business of helping depose Middle Eastern potentates. Saddam Hussein had no navy beyond a few patrol boats, and Desert Storm was a land-based event. The traditional blue-water, open-ocean sea control mission took a back seat to missions closer to the coasts.

In retrospect, the focus above rested on a broader

misreading of China's rising ambitions and increasing military capabilities and the US Navy's sense of superiority over its rivals. But now China is building what Ronald O'Rourke of the Congressional Research Service describes as "a modern and powerful navy" with a "growing capability for conducting operations beyond China's near-seas region."[35] By sustaining its capacities and increasing its capabilities, China, with its missile, air, and naval forces, can now overawe its neighbors in Southeast Asia, isolate Taiwan, and pose serious problems for Japan and South Korea in the north, and at the same time it can mount what it calls "counter-intervention" operations against the US Navy.[36] Moreover, China is beginning to send more powerful naval forces into the Philippine Sea, a key area that the United States must control to deploy or reinforce its forward-operating forces and sustain its Pacific alliances. In addition, by establishing a "string of pearls" set of bases that ring the Indian Ocean, the Chinese are paving the way to exert themselves in the waterways that are Beijing's energy lifelines and carry a growing share of the world's commerce. China is shifting from a purely anti-access posture to one that reflects a desire to contest control of selected seas.

To respond, the US Navy must devise a new set of operating concepts to assert sea control in more challenging circumstances, reshape its modernization programs to develop new weapons and new ships, and accelerate the rate of current procurements. At the same time, the other services must invest in systems that would substitute for the from-the-sea firepower that the Navy increasingly has supplied for joint forces; the United States can no longer afford to support long-enduring counterterrorism or counterinsurgency efforts deep in the Middle East with carrier air power or other very expensive naval assets. Such burdens prevent naval forces from conducting their true purposes of naval-specific power projection and sea control. The Navy must be focused on these uniquely maritime missions.

Measured in these terms, the Navy's post–Cold War modernization efforts have been a disaster. The *Seawolf*-class attack submarine program, begun in 1989, was terminated after just three boats were built; each cost more than $3 billion. Its replacement, the current *Virginia* class, though a billion dollars cheaper per copy, has, thanks to budget reductions and the overhead costs associated with the policy decision to maintain two nuclear-capable shipyards, been unable to achieve economies of scale. After the first few *Virginia*-class subs were built, the Navy instituted a cost-cutting program in hopes of finally achieving a build rate of two boats per year (about half the rate of *Los Angeles*–class production during the latter half of the 1980s), but the cuts mandated under the BCA have put that goal at risk. At present rates, the Navy will keep buying *Virginia*-class subs for another two decades, and the boats will remain in service for four decades. That is an eternity in undersea warfare, and there is reason to wonder whether the basic design can remain effective for so long. With China beginning to deploy its submarines into the open Pacific and across the Indian Ocean, and with a revitalized Russian submarine force and the general proliferation of submarines, a small—probably fewer than 50—and aging fleet of *Virginia*-class boats will be increasingly hard-pressed to meet the demand.

The Navy is thus running a growing risk in what is perhaps the most critical domain of maritime warfare and a domain that has traditionally been an "asymmetrical" American advantage. The service has been investigating the use of unmanned undersea vehicles (UUVs) for some time now, and the *Virginia* class is capable of housing and launching relatively large ones. Furthermore, there is no reason why surface ships could not also operate unmanned vessels or why UUVs could not be launched from regional bases. Moreover, the Navy's silent service should reconsider its hostility to diesel-powered submarines for several reasons, not least being the lesser cost of procurement; even the diesel haters in the US Navy cannot inflate the price of such boats beyond $1 billion—that is, half the cost of the *Virginia* class. And because most of America's allies—especially front-line states such as those in East Asia or the Baltics—operate and build very capable diesel submarines, a multination procurement program—a submarine version of the F-35—would help improve both coalition capacity and capability. In sum, the Navy needs to increase the size and the modernity of its submarine fleet. Thus, it should immediately accelerate

procurement of the *Virginia*-class boats while pursuing development of a family of UUVs that could be ready for fielding within five years. In the longer term, it should both ready a new generation of attack-boat designs and consider a multinational diesel program, at least as a hedge against the technological difficulties in developing UUVs and the costs of a fully capable, large-displacement, nuclear-powered attack submarine.

***The Navy must rededicate itself to "ruling the waves."***

The Navy's problems in procuring surface combatants have, unfortunately, been far worse than those that plagued its submarine programs. After spending most of the 1990s trying to figure out what role it should play in US defense strategy, the sea service in 2001 rolled out a new "network-centric" concept of surface warfare built around a new cruiser, the CG(X); a new destroyer, the DD(X); and, in place of a new frigate and smaller single-mission platforms such as mine warfare ships, the multipurpose LCS. As Bryan Clark of the Center for Strategic and Budgetary Assessments mordantly observes, "Each of those ships is now cancelled or truncated, and the approach they support is in disarray."[37] For the near term, the Navy is building a "Flight III" version of the DDG-51 *Arleigh Burke*–class destroyer—a 30-year-old basic design—both upgrading and mothballing its remaining 22 *Ticonderoga*-class cruisers—the first ships to carry the Aegis weapons system and christened into active service in 1981 by then first lady Nancy Reagan—and working on yet another redesign of the LCS to make it more lethal.

Late in recognizing the course, breadth, and pace of Chinese modernization, the Navy has painted itself into a corner, particularly in regard to large surface combatants. The imminent loss of a cruiser-class platform, optimized for air and missile defense, and the termination of the *Zumwalt*-class DDG-1000 program mean that for the near future the Navy must rely on the upgraded "Flight III" *Arleigh Burke*. But one of the insurmountable problems of this design is simply its size: the *Arleigh Burke* displaces only about 9,000 tons (the *Ticonderoga* is just slightly larger) while the *Zumwalt* is almost 15,000 tons (and its companion cruiser might have weighed in at 23,000 tons). The prime advantage of the larger class is that it can house a far larger power plant to drive not only larger radars and sensors but also, within the foreseeable future, electromagnetic rail guns or lasers. Such weaponry could fundamentally change the balance in fleet defense and sea control operations and do much to offset the threats of anti-ship ballistic and cruise missiles and adversary aircraft.

Alas, the *Zumwalt* as it stands was optimized for land-attack, power-projection missions and features a rapid-firing 155mm gun system capable of shooting almost 100 miles; that is to say, the *Zumwalt* is more battleship than cruiser or destroyer. Moreover, as the program advanced and its costs rose drastically, the Navy cut corners on the *Zumwalt* radar, killing the powerful next-generation search radar. The ambitious Air and Missile Defense Radar effort—combining advanced search and targeting systems operating in different bands—would solve the problem, but its development is currently scheduled to last a decade. Even while the Navy is upgrading its fleet of *Arleigh Burke*s, it must rapidly redesign the *Zumwalt* as a fleet air-and-missile-defense and antisubmarine warfare ship; any land-attack mission should be a lesser priority, borne by submarines (including a lengthened *Virginia*-class sub with a module designed to hold a large magazine of Tomahawk cruise missiles), carrier aviation, or even land-based ballistic and cruise missiles.

The need for a new large-displacement surface combatant, more survivable and lethal in the emerging contest for sea control, should be the surface Navy's central procurement objective. Bringing that capability into the fleet as rapidly as possible is far more important than designing a new frigate to replace the LCS, and the cost of a new destroyer or cruiser class ship, even one that is based on the investments made in the *Zumwalt*, will be hugely expensive. Even with expanded budgets, the Navy must focus its shipbuilding funds where the need is greatest: putting a new, more dominant surface combatant to sea as fast as possible, expanding its fleet of *Virginia*-class subs (and their arsenals by way of the Virginia Payload) while complementing them

with UUVs, and expanding and reworking the LCS fleet into a more "frigate-like" configuration—one that would make sense for a variety of allied navies as well.

The final piece in the Navy capabilities puzzle is what to do about the carrier fleet. In this case, the real question is more about carrier aircraft than the ship. In short, the service's obsession with littoral power projection has made its F/A-18-loaded carriers something approaching what Andrew Krepinevich has called a "wasting asset"—a pricey platform whose utility in the emerging realm of high-technology conventional conflict is open to question.[38] Not only has the Navy hung on to its fourth-generation aircraft too long, but it is also in danger of purchasing a low-capability unmanned aerial system that would do little to restore the value of carriers in an anti-access environment.

To be fair, the Navy's problems also result from an excess of "jointness" and the need to use carrier strike aircraft to support ongoing operations in the Middle East for the past decade; immediate need for current wars has pushed off essential modernization for tomorrow. Thus, the Navy has been too slow to embrace the F-35 program and reluctant to invest in high-end, stealthy, unmanned aerial vehicles for longer-range strike. The sea service is gradually building toward a carrier wing split between F/A-18s and F-35s when it should be urgently working to field a mix of F-35s and stealthy strike UAS that can restore carriers to a prominent role in the contest for sea control.

But altogether, the Navy needs a thoroughgoing revitalization and a refocusing on its principal role within the larger strategic context outlined in this paper. To repeat: its essential and unique role is to maintain control of increasingly contested but critical waterways in the western Pacific, the Arabian Sea and Persian Gulf, and the Baltic Sea. That Navy could be on the lower end of the National Defense Panel's fleet size recommendation—323 ships—but those ships need to be much more capable across all classes.

Even a well-run modernization program will go for naught, however, unless the United States—both the civilian and military leadership—can learn to govern its nearly insatiable appetite for sea-based firepower in support of land operations, particularly extended land operations. The problem with today's Navy is less that it is a "wasting" asset whose utility is diminishing, but rather that it is an all-too-convenient asset being used for missions that could be better performed by other services. Shrinking budgets and misaligned deployments have, to be clear, created a deep hole for the Navy. Facing such a hole, and with little relief in sight for the shipbuilding budget, the Navy has further complicated matters by choosing options that, at best, marginally address the pressure of the Chinese military buildup but, in doing so, might foreclose the modernization program actually required to ensure that the Navy is able to fulfill its sea control and power projection missions in the decades ahead.

*Altogether, the Navy needs a thoroughgoing revitalization and a refocusing on its principal role within the larger strategic context.*

The cost of correcting this path will be expensive; the shipbuilding budget alone could well double—to say nothing of nuclear ballistic missile submarines—and the aircraft budget could follow suit. The good news is that the needed technologies are relatively mature, so such a modernization effort could be accomplished both effectively and efficiently if consistent investments are made. But, to be sure, even that cost would pale in comparison to the cost the United States would pay should it fail to correct the Navy's course, ceding its ability to conduct its core missions.

## Marine Forces

Through the confusion of the post–Cold War generation, the US Marine Corps has stayed true to its basic self-understanding as a seaborne combined-arms force with limited capacity and capability to intervene unilaterally in unforeseen contingencies while also contributing to larger, joint-force campaigns. Ironically, of all the US armed services, the Marine Corps has most "transformed" itself with new platforms and increasingly new

tactical and operational concepts, all the while remaining true to its traditional, core missions. Nonetheless, the process is incomplete. The lack of an expeditionary fighting vehicle (EFV)—a ship-to-shore troop carrier that can also provide improved protection, mobility, command and control, and direct-fire support ashore—deprives the Marines of the final piece of the "medium-weight force" puzzle.

The Marines' ability to modernize themselves through times of strategic uncertainty and constant deployment is not only a contrast to the troubles of the other military services but also a testament to the strength of the Corps' vision of itself and its pervasive culture. That certainty has convinced a generation of Marine commandants that they should make heavy investments in risky technologies, persist in developing them, and bring them into field service at the earliest possible date.

The most striking and, thus far, successful of these efforts has been the V-22 Osprey tilt-rotor aircraft; the V-22 takes off and lands like a twin-rotor helicopter, with its blades in a vertical position, but, on taking to the air, "tilts" them horizontally to fly like a traditional turbo-prop, fixed-wing plane. This unique design allows for increased operational range and speed, though it sacrifices some lift capacity. The idea derived from an analysis of the shortcomings of Operation Eagle Claw—the failed 1980 Iran hostage rescue mission—and the technology was demonstrated through the 1980s in a joint-service prototype called the XV-15.

Both the Army and the Marines needed to replace their aging medium-life choppers, the CH-47 Chinook and CH-46 Sea Knight. The Army chose to modernize the Chinook (which it has done twice, to great effect); the Marines chose to develop a larger version the XV-15 as the V-22. Special operations forces also ordered a version of the aircraft. The engineering challenges of building a complex aircraft whose wings could fold for storage on Marine amphibious ships were significant, and, as costs rose, then-Defense Secretary Dick Cheney tried four times in four years to terminate the nascent program. Though Congress sustained support, budget cuts slowed progress and further increased costs—the total bill ended up at about $50 billion. A number of crashes during the testing phase also brought the V-22 program to the brink of termination; critics called it an unsafe aircraft.

Nonetheless, the V-22 has performed well in Iraq and Afghanistan since 2007. Two features—range and speed—have made the high cost of the V-22 well worth it, especially in light of the evolving tactical environment. The V-22's combat range is at least one-and-a-half times that of the venerable CH-46, and its speed in rotors-forward mode is almost double; indeed, given the age of the CH-46 (which has now been completely retired) and the operational limits it flew under, the V-22 has been nothing short of revolutionary for the Marines, allowing them to cover a wider battlefield and maneuver more rapidly across it. The V-22 is now also being fitted with rocket pods, giving a much-needed boost to its organic firepower.

The sole remaining question about the V-22 is how many aircraft will be purchased. More than 250 are now in service, and the Marines are close to having contracted for the total 408 Ospreys they require. Another 40 (of 50 planned) are in use among special operations forces. The V-22 is the likely replacement carrier onboard delivery plane, which would account for another 45 or more aircraft. Again, it is hard not to contrast the consistency of purpose and clear understanding of mission that have made the Osprey acquisition effort a long-term success despite a host of technological, bureaucratic, and budgetary challenges.

The Marines have also been essential to the—halting—progress on the F-35 program; the F-22 was always the first order of business for the Air Force, and even now the Navy's commitment is hedged. To be sure, the Marines had no alternative; their AV-8B Harriers are very old, and no other jump-jet aircraft can operate off of small-deck Marine carriers. But whether through luck or foresight, the Marines are on the cusp of a new approach to littoral warfare that could prove especially valuable in solving the anti-access puzzle. While the Air Force and the surface Navy are focused on extending the range of their platforms and munitions, the Marine Corps (and the sub-surface Navy) are taking what might be described as a "maneuverist" approach to the challenge. Instead of standing off at a distance to degrade anti-access networks, the Marines

are seeking to "exploit seams in an enemy's defenses."[39]

The short take-off and vertical-landing capabilities of the F-35B are critical to mounting the kinds of raids that such an operational concept mandates. Through the years, the Marines have employed their Harriers in much the same way that the Army uses its Apache helicopters: creating temporary forward arming and refueling points nearer to the front line to cycle these aircraft into action more frequently. Both services relied on these techniques in the two major campaigns against Iraq. Although East Asia is hardly open desert, its coastal regions are thick with airfields—even small sections of major highways can be used as temporary airfields (and indeed Sweden developed these tactics during the late Cold War to disperse its air force in the face of a potential Soviet strike). In partnership with the V-22, which can provide logistical support and mobile rearming and refueling capacity, the Marines' F-35B can provide multiple avenues of approach to anti-access networks. As noted by the Amphibious Capabilities Working Group, the Marines see that "littoral maneuver, as a methodology to bypass fixed defenses and exploit enemy seams, must overcome the potentially widening gap between ship and shore." Maritime-based forces cannot rely on "an overmatch in firepower alone."

The "B" version of the F-35 is a very flexible, winning design. The slight loss of range and payload, and the extra expense, are more than offset by the tactical versatility of the plane—the short take-off and vertical-landing capabilities, combined with the robust, low-maintenance stealth characteristics and advanced electronics help to accentuate the "swarming" approach that is likely to become a feature of 21st-century air operations. Indeed, both the Navy and Air Force should consider adding several squadrons' worth of F-35Bs to their fleets, and the United States should encourage regional allies to choose the "B" model for their air forces.

The third leg of the stool—and the third development and procurement success—that supports the Marines' increasingly aviation-centric operational concepts is the *America*-class amphibious ship. Although the procurement of the *America* class is formally managed by the Navy, this is, of course, a Marine-driven design. This new amphibious design, larger than its predecessor, lacks the floodable lower well deck that in older designs had been used for launching landing craft, "swimming" vehicles, and other small boats such as riverine vessels. But *America* and her sister *Tripoli* have been built with extra aviation facilities, including a larger hangar deck and storage for additional fuel and munitions; that is, the *America* class is meant to maximize the value of the V-22 and F-35B, both larger and more capable aircraft than the ones they are replacing. They truly are small aircraft carriers more than traditional amphibious ships.

***Investing in a rapid procurement of the EFV would be very sensible and would give the Marines a full complement of amphibious capabilities.***

The Marines' concentration on their air combat element also helps explain the one recent failure in Marine modernization: the canceled EFV program. In fact, this was yet another inventive Marine design and ultimately a budgetary casualty—a lower-priority project that was tossed overboard by Defense Secretary Gates. Despite some heavy hand-wringing about amphibious assaults as an anachronism, the EFV was the obvious answer to the Marines' needs and should be revived as a procurement program as soon as possible.

To put larger and more powerful forces ashore in a timely way, the Marines cannot solely rely on aircraft or landing craft to ferry combat vehicles ashore. Nevertheless—in addition to its extreme age—the current advanced amphibious assault vehicle suffers from two serious weaknesses: it plows through the water at just a few knots, and it lacks much in the way of armor protection or firepower once ashore. The slow swimming speed means that the advanced amphibious assault vehicle must be delivered very close to shore before chugging the last few miles on its own; the journey is almost always nauseatingly incapacitating to the crew and Marines aboard as well as tactically risky. The vehicle's older design—it was derived from the Army's M113 armored personnel carrier—means that it has no

armor that can withstand even armor-piercing rounds from small arms or rocket-propelled grenades, lacks the power to drive much in the way of modern electronic systems, and makes a huge target. By contrast, the EFV design resembles the improbable marriage of the modern Bradley fighting vehicle, with its devastating 25mm cannon, and a small motorized watercraft, such as a Jet Ski. Rather than pushing its way through the waves, the EFV glides above the water, and, once ashore, it is far more useful as a command node and a base of fire. As odd as the concept may appear, it is a sound one, and the various engineering challenges have been solved; investing in a rapid procurement of the EFV would be very sensible and would give the Marines a full complement of amphibious capabilities.

## Special Operations Forces

The US government is relying on its special operations forces for an increasing number of tasks. As a result, compared to their conventional counterparts, SOF generally receive the funding that they need to accomplish their diverse array of mission sets, and that funding is provided with fewer strings attached. Yet neither the streamlined acquisition process enjoyed by US Special Operations Command nor the high priority of their requirements guarantee SOF the capabilities they need to achieve policymaker objectives.

For one, SOF capabilities are, fundamentally, an extension of conventional capabilities. Therefore, special operations forces are not immune from the increased budgetary challenges faced by the conventional force, even if they face them less directly. Restrained resources within the conventional force affect special operations forces in terms of both procurement decisions and logistics. As detailed by the commander of USSOCOM, General Joseph Votel, at his March 2015 confirmation hearing, many SOF procurement programs are designed to augment preexisting programs managed by the conventional force, and continued budgetary austerity would demand a "major reprioritization" of USSOCOM acquisition priorities.[40]

In other words, continued sequestration would force USSOCOM to reconsider the efficacy of equipment peculiar to special operations forces, equipment that, for example, relies on the information technology architecture of the individual services, and would limit maintenance options for vehicles that were designed primarily for conventional forces but adapted for SOF use. Because SOF missions rely on the logistical backbone of the Defense Department, the forces' ability to execute unconventional missions rapidly is also a function of the health of the larger force. Many of the facilities, logistical support staff, and operational enablers such as cyber networks that support special operations forces are primarily if not exclusively nested within the functional combatant commands. Even if USSOCOM were able to detach itself more fully from conventional commands, such initiatives would, naturally but perversely, result in significant additional costs and undermine decades of concerted efforts to better integrate the unconventional and conventional forces.

Second, the fact that special operations forces often receive the most cutting-edge equipment and capabilities before the rest of the force through a relatively permissive acquisition environment creates the opportunity for misallocation or wasted funds if requirements are not closely matched with spending. Because adaptability and innovation are at the core of the SOF ethos, decision makers should ensure that acquisitions directives are not simply driven from the top but are responsive to the rapidly changing operational environments in which special operations forces operate. In addition, Congress should closely monitor and clarify SOF budget requests to ensure that monies allocated for developmental technologies and equipment are indeed intended for the exclusive use of special operations forces. Doing so mitigates the risk of fielding new technologies and ensures that the main funding source for special operations forces—known in comptroller terms as Military Force Plan-11 funds—is not misallocated for conventional purposes.

The decentralized and agile nature of SOF operations require capabilities that work well in rapidly changing environments and ones that provide special operations forces with the clearest possible picture of a potential operating area—anywhere on the globe and at any given time. Their acquisitions efforts should

therefore be guided by three main objectives: achieving total situational awareness, facilitating unrelenting precision, and keeping special operations forces at the forefront of technological applications to warfare.

Achieving total situational awareness will require investing in both people and technology. USSOCOM must support programs that not only develop regional and language expertise but also allow its troops to put these skills to use, especially over the long run. Geographic combatant commands and the theater special operations commands are partners building long-term engagement programs with local militaries, civilian governments, and populations, and these efforts must continue. The unique intelligence requirements of special operators also necessitate targeted investment in intelligence, surveillance, and reconnaissance capabilities, such as advanced unmanned systems in the sky and handheld and terrestrial sensors on the ground.

Situational awareness provides context and is one pillar of enhancing precision; it enables the "find" stage of the "find, fix, finish" targeting cycle. To optimize the likelihood of success in kinetic operations, however, USSOCOM should continue to invest in technologies that address the "fix" and "finish" stages. In addition to projects currently under way at the Defense Advanced Research Projects Agency that would enhance sniper accuracy and improve communication during close air support missions, the Defense Department should incubate and encourage private-sector approaches to "the Internet of things," a network of physical devices. If applied in a military context, the same technology that allows household appliances to communicate with one another could facilitate flexibility and innovation not only among soldiers but also among weapons systems themselves.

Last, special operations forces, as the military's innovators, should continue to have the budgetary flexibility that gives them early access to technologies and operational approaches that may not be ready for deployment in the conventional force. These technologies should include not only the ones listed above but also advanced armor, unmanned underwater systems, and visual augmentation and enhancement devices. Not all of these technologies will revolutionize warfare, but testing them through SOF will either prove or disprove the utility of a particular system before large sums are invested in providing it to the larger force.

In combination, the three objectives of ubiquitous situational awareness, unrelenting precision, and innovation will not only keep special operations forces at the tip of the spear but also result in new operational approaches. But these objectives will only be achieved if commanders, as well as politicians, are willing to listen: innovation in the SOF realm is much more likely to percolate upward from deployed teams than it will downward, from those far removed from the field.

*Continued sequestration would force USSOCOM to reconsider the efficacy of equipment peculiar to special operations forces.*

## Space Forces

Just as the 20th century was marked by the arrival of air superiority as a defining element of US military power, the 21st will likely occasion the era of space dominance; the United States must expand and reinforce its space-based communications, positioning, and reconnaissance capabilities. Doing so will require immediate support for current, effective technologies to enhance the military's communications capabilities and situational awareness, but even more important will be a new vision of what America's space-based constellation should look like. As outlined above, the miniaturization of satellites opened the realm to a new generation of entrants, making a more contested and risky environment. At the same time, all avenues of American national security decision making rely on space-based vehicles.

It is convenient to assume that the architecture underlying these activities is strong. But in reality, many of the US government's communications, positioning, and reconnaissance satellites are operating not only beyond scheduled replacement windows but also without a second line of defense. An accidental

collision with space-borne debris or a deliberate attack from a hostile nation against just one satellite would turn off a crucial information spigot that would have no near-term replacement. The impact of losing just one system in the US military's ability to navigate and to assess threats could be catastrophic.

As if the status quo were not bad enough, sequestration has eaten into the accounts used by the Pentagon to operate and maintain its satellites. In testimony before the Senate Armed Services Committee in March 2014, General William Shelton, commander of US Air Force Space Command, listed many adverse effects of the recent cuts, including a net 63 percent reduction in contractor services in a headquarters heavily reliant on contractors and the inactivation of certain operational capabilities. But these cost-cutting measures were not enough to meet the demands of sequestration: critical sustainment activities were also cut, which could lead to "system outages of increased duration or severity."[41] In other words, our only line of space defense is aging without substitute and is undermaintained.

Sequestration has devastated the operating budgets of many programs, and because of the contractor-reliant nature of space programs, the reduction of operations and maintenance budgets in the Air Force's space accounts has been a particularly difficult burden to bear. The effect on readiness has been palpable: Air Force Chief of Staff Mark Welsh, in a hearing before the Senate Armed Services Committee in January 2015 noted that sequestration has also hindered the military's ability to maintain space-related infrastructure by reducing funds available for ground-based launch systems, simulators, and training ranges and adversely affected space-related research and development.[42]

The net effect of these cuts has been a narrowing of the once-wide capabilities gap between America and its adversaries—and that gap will only narrow more quickly as long as the BCA remains in place. Satellites cannot simply be grounded or put out of commission and then restarted when budgets are more agreeable, and programs that are already in their acquisition phase, such as the next generation of global positioning satellites (known as GPS Block III), have been delayed by sequestration, even though they are meant to replace the aging backbone of America's ability to navigate and position precisely. Because of system delays and BCA-derived cuts, the Air Force has reduced the rate at which it is buying GPS Block III satellites from two per year to one and has pushed the launch date for the first of these systems to at least 2017.

Meanwhile, adversaries continue to develop and refine their space systems and anti-satellite technologies, further threatening the dominance of space that the United States has enjoyed since the end of the Cold War. Russia and China, for example, are developing their space capabilities at an alarming clip. Admiral Cecil D. Haney, the current head of the US Strategic Command, stated in February of this year that Russian and Chinese space-related activities, especially the development of counterspace capabilities such as directed-energy weapons, poses a "serious growing threat" to US space systems.[43] As we are becoming weaker and less agile in space, our adversaries are growing stronger.

Maintaining the upper hand in space will necessitate a paradigm shift in how America prioritizes, designs, funds, and acquires space-based assets. To begin with, we must fully fund space-related operations and maintenance accounts. We must at least ensure we are keeping up—and getting the most from—what we have. For the future, we need to expand space-based communications infrastructure, build multiple layers of defense to protect related assets, develop new launch concepts, and end reliance on foreign propulsion technologies. We also need to increase the resiliency of the overall constellations of satellites by adding more single-mission platforms rather than large vehicles that aim to address multiple threats at once. These recommendations will ensure American dominance in space well into the future.

America currently enjoys a near monopoly on space-based positioning systems, but with China's global positioning system set to go online in 2020 and with Russia and India, among others, developing their own systems, the race to maintain the edge in positioning technology is accelerating. In addition to reverting to the previous schedule for GPS Block III acquisitions and facilitating an accelerated launch timetable, then, the next administration should also allocate funding to support research into the next generation of GPS satellites. The

life span of GPS satellites is short—ranging from 7.5 years 15 years—which means that by the mid-2030s, GPS Block III satellites will need to be replaced. To avoid replicating the current situation, wherein the US government and civilian sector rely on outdated satellites operating well beyond their projected life spans, we must plan for the future well in advance.

The American military's edge on the ground is arguably as reliant on superior space-based technologies as it is on the acumen of its soldiers and on the power of its weapons. The GPS constellation is an essential capability—but so are the space-based systems that enable the highly networked communications of today's warfighters. Programs such as the Advanced Extremely High Frequency System, the Wideband Global Satellite Communications system, the Space Based Infrared System, and the Mobile User Objective System will go a long way toward supporting a highly networked and globally aware military. Congress is aware of this need and has, in the last several budget cycles, protected the bulk of funding necessary to support these systems. But these systems are not without their drawbacks. For one, their complex supply chains and the wide variety of stakeholders in the space community increase their acquisition costs. These systems are large and are thus expensive to field. In a recent study, the Government Accountability Office found that these costs increase even further when supporting facilities on the ground, such as ground stations for data downlinks, are not developed in time for the operational phase of the space-based vehicle. Aligning these components will require a level of acquisition reform that is beyond the scope of this report, but to reduce costs, research efforts into successor systems should focus on systems that would minimize the number of authorities involved in the acquisitions oversight process.

To maximize the impact of every dollar invested in America's space infrastructure, industry must also do its part to reduce the costs of fielding space-based systems. Doing so will require increasing the interoperability of parts among systems and streamlining production. Lockheed Martin, for example, recently announced that it will be able to cut the cost of future missile warning satellites by up to 25 percent and the next round of GPS Block III satellites by 40 percent because of efforts to adapt previously developed components and satellite frameworks to serve new purposes. For now, this increased flexibility will help the Air Force meet the statutory limits on its budget imposed by the BCA, but in a post-BCA environment, the savings reaped from these changes would free up resources for additional acquisitions or investments in research and development.

*The 21st century will likely occasion the era of space dominance.*

The development of interchangeable parts and platforms portends more than just savings. An increasingly adaptable and "component-driven"—as opposed to "system-driven"—approach will also aid in efforts to repair damaged systems and will increase the vitality and life of the constellation. The next administration should encourage these efforts and build on them by directing research and development toward small, highly specialized, and rapidly deployable vehicles. It should encourage the development of technologies that "piggyback" on commercial payloads, such as microsatellites, foster greater burden sharing and cooperation with trusted allies, and develop smaller, cheaper satellites that can be bought in multiples rather than separately. In creating a diverse array of vehicles that still share a high common denominator of parts and components, we will find that the costs associated with maintaining the constellation will decrease, as will the chances that a single accident or attack could eliminate a critical capability. Superiority in space is America's to lose, but only if wise investments are made that challenge the prevailing "bigger is better" paradigm.

Finally, there is the question of rockets—Russian rockets and Chinese rockets. The US government must have a secure space-launch capacity that covers the full range of needed launch capabilities. A disaggregated and highly diversified constellation must be supported by launch capabilities that both support national security goals and are optimized for carrying a variety of payloads into space. Regarding propulsion technology, in fact, the United States has already fallen behind the technology of a potential adversary. The US military currently relies

on the RD-180, which is based on Russian plans, to propel the Atlas V rockets that carry many of our satellites into space. In 2015, Congress allotted $220 million to the Air Force to research a new engine for the Atlas V, with the intention of acquiring the first replacement by 2019. This is an important step—and funding for the Atlas V engine replacement should remain a priority of the next administration. But the power of an Atlas V rocket may not be necessary to launch smaller systems into orbit, and research into the RD-180's replacement should not preclude the development of systems that are better suited to propelling smaller payloads.

If the first task for the next administration is simply to undo the damage inflicted by the BCA and return current space programs to a healthy rate of procurement, it must also prepare a new vision of what America's space-based constellation should look like. It should prioritize disaggregation, miniaturization, and interoperability and back the creation of propulsion technologies that will support the wide variety of vehicles that should serve as successors to America's current space-based capabilities. In short, it should treat superiority in space as a necessary and foundational element of its overall national security strategy.

# 7

# Defense Spending

Rebuilding the capacity and capability of America's military to a three-theater standard will require substantial sustained reinvestment. To understand the scope of this challenge, it is crucial to understand that the problems of today originated years ago. As devastating as the cuts of the early Obama years and the Budget Control Act of 2011 have been for the military, the current predicament the Pentagon finds itself in is a product of three successive US administrations. The hole is so deep because we have been digging it for more than 20 years.

## The Clinton Years: The Procurement Holiday

In President Bill Clinton's first term, more than $160 billion was cut from the planned defense budget put forward by the Bush administration in its last year in office.[44] The defense budget fell, in fiscal year (FY) 2015 dollars, from $440 billion in 1992 to $365 billion in 1996 and remained largely flat for the next four years. As a result, the country's defense burden (measured as a percentage of the country's GDP) dropped from 4.4 percent in 1992 to just 2.9 percent by 2000—then the lowest figure since before World War II.

As noted at the beginning of this report, in 1993 the Clinton Pentagon undertook the *Bottom-Up Review* (BUR), which was intended to provide a comprehensive assessment of the requirements and force structure needed to meet the challenges of the new era. But analysts were soon arguing that planned force levels were not sufficient to carry out the two-war strategy underlying the BUR and that administration budgets were not adequate to equip and train the planned force structure. Outside think tanks estimated the annual shortfall between long-term defense plans and budgets at between $26 billion and $100 billion, and the Congressional Budget Office said that Clinton administration procurement budgets were as much as one-third smaller than those necessary just to sustain the force.[45]

Although the size of the Desert Storm–era force was reduced by roughly one-third, this was not the only consequence. The Clinton administration marked the beginning of an extended "procurement holiday," where aging equipment was not replaced and acquisition spending dropped by more than 50 percent, from $94 billion to $43 billion, in just a five-year period.[46] Moreover, research and development money was increasingly budgeted for modifications to already fielded weaponry and platforms, not new ones. In the 2000 budget request, the Clinton administration intended to spend a third of its research and development monies on upgrading existing systems, while at the same time cutting science and technology accounts, the seed corn for future military preeminence, by a quarter from the year before.

A third effect of declining budgets was an across-the-board reduction in force readiness, producing the so-called "hollow force" of the 1990s. With basic pay not keeping up with the rate of inflation, troops deploying far more than during the Cold War, and equipment being used at a rate much higher than expected, problems arose both in recruiting and in retaining soldiers, sailors, and air personnel and in keeping military training at reasonable levels and equipment in good working condition. For example, perfectly good aircraft were being cannibalized for spare parts to keep other planes flying, and at one notable point, not a single one of the Army's 10 divisions was rated C-1, the readiness level suited for going into combat.

For many, this decline in our military was justified on two grounds. The first was the federal government's deficits. Indeed, the budget was largely balanced as a product of a growing economy (with more tax revenues as a result) and cuts in defense spending. Nevertheless,

domestic spending fell only slightly as a percentage of GDP (from 13 percent to 12.9 percent), and actual spending rose in this area by some $300 billion. Budget hawks, it turns out, preyed only on the Pentagon.

The second argument for cutting defense spending, force structure, and modernization programs was the hope that the United States would not face a military problem of any significance in the immediate years ahead. It would, they believed, be a period of "strategic pause"—a hope shattered by the attacks on 9/11.

## The Bush Years: The Hollow Buildup

Although vice presidential candidate Dick Cheney famously told the military "help is on the way," in reality the help initially proffered was far less than what was needed.[47] Early on, the White House was hesitant to add any significant monies to the 2001 supplemental appropriations for defense and only grudgingly agreed to an increase of $5.6 billion for the year. Also cut was Secretary Rumsfeld's prospective budget increase of $35 billion over the planned Clinton budget for 2002, with the Office of Management and Budget whittling that back to little over half that amount.

In the aftermath of the attacks on 9/11 and the wars in Iraq and Afghanistan, the defense budget did of course increase. From 2001 to 2009, total spending grew by 73 percent in real terms, but much of that increase was tied to fighting the wars in Iraq and Afghanistan. If we set war funding aside, we see that the base defense budget actually only grew at an average real rate of 4.4 percent during that same period: an increase, to be sure, but not sufficient to address the deficit created by the failure to recapitalize the military during the 1990s. Indeed, because the platforms carrying the military into war in Afghanistan and Iraq were largely bought in the late 1970s and 1980s, their sustained use in those conflicts meant that more had to be spent to keep them repaired and ready for combat. As a result, from 2001 to 2009, the percentage increase in the Pentagon's operations and maintenance account topped 50 percent, reducing the availability of funds that might have been spent on recapitalizing the military. Moreover, the largest wartime procurements were for systems that met immediate and unique needs—such as the Mine-Resistant Ambush-Protected vehicles, which altogether cost nearly $30 billion—but did not serve much longer-term purpose.

Compounding this problem was the fact that, as predicted back in the 1990s, the military—especially the Army—was too small to fight two major conflicts at one time, the standard stipulated by our national security strategy. Retaining this veteran and exceptional fighting force became a priority, which, in turn, meant expanding pay and benefits to the military and their families as they experienced deployment after deployment. As necessary and deserved as those increases were, it did mean once again that there was less money for investing in new capabilities and equipment (table 1).

As Andrew Krepinevich of the Center for Security and Budgetary Assessments noted in 2010, "One might think that the major increases in defense spending have left the US military well-equipped to address" current challenges. But "sadly, this is not the case. The defense buildup has not resulted in a significant modernization of the military. Indeed, from a procurement standpoint, the US military can be said to have experienced a 'hollow buildup.'"[47]

## The Obama Years: "Shooting Ourselves in the Head"

The Obama administration did not fix the defense deficit; it only made matters worse (figure 8). According to a January 2010 Congressional Budget Office report, the $534 billion requested by the administration in its first budget submission the year before was at least $40 billion below the level necessary to fund its own defense plans.[49] Shortly thereafter, the House Armed Services Committee released the lists of the military services' unfunded priority programs; they totaled $548 million for the Air Force, $359 million for the Army, $532 million for the Navy, and $351 million for the Marine Corps.

Rather than addressing the yawning gap in resources, the administration moved to "fix" the problem by eliminating planned spending and procurements; rather

**Table 1. The Long Vacation: Average Annual Procurement, 1975–1990 vs. 1991–2006**

| | 1975–1990 | 1991–2006 |
|---|---|---|
| **TANKS, ARTILLERY, AND OTHER ARMORED VEHICLES** | 2,083 | 334 |
| **HELICOPTERS** | 187 | 68 |
| **BATTLE FORCE SHIPS** | 19 | 6 |
| **AIRCRAFT** | | |
| Fighter and Attack | 349 | 68 |
| Tactical and Strategic Airlift | 31 | 20 |
| Tankers | 5 | 2 |
| Heavy Bombers | 7 | 1 |
| Other | 16 | 2 |

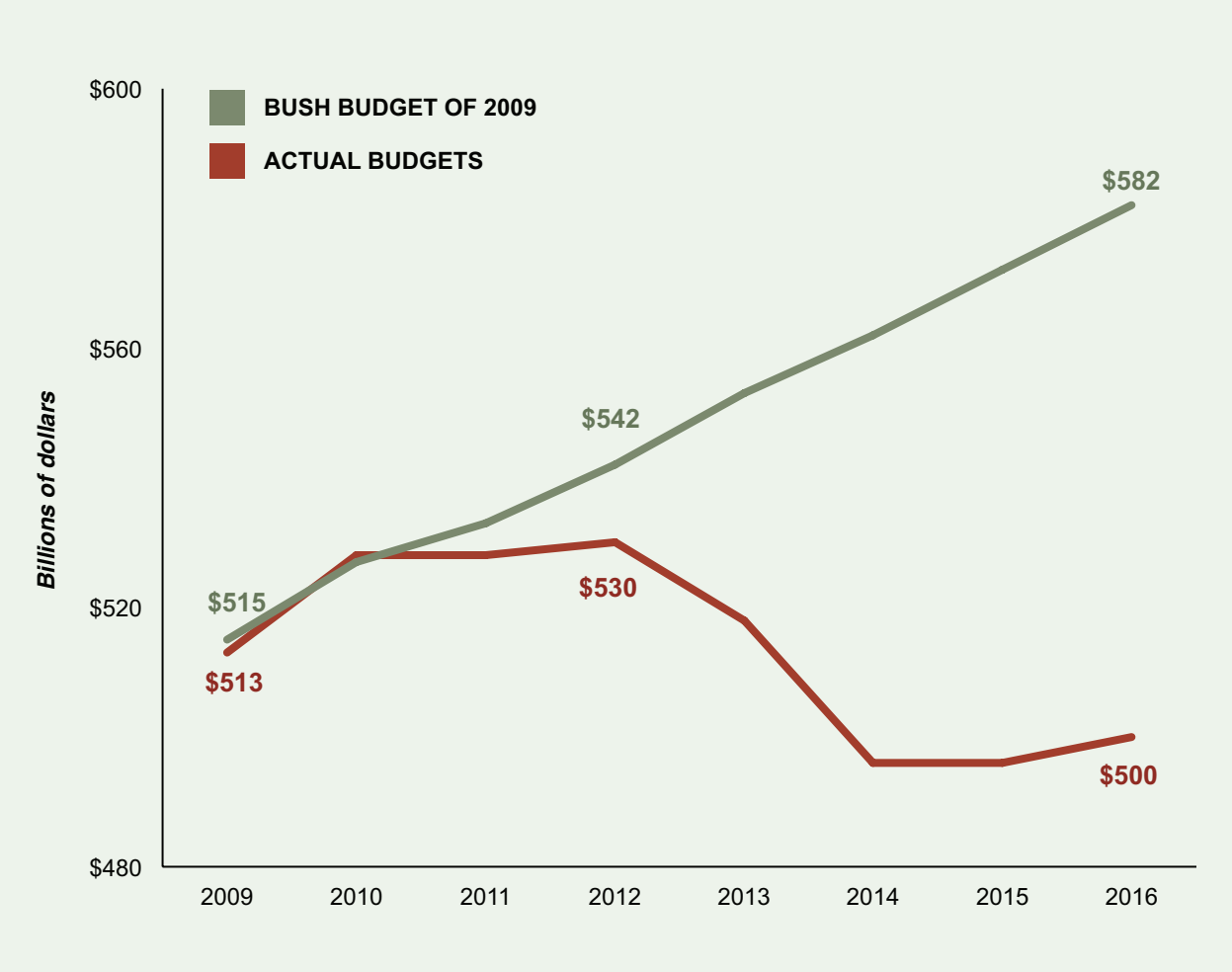
Source: Calculated from US Department of Defense procurement data for 1975–2006 and from Congressional Budget Office data.

than increasing budgets to adequately fund requirements, it shrank the requirements. During the administration's first three years, it cut nearly $500 billion out of current and future budgets. As a result, more than 30 defense programs were canceled, capped, or ended—including such programs as the F-22 stealth fighter, the Army's Future Combat System, the fleet of DDG-1000 destroyers, and numbers of ground-based, antiballistic missiles.

As significant as those cuts were to the military's efforts to retain its global preeminence now and in the future, they have only been made worse by the 2011 Budget Control Act and its automatic spending cuts known as sequestration. Under the BCA, more than $400 billion was eliminated between 2012 and 2021 from the national security budget put forth in the 2012 request, and, unless the law is eliminated or substantially changed, sequestration will take another $500 billion from planned defense spending over a similar time period. In sum, rather than repairing the undercapitalized, undermanned, and underresourced American military, Congress and the White House will have stripped some $1.5 trillion from the Defense Department at a time of increasing global insecurity. As former Defense Secretary Leon Panetta once pointedly put it, these funding decisions are akin to "shooting ourselves in the head."[50]

With such a precipitous decline in defense resources, having already cut one modernization program after another, and beset by maintaining readiness levels, the Pentagon has no option but to cut force structure to meet the demands of the BCA and perhaps

**Figure 8. Making Do with Less: The Shrinking Defense Budget**




Source: Calculated using data from the Office of the Undersecretary for Defense and the Office of Management and Budget.

maintain what few modernization programs—such as the F-35—remain. And although estimates of how deep the force structure cuts vary, they are all severe: the smallest active-duty army (approximately, 420,000) since before World War II; the smallest navy fleet (approximately 250 combat ships) since before World War I; and the smallest air force (with approximately 13 active and reserve tactical fighter wings) since its creation. Although this smaller force might deploy with a modicum of leading-edge technology, such capabilities will not make up for the lack of global capacity at such smaller numbers. Ships, soldiers, and planes cannot be in more than one place at a time. Advanced weaponry, especially at the numbers now planned, cannot make up for that shortfall should the United States face more than one significant contingency, and even if confronted with only one major conventional conflict, it would be stretched to the maximum to deal with it. Sustaining the three-theater posture to defend America's global interests will be impossible.

As the NDP reported this past summer:

> The force structure contemplated in the 2014 QDR—much less the projected force structure if the current budget baseline does not change—is inadequate given the future strategic and operational environment. This

> judgment is bolstered by comparing projected end strengths with the much larger force recommended in the Department's Bottom-Up Review (BUR) of twenty years ago. Although our conventional capabilities have significantly improved since that time, so have the capabilities of our potential adversaries, and the security environment facing the Department twenty years ago was far less challenging than today and what is projected for tomorrow. That a substantially larger force was deemed necessary then is powerful evidence that the smaller force envisioned by the Department is insufficient now.

Indeed, compare the force structure outlined above, likely to result from sequestration, with that of the BUR and the earlier Bush administration's post–Cold War Base Force of 1991.[51]

The wide disparity between what was once thought necessary for maintaining American military preeminence globally and safely securing American interests and security and what US forces will likely be in the wake of sequestration is striking. Given that, it is no surprise that the NDP concluded that unless this course is reversed, "the armed services will in the near future be at *high risk* of not being able to fully execute the national defense strategy . . . [and] the United States could find itself in a position where it must either abandon an important national interest or enter a conflict for which it is not fully prepared" (emphasis added).

No elected official should accept a situation in which there is a "high risk" that the American military cannot execute our national defense strategy or is insufficiently prepared to fight our wars. Yet this is the situation the next president will face. Such a state of affairs contravenes their constitutional obligation to "provide for the common defense" and breaks the implied contract with members of our military that we will never allow them to go into battle without proper arms or training.

## The Way Ahead

As urgent as the need is to reverse course when it comes to providing adequate resources to the American military, this problem cannot be fixed overnight. It has taken more than 20 years to create this defense deficit, and it will take more than a few years to pull the military out of its current hole.

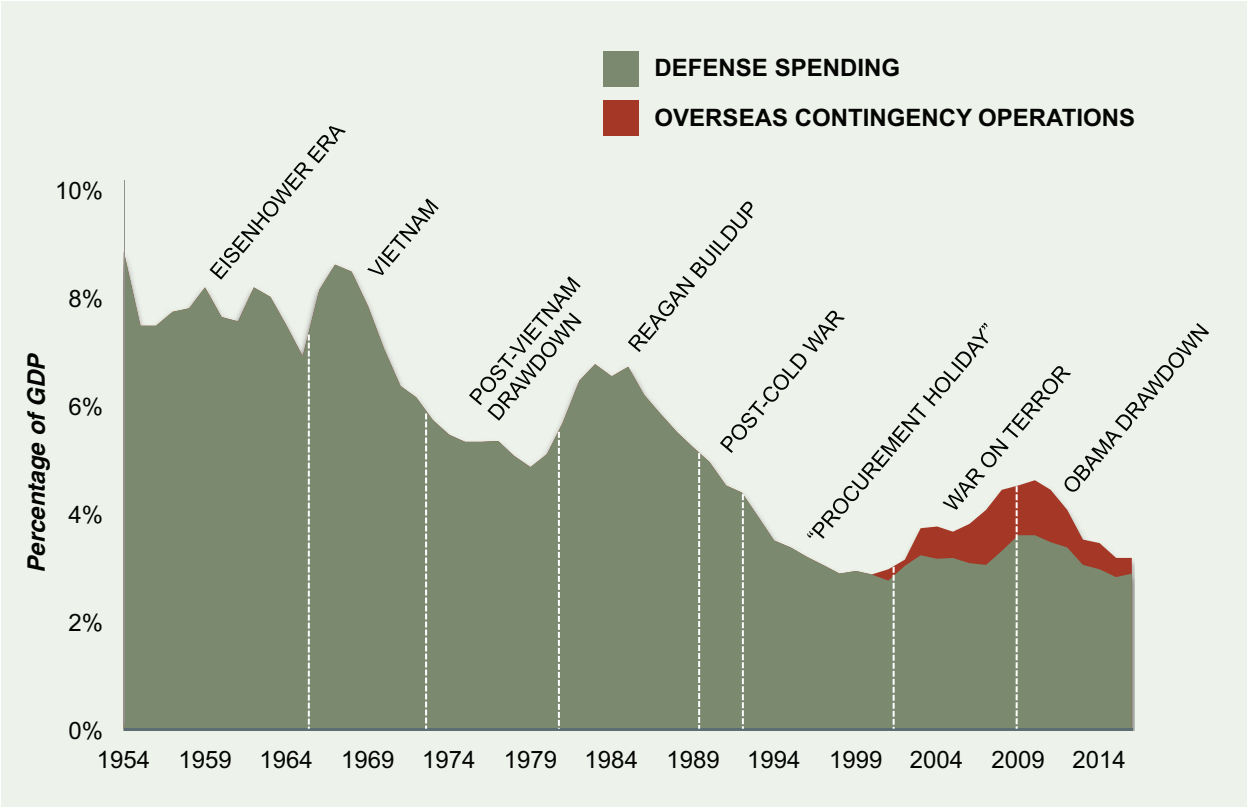
Admittedly, in the recent past, some small steps have been taken to relieve the Pentagon from the BCA's mandated caps on defense spending. For example, in 2013, the budget deal between Representative Paul Ryan (R-WI) and Senator Patty Murray (D-WA) lessened the sequestration bill by about $18 billion in 2014 and roughly $8 billion for 2015. Nevertheless, with the 2015 budget included, the Department of Defense is already some $290 billion short of the 2012 spending plan proposed by Secretary Gates. Even with the modicum of relief provided by Ryan-Murray, the 2014 base budget for defense ($496 billion) was $90 billion below the target ($586 billon) set by the earlier five-year defense plan, and in 2015 the budget was a full $100 billion short.

As the contest over the 2016 budget has revealed, neither the commander-in-chief nor the Congress is yet prepared to take the steps necessary to save the military from the depredation of the budget law. For FY 2016, both the Obama administration and Congress have proposed defense budgets that in different ways increase defense spending by $35–38 billion. As of this report's writing, however, there is neither any consensus on how that increase is to be put into law nor any agreement on substantially increasing funds for the military in future years. In short, until the larger political picture changes, the defense budget will likely remain at or slightly above sequestration levels—continuing the downward spiral of the military.

To reverse course, the first order of business for a new president and Congress is to end sequestration. As a short-term target, we agree with the NDP's recommendation that Congress and the president should repeal the BCA and provide a budget plan for defense that puts it on a path to meet the top-line number set out by Secretary of Defense Gates and the Obama administration in their last (FY 2012) pre-BCA budget proposal.

Although not sufficient to address the long-term deficit in defense modernization, a plan to reach the Gates figure by FY 2018 would begin to ease problems in readiness and acquisition programs and stave off

**Figure 9. Four Percent Is Affordable: The Decreasing Defense Burden**




Source: Calculated from data from the Office of the Undersecretary of Defense (Comptroller).

what is becoming a "hollow force." At the same time, Congress and the White House should agree to migrate back into the base budget, once it reaches the Gates baseline, those monies that are currently appropriated for programs and personnel in the Overseas Contingency Operations fund but that traditionally belong in the base budget.

Over the longer term, the next president and Congress should consider as a matter of national policy setting a floor of spending 4 percent of the country's GDP on defense, making it a goal to do so by the end of the next president's second term or the successor's first term. Frankly, given the cuts to and termination of numerous modernization programs in recent years, the Pentagon will need time to rebuild the military's research and development and modernization efforts to spend new monies wisely.

Although we recognize that tying the defense budget to a percent of GDP could run the risk of not funding the military sufficiently or, conversely, providing more than the military needs, it remains a solid benchmark for how much we ought to invest in the military and is one that a number of senior military and defense policy leaders have promoted as an appropriate yardstick for evaluating the adequacy of our defense investments. Moreover, historically, it is a relatively modest target when set against the amount of the country's GDP allocated for defense in the decades following World War II, as figure 9 shows.

Critics of this proposal argue that America's defense spending should be tied to the threats it faces. But history points to the fact that we are often surprised by the threats and conflicts we are faced with and, as such, need a more sustainable and reliable benchmark for

defense budgeting. Every president since the end of the Cold War, regardless of party, has sent America's military into harm's way in a conflict that neither he nor the intelligence community predicted.

Moreover, by stabilizing the target for defense expenditures, defense modernization plans are less likely to suffer the ups and downs and general uncertainties that come with the roller-coaster effect of past budgeting practices. Stability and predictability are key requirements for multiyear purchases and block buys, which help save money and get more "bang for the buck." Over the longer term, this means major acquisition programs are less likely to go through the boom-and-bust cycles that have typically increased unit costs of major weapon systems and platforms. As with a household budget, it is much easier to plan, save, and make necessary investments in home and education when there is some basic predictability in income from year to year.

Too often in recent years, we have asked the military to be the bill payer for addressing the country's deficits. (Not surprisingly, the $800 billion the Obama administration and Congress cut from the defense budget through the first three years of the current administration is more or less the same amount they agreed to spend on the "stimulus" package enacted in 2009.) The real problem, of course, is not the level of defense expenditures but the unchecked growth in spending on social entitlements, which is increasingly squeezing out monies available for discretionary accounts, such as defense and domestic programs.[52]

Historically, 4 percent of GDP for defense is well below what we have spent since World War II. Nor can it be argued that the defense "burden" prevented economic growth. To the contrary, America's economic growth in the postwar years has been tremendous and well documented, and it all occurred with significantly higher percentages for defense than today. If anything, it has been America's ability to deter the catastrophic conventional wars of the past, along with keeping open the global commons of sea, air, and space, that has provided the very ground on which the marked expansion of our own and the globe's prosperity has taken root and continued to grow. Is four pennies on the nation's dollar really too much to spend on national defense?

## Recommendations

In sum, the following steps should be taken to place America's military back on stable footing and on the proper path.

- Achieving a defense budget of 4 percent of GDP will not occur overnight. In the short term, the United States has an urgent need to reverse the present course of decline. Today, the defense burden is less than 3 percent of the GDP.[53] The short-term goal of returning to the Gates FY 2012 budget plan (figure 10) and the longer-term goal of 4 percent for defense is sustainable, affordable, and entirely consistent with renewed economic growth.

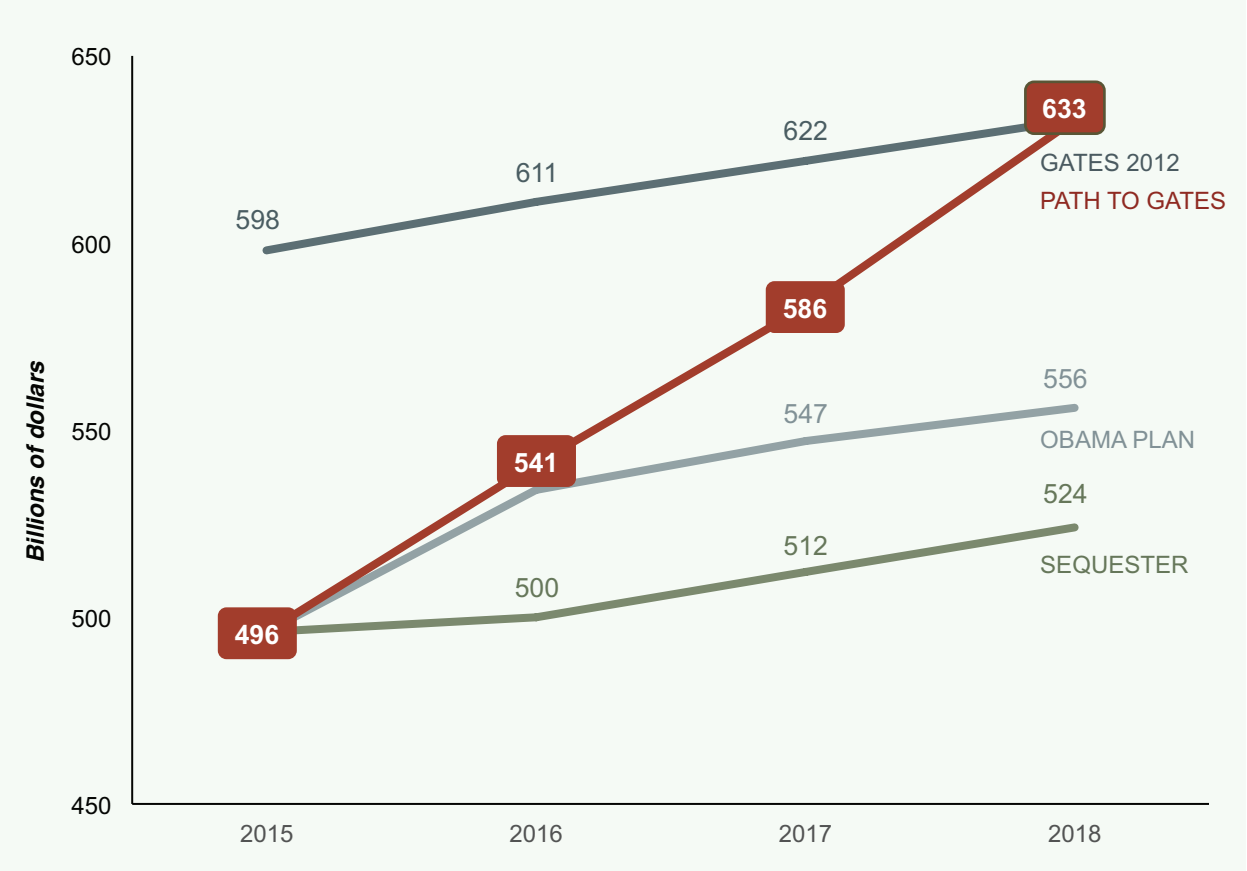
- Much of this renewed investment should be directed at rebuilding end strength and recapitalizing the force, making up for a "procurement holiday" of nearly two decades. The growth should be accomplished at a moderate pace over the next three years.

- Any new investment must be accompanied by acquisition and bureaucracy-reduction reforms that maximize the effect of the investment. Reforms alone cannot bridge the growing gap between US strategic ends and military means, but absent reforms—especially those aimed at moving new programs from development to actual fielding—the value of the investments will be diminished.

- For FY 2016, the base budget should increase to $541 billion, then $586 billion in FY 2017, before meeting the Gates 2012 budget at $633 billion in FY 2018. Even then, under government GDP projections, the defense burden would only be 3.08 percent of the GDP.

- Congress and the executive branch should set as national policy the longer-term goal of spending, at minimum, 4 percent of the country's GDP on defense.

**Figure 10. Proposed Path to the Gates 2012 Budget**




Source: Calculated from data from Office of the Undersecretary of Defense (Comptroller); Office of Management and Budget.

# 8

# Realistic Defense Reform

Because the need to rebuild the US military is so urgent and so great, the Department of Defense cannot afford to waste a single dollar. Further, to sustain the long-term build-up needed to accomplish this task, the Pentagon must demonstrate that it is a good steward of taxpayer money. Thus the project of rearmament depends, in large measure, on a complementary project of reform—one that should begin by reversing the failed reforms of the past. Indeed the Pentagon is facing a host of obstacles that extend well beyond declining budgets, cuts in force structure, and readiness shortfalls. Three of those challenges—a byzantine and ineffective acquisition system, a compensation system that is largely unchanged since the 1970s, and a large and seemingly unwieldy Pentagon civilian and contractor workforce—increasingly compete with each other under a nearly static defense budget. The rising cost of doing the country's military business as a result of these trends requires attention.

Reforms in these areas will neither be easy nor immediately produce the level of savings that makes up for the budget cuts the military has suffered or will suffer if sequestration-level spending remains in place. And, of course, our adversaries will not wait while we reform. Yet the long-term costs of inaction remain substantial if we want to ensure that defense dollars are optimized for creating and maintaining a properly sized, equipped, and postured American military.

## Acquisition: A Better Way

If there is one point of agreement among defense analysts of all stripes, it is dissatisfaction with the current acquisition system. Despite study after study, repeated changes in regulations, and numerous attempts at reform, frustration with the process is now greater than ever. Yet the need to improve the acquisition system grows more urgent with the US military potentially facing a declining edge in technological supremacy over key great-power competitors, while also facing a requirement to replace an aging inventory of equipment and military platforms. Two primary steps should be taken to help resolve this challenge.

First, policymakers must recognize there is no simple approach to acquisition reform. To increase efficiency and cost-effectiveness, we need to tie the procurement of the military's wide array of systems and supplies to distinct markets, recognizing that acquisition systems will vary by platform, information technology, service, and commodity. As such, wherever possible, the Defense Department should embrace commercial technologies, being more selective regarding when it chooses to rely on a defense-unique industrial base. Competition, deregulation, and profit incentives work in the commercial marketplace and can be made to work in the defense marketplace as well.

Second, three concurrent acquisition reform approaches should be considered, each tailored to the required industrial base and acquisition type. The first is to modernize the force quickly, buying systems currently in development using proven cost-saving measures such as multiyear procurement authority. The second is a short-term approach to bypass the traditional acquisition path, with its costly system of oversight and micromanagement, and support more immediate procurements, similar to the process used to acquire Mine-Resistant Ambush-Protected vehicles in the late 2000s. Finally, a long-term effort to design a new system from the ground up is necessary to meet the needs of future modernization programs.

## Buying More Costs Less

Acquisition reform should seek to maximize value from the existing system. The first order of business is to address the procurement holiday of the last 25 years by looking at current production lines, which the United States has spent an incredible amount of capital and effort developing. Much too often, when the Pentagon begins procuring a new system, the government buys fewer units than originally planned. Doing so underutilizes the production line, driving up the per-unit costs, which, in turn, often produces the kind of sticker shock that leads to further program cuts. Although some programs have a history of development problems with cost overruns and schedule slippages, the reality is that these are sunk costs when it comes time for actual procurement. The only way to substantially reduce per-unit costs is to buy more copies of a system, allowing the manufacturer to achieve greater efficiencies through economies of scale.

Nonetheless, continuing the near-sequestration-level budgets will produce even harder choices about future production. Fewer weapons will be bought for more money, and unit costs will skyrocket even more. Breaches of arbitrary cost ceilings, such as those imposed by the outdated 1982 Nunn-McCurdy Act, will become commonplace, and the Pentagon will face high termination fees if it closes down production lines. Foreign sales or maintenance contracts may sustain some of these lines—but not all of them. To prevent this death spiral, existing production lines will require additional funding in the near term to support the recapitalization of the force. As Congress makes more resources available, it should consider granting additional multiyear procurement and block buy contracting authority to provide greater stability of production. Exemplary programs such as the *Virginia*-class submarines, *Arleigh Burke*–class destroyers, and C-130J transport aircraft are successfully exploiting this authority today.

## Flexible Acquisitions and New Business Practices

Existing exemptions and acquisition rules can also be employed to bolster near-term procurement efforts and simplify the acquisition of commercial goods. Working within the current system, the Defense Department could develop innovative capabilities and reform its business processes, including expanding rapid acquisition authorities and broadening commercial purchasing options.

Following 9/11, the Pentagon was able to use rapid acquisition authorities to develop and procure a number of new systems quickly. In doing so, it emulated the buying practices of Special Operations Command, which has had its own long-standing special acquisition authority. Now that US forces are ending combat operations in Afghanistan, these ad hoc organizations and processes are in danger of being eliminated. Immediate steps should be taken to be sure these processes are not done away with. In fact, the Pentagon should extend these types of authorities beyond wartime requirements to apply to a broader swath of weapons systems required by combatant commanders. The fact is, in wartime, when time and money mattered more than bureaucratic process, the military set aside the highly regulated procurement system that had choked off modernization and innovation. Though little commented on at the time, this was an overwhelming vote of no confidence in the acquisition "reforms" of the past three decades.

The Pentagon has identified a number of new tools and development projects necessary for maintaining America's technological dominance as part of its plan to develop a new offset strategy. Yet the commercial marketplace has already made significant advances in areas such as data analytics, cloud computing, 3-D printing, robotics and autonomous vehicles, cybersecurity, and electronic warfare technology. The companies developing these technologies face significant barriers to doing business with the Pentagon. The existing statutory exemption for commercial acquisitions, established in 1994, has been undermined by new restrictions over the last decade. This exemption needs to be strengthened and other barriers must be removed so that the Pentagon can capitalize on recent commercial developments and innovations, saving money and acquiring the best available technology.

To better serve a military in urgent need of both breakthrough technologies for the future and immediate

improvements in inventory, the Defense Department should move toward a time-based acquisition process that values time as well as traditional measures of performance: a good-enough system fielded promptly—and then improved—is better than a "perfect" one tomorrow or the next day. Such a change would ensure that promising innovations can be rapidly prototyped and fielded without unnecessary regulations or duplicative testing—or be quickly terminated if they fail. Shifting from a requirements-based system to a time-based system will also ensure that long-term programs do not incur cost overruns and schedule slippages while attempting to achieve perfection.

The military should also expand its use of Other Transactions Authority, which allows the government and contractors to avoid most traditional acquisition rules. These authorities are the single best tool to bring nontraditional companies and ideas into the defense marketplace, and they have played a crucial role in developing current Defense Department unmanned systems, robotics, and information technology programs. Expanding the use of Other Transaction Authority would also benefit traditional contractors by serving as a testing ground for new acquisition procedures.

## Starting from Scratch

The previous recommendations would provide short-term relief. Over time, however, a full-scale repair of the Pentagon acquisition system is needed. To get there, we need to roll back current procurement laws, regulations, and reporting requirements as Congress and the White House review the existing system in its entirety. Current rules, laws, and regulations should be given a mandated periodic review—ideally every five years—while any new legislation expanding acquisition regulations should have sunset provisions attached.

Similarly, legislation that waives or provides exemptions to the current process should remain permanent until the underlying reason for the exemption is eliminated. The executive branch should also be mandated to review acquisition regulations and justify any surviving provision before Congress.

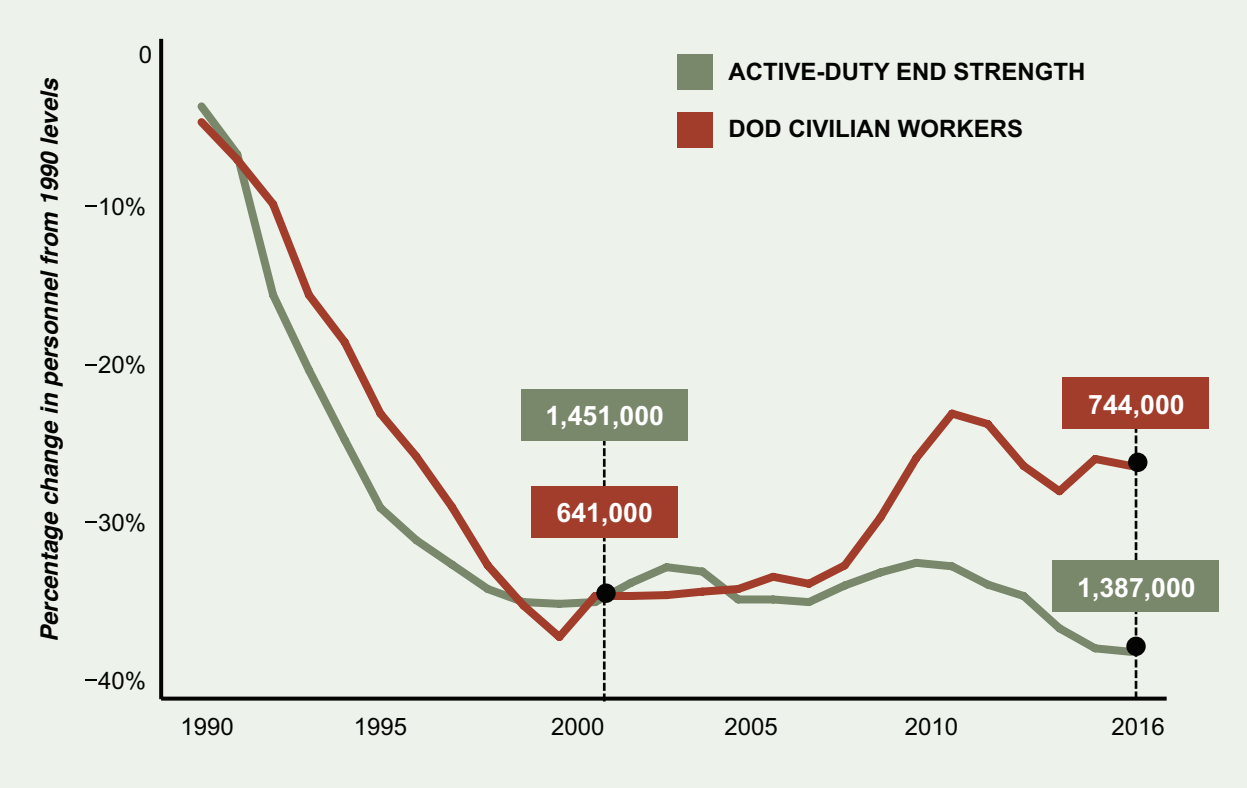
The overhaul of the acquisition system will likely need the assistance of two independent review panels. The first, comparable to the 1986 Packard Commission, would provide strategic guidance on the goals and necessary roles of the acquisition system, and the second would provide guidance on how to translate the first panel's strategy into legislation and regulatory language while scrubbing existing laws, regulations, policies, and practices to conform to this strategy. But most of all, it requires politicians of all persuasions to recognize that the defense industry—speaking broadly—has changed beyond recognition from the late Cold War; it is no longer an "industrial complex" to be regulated. It must be managed to again become an "arsenal of democracy," one that accelerates technological advances rather than retards them.

## Implementing Recommendations on Military Compensation Reform

The current military compensation system was established in the 1970s, but some of its constituent parts date back to the period immediately following World War II. This system is outdated and overdue for reform. It ought to be replaced by a new model to provide better value and a more modern set of benefits to future service members while also arresting the rising cost of military compensation. Congress should enact comprehensive military retirement, education, and health care reform on the basis of the recommendations of the Military Compensation and Retirement Modernization Commission.[54]

The prospect of both extending benefits to more service members and creating a more sustainable system for all should be enticing to lawmakers. Compensation reform typically is primarily concerned with providing more benefits to a wider group of recipients while also potentially slowing the rate of growth in spending. But, as the commission report rightly notes, the focus should be on increasing the value and accessibility of the military benefits system. Most of the actual cost savings reside in the commission's proposed military health care reforms and changes to GI Bill transfer thresholds. Efforts to cherry-pick popular reforms

**Figure 11. Boots vs. Bureaucrats: The Growing Civilian Workforce**




Source: Office of the Undersecretary of Defense, *National Defense Budget Estimates for FY 2016*, March 2015, http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2016/FY16_Green_Book.pdf.

only make the needed ones harder to enact later. Only through a holistic approach can Congress ensure that all the changes better align with a continuum of service model for the future force and complement talent management initiatives already under way.

Although such reforms will have budgetary benefits, the larger effect will be to give the armed services greater flexibility to recruit, retain, and reward what will continue to be very demanding service. When we ask a very few in uniform to do so much—and the missions outlined in this report would require the highest levels of patriotism and professionalism—we must find ways to encourage the very best among us to answer the call. No amount of money or benefits alone can account for the risks and sacrifices of military service. We must ensure that people in uniform are properly compensated—that they can derive meaning as well as pay from their service.

## Smartly Shrinking the Pentagon Bureaucracy

When the American military grew after 2001, so too did the Pentagon's administrative and civilian support offices (figure 11). This supporting workforce is so large and complex that it is exceedingly difficult to determine the best opportunities for increased efficiency. The truth is that no one knows what many of these people do. In fact, the Government Accountability Office has consistently found that the Pentagon lacks the data necessary to optimize its workforce. Although in recent years the Pentagon has made progress in strategic workforce planning, much work remains. Of note, the Government Accountability Office has criticized the Pentagon for failing to assess the correct balance between the uniformed military personnel, civilians, and contractors it employs.

The president's 2016 budget calls for a 0.4 percent reduction in the defense civilian workforce from 2015

levels while imposing a 1 percent decrease in active-duty end strength.[55] This request reflects a recent pattern in which Pentagon civilians have often fared better than their uniformed counterparts. For instance, from 2009 to 2015, while Department of the Navy active-duty and reserve end strength declined, its civilian end strength grew. From 2009 to 2015, overall active-duty end strength declined 7 percent even as the civilian workforce grew 5 percent. The Pentagon seems to be coming around to the idea of shrinking its civilian workforce—its expected 2015 workforce is actually about 5,000 smaller than it anticipated last year—but reductions must be implemented more strategically than in the past.

Indeed, the manner in which the Pentagon "right-sizes" its civilian workforce will determine whether the effort is a success. In the aftermath of the Cold War, from 1989 to 2002, the defense civilian workforce fell by 38 percent. Yet as the Government Accountability Office has found, this reduction was not governed by careful assessments of the functions or shape of the workforce. Instead it was achieved through hiring freezes, voluntary separations, and attrition. The result was a smaller civilian workforce, not an optimized one.

## Getting Real on Reform

Although both the Pentagon and outside reviews such as the 2014 National Defense Panel have made it clear that defense reform, no matter how comprehensive, cannot make up for rapidly declining defense resources, it is equally true that the Pentagon cannot fully right its ship in the absence of reform.

From acquisition to compensation to the size and makeup of the civilian workforce, the status quo is not working. Costs are continuing to escalate even as combat power declines and fewer people serve in uniform. Pentagon leaders must design solutions that address growing problems comprehensively rather than in a one-off manner. But they must do so in partnership with the Congress to avoid the kinds of political stalemates that have produced the current situation in which reforms are much discussed but rarely realized. Doing so will be difficult without a fundamental philosophy of reform. The correct path is clear, but challenging: processes should be simple and short, and those in charge should face fewer reviews but greater accountability. Finally, the US military needs bureaucrats who are as good as the soldiers, sailors, airmen, and Marines they serve. They need to be fairly compensated so that they are inspired to play their part in the crucial work of rebuilding America's military.

# 9

# Conclusion

It has been the purpose of this report to set out the military missions, force requirements, reforms, and price necessary to sustain American geopolitical leadership and the general global stability, broadly shared prosperity, and remarkable liberty that leadership has secured since the end of World War II. We believe that this "world America made," as Robert Kagan calls it, is a very valuable thing. It behooves us to keep it.

The cost of keeping it, as this study should make plain, is significant. What we recommend here is a comprehensive and undoubtedly long-term program of rearmament. We cannot quickly make up for the time we have squandered over the last three decades. Rebuilding the US military services and a defense industry to support them will take time and wise leadership as well as money. A rapid, Reagan-like buildup would not be wise; with the few exceptions we have identified above, neither the military nor the industrial structures are prepared for a flood of funding. They would only choke on it. A moderate buildup that can be sustained is far better than a crash buildup that would cause a wreck. And although a moderate buildup is more than affordable, it will not be cheap.

Nevertheless, reversing our current course is a matter of great urgency. To begin with, the world we have made is unraveling. No one threat is either existential or the single root cause or solution. But the system is rotting, and it is doing so faster than imagined; it is sobering to recall how quickly the Soviet empire imploded, and it is hubris to think that the liberal, peaceful, and prosperous American world is inherently eternal. If America and its allies do not make the world, our adversaries will.

The Obama administration has been willfully, even maliciously, neglectful of the world it inherited, the work of presidents of both parties, and the service of tens of millions of Americans in uniform for the better part of the last century. Afraid to do "stupid stuff," it has done almost nothing, and what it has done—such as the Libya war, which saw the framing of the "lead-from-behind" Obama Doctrine—it has done fecklessly. Where America was once globally engaged, it is now globally absent. In Europe, Vladimir Putin bites, burps, and then bites again. He will continue to chew and choke unless someone stops him; Russia may be fundamentally weak, but it is feasting on those who are weaker still. In the Middle East, we have walked away, and a whole host of jackals have come to tear at the carcasses, not just in Iraq but across the Muslim world. In return for a very uncertain promise to constrain its nuclear program, Iran has been invited to take our place as the region's leading power and offered a giant jackpot with which to finance its ambitions. In the Pacific, at the locus of Obama's famous "pivot," China is applying Putin's methods in a maritime context—although rather than invade islands, Beijing makes them anew; the result is similar.

In sum, the next president will face a world Obama is unmaking, with crises on many fronts and multiple crises in the Middle East. But as important as it will be to reassert America's interests internationally, it will be even more crucial to restore the sinews of American power. The next president cannot simply start swinging but must build muscle and begin training, for, as we have said, the capacity and capability of America's armed forces have atrophied. More than reengaging in any particular place, a commitment to rearm would have a global effect.

The unmaking of our military has likewise been a key component of the Obama Doctrine. The pattern of behavior is unmistakable: with a weaker military, the president predicts, America will not "militarize" its foreign policy. Thus, in place of military power, his administration has offered diplomatic "smart power"

and cultural "soft power." But the result, contrary to theory, is that we have alienated allies while attracting adversaries. Opposing the United States is an increasingly cheap thrill. If the next president wants to retain the world America once made, that individual must rebuild the military America once had.

This report is meant to be a blueprint for that reconstruction. We have been clear in describing America's enduring geopolitical goals and in revealing the security structure of today's international system. We have avoided the traditional temptation of defense reviews to describe war in the abstract—as "contingencies" that are "major theater" or "smaller scale" in scope—and talked at some length about the defense of the homeland and the need to reestablish a favorable balance of power across Eurasia; we are not fighting the last war or some vague "next war" but the wars that stare us in the face. And deterrence—war not fought—remains a key element of our posture. But whether we are fighting wars or deterring them, our worldwide interests endure.

Finally, we do not shrink from seeing the American experiment, in the broader world as at home, as a moral proposition. Yes, America is safer when the world is more free, but it is a devotion to liberty that justifies our use of force. "Governments are instituted among men," declared America's Founders, to secure humanity's political rights to "Life, Liberty and the pursuit of Happiness." These remain the purposes of our power: the principles that drove us to make the world we have made and must drive us to keep it.

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# About the Authors

## About the Marilyn Ware Center for Security Studies

The Marilyn Ware Center for Security Studies seeks to define the ends, ways, and means necessary to restore US military preeminence and preserve a balance of power in favor of freedom. Codirected by Tom Donnelly and Gary Schmitt, the center's team of scholars includes an array of former policymakers, Pentagon officials, and senior congressional staff dedicated to detailing a program to reform and enhance America's military and provide policy options to address the country's security requirements.

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