2015 Index of U.S. Military Strength

Assessing America’s Ability to Provide for the Common Defense
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Edited by Dakota L. Wood
This work is dedicated to the memory of Kathryn and Shelby Cullom Davis.
# Table of Contents

Contributors................................................................................................................ix
Acknowledgments......................................................................................................... xi
Preface............................................................................................................................ xiii
   Jim DeMint
Introduction...................................................................................................................... 1
Executive Summary......................................................................................................... 9
What Is National Security?............................................................................................. 17
   Kim R. Holmes, PhD
Building the Right Military for a New Era: The Need for an Enduring Analytic Framework ......................................................................................................................... 27
   Daniel Gouré, PhD
Rebalancing to the Pacific: Asia Pivot or Divot?............................................................. 37
   Bruce D. Klingner
The Importance of Special Operations Forces Today and Going Forward.................... 47
   Steven P. Bucci, PhD
Strategic Capabilities in the 21st Century........................................................................ 61
   Michaela Dodge and David R. Inserra
Regions of Enduring Interest: Latin America, the Caribbean, and Africa........................ 89
   Ana R. Quintana and Charlotte M. Florance
Assessing the Global Operating Environment................................................................ 101
   Europe....................................................................................................................... 103
   Middle East............................................................................................................. 117
   Asia.......................................................................................................................... 131
   Conclusion: Scoring the Global Operating Environment............................................ 147
Assessing Threats to U.S. Vital Interests......................................................................... 157
   Europe....................................................................................................................... 159
   Middle East............................................................................................................. 171
   Asia.......................................................................................................................... 189
   Conclusion: Global Threat Level.............................................................................. 215
An Assessment of U.S. Military Power............................................................................ 227
   U.S. Army............................................................................................................... 243
   U.S. Navy............................................................................................................... 247
   U.S. Air Force......................................................................................................... 255
   U.S. Marine Corps................................................................................................. 259
   U.S. Nuclear Weapons Capability........................................................................... 263
Glossary of Terms and Abbreviations............................................................................. 279
Methodology.................................................................................................................. 287
Appendix: Military Capabilities and Corresponding Modernization Programs............ 293
About The Heritage Foundation.................................................................................... 313
Contributors

Heritage Experts

Dakota L. Wood is Senior Research Fellow for Defense Programs in the Douglas and Sarah Allison Center for Foreign and National Security Policy, of the Kathryn and Shelby Cullom Davis Institute for National Security and Foreign Policy, at The Heritage Foundation. He served for two decades as an officer in the U.S. Marine Corps, including service as a strategic analyst for the Commandant of the Marine Corps and the Secretary of Defense’s Director of Net Assessment.

Steven P. Bucci, PhD, is Director of the Allison Center. He served for three decades as a U.S. Army officer, including as Military Assistant to the Secretary of Defense, and as the Deputy Assistant Secretary of Defense for Homeland Defense.

James Jay Carafano, PhD, is Vice President for the Davis Institute, and the E.W. Richardson Fellow, at The Heritage Foundation. He served for 25 years as a U.S. Army officer and taught at a number of universities, including the National Defense University.

Dean Cheng is a Senior Research Fellow in the Asian Studies Center of the Davis Institute. He specializes in China’s military and foreign policy.

Luke Coffey is Margaret Thatcher Fellow in the Margaret Thatcher Center for Freedom of the Davis Institute. He joined Heritage after service as the senior special advisor to the Secretary of Defence of the United Kingdom.

Lisa Curtis is a Senior Research Fellow in the Asian Studies Center. She has served with the Central Intelligence Agency, the U.S. Foreign Service, and the Senate Foreign Relations Committee staff.

Michaela Dodge is Policy Analyst for Defense and Strategic Policy in the Allison Center. She specializes in missile defense, nuclear weapons modernization, and arms control.

Charlotte M. Florance is Policy Analyst for Economic Freedom in Africa and the Middle East in the Allison Center. She served on the Senate Homeland Security and Governmental Affairs Committee staff and with Catholic Relief Services in Kenya.

Nile Gardiner, PhD, is Director of the Margaret Thatcher Center for Freedom. He served as foreign policy researcher in the Private Office of Prime Minister Margaret Thatcher of the United Kingdom.

Daniel Gouré, PhD, is a Vice President at the Lexington Institute. He served as the Director of the Office of Strategic Competitiveness in the Office of the Secretary of Defense.

Kim R. Holmes, PhD, is a Distinguished Fellow at The Heritage Foundation. He served as the Assistant Secretary of State for International Organization Affairs.

David R. Inserra is Research Associate for Homeland Security and Cybersecurity in the Allison Center. He specializes in homeland security issues, including cyber and immigration policy, and the protection of critical infrastructure.

Bruce D. Klingner is a Senior Research Fellow for Northeast Asia in the Asian Studies Center. He served for two decades at the Central Intelligence Agency and the Defense Intelligence Agency.
Daniel Kochis is a Research Assistant in the Margaret Thatcher Center for Freedom.

Walter Lohman is Director of the Asian Studies Center. He served on the Senate Foreign Relations Committee staff, in the Office of Senator John McCain, and as Executive Director of the U.S.-ASEAN Business Council.

Emil Maine is Research Assistant for National Security in the Allison Center.

James Phillips is Senior Research Fellow for Middle Eastern Affairs in the Allison Center. He served at the Congressional Research Service and at the East-West Center.

Ana R. Quintana is Policy Analyst for Latin America in the Allison Center.

Paul Rosenzweig is a Visiting Fellow at The Heritage Foundation. He served as Deputy Assistant Secretary for Policy in the Department of Homeland Security.

Diem Nguyen Salmon is Senior Policy Analyst for Defense Budgeting in the Allison Center. She specializes in defense platforms and military contracting practices.

Brian Slattery is Research Associate for Defense and Security Studies in the Allison Center.

Riley Walters is a Research Assistant in the Allison Center.

External Reviewers

David Isby

Kenneth Katzman, PhD

James Andrew Lewis is Director of and Senior Fellow in the Strategic Technologies Program at the Center for Strategic and International Studies.

Thomas G. Mahnken, PhD

Mark Schneider, PhD, is Senior Analyst at the National Institute for Public Policy.

Ambassador David J. Smith is Senior Fellow and Cyber Center Director at the Potomac Institute for Policy Studies.

Douglas E. Streusand, PhD, is a Professor at the Marine Corps Command and Staff College at the Marine Corps University.
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Nearly four decades ago, Phillip N. Truluck began building The Heritage Foundation’s research department based on quick response to policy issues facing decisionmakers and placing credibility first. After assuming the role of Executive Vice President and chief operating officer in the mid-1980s, he continued to maintain the quality, quantity, integrity, and effectiveness of Heritage research. With this Index of U.S. Military Strength as the final major Heritage publication on his watch, we express our appreciation for his dedicated leadership and for building a strong institution that will carry forward and build upon his life’s work.

Brian Slattery was a true workhorse in coordinating the myriad details and supporting efforts necessary to take this project from inception to completion. His understanding of the project and detailed knowledge of the resources available at Heritage were invaluable.

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Ana Quintana not only contributed the essay on Latin America and the Caribbean but took on the challenge of “herding cats” when it came to ensuring our subject matter experts met deadlines for the graphics that amplify the text. Similarly, Charlotte Florance not only authored the essay on Africa but volunteered her considerable skills to bring the discussion of the Middle East across the finish line.

Luke Coffey set the tone and scope for our chapter on the global operating environment, authoring the section on Europe, the discussion of Russia, as well as providing substantial editing support for much of the material in threats chapter.

The editorial experience of Senior Editor Richard Odermatt, Deputy Director of Research Editing Therese Penefather, and Senior Copy Editor William T. Poole, along with the creative talents of Senior Data Graphics Editor John Fleming, Publication Production Specialist Jay Simon, online web designer/developer Jeph Christoph, and Creative Director Melissa Bluey, were instrumental in ensuring the accuracy, clarity, and superb presentation of this material in print and online.

Lastly, special recognition goes to Dr. James Jay Carafano who first recognized the gap this Index is meant to fill and who provided invaluable direction on the general approach to be taken in embracing the challenge. He has hopefully started us along a path toward a better informed understanding and wider appreciation of America’s ability to “provide for the common Defence” that undergirds The Heritage Foundation’s vision of “an America where freedom, opportunity, prosperity, and civil society flourish.”
The Heritage Foundation seeks a better life for Americans, which requires a stronger economy, a stronger society, and a stronger defense. To help measure the state of the economy, our Institute for Economic Freedom and Opportunity publishes annually the *Index of Economic Freedom*. To help measure the state of society, our Institute for Family, Community, and Opportunity publishes annually the *Index of Culture and Opportunity*. Now, to help measure the state of our defenses, our Kathryn and Shelby Cullom Davis Institute for National Security and Foreign Policy publishes this inaugural edition of the annual *Index of U.S. Military Strength*. In addition to acknowledging all those who helped prepare the *Index of U.S. Military Strength*, The Heritage Foundation expresses its appreciation to the members of the U.S. armed forces, who protect the liberty of the American people in a dangerous world.
Preface

Among the few enumerated powers given to the federal government by the U.S. Constitution are those pertaining to its responsibility to provide for the security of the United States of America. Unlike so many things the government does that can arguably be done more effectively and efficiently by the states or the people themselves, the defense of our country and its interests can only be done effectively and efficiently by the federal government. When our government fails in this responsibility, it undermines the foundation upon which all other aspects of our country are built or made possible.

The vision of The Heritage Foundation is “to build an America where freedom, opportunity, prosperity, and civil society flourish.” Arguably this begins with ensuring an America that does not have to fear the threats of foreign powers, that is strong enough to protect its people and defend its interests abroad, and that earns the respect, friendship, and support of like-minded countries around the world to the benefit of our people.

But if our government is to “provide for the common Defence and general Welfare of the United States” it seems reasonable that it would take pains to know just what it needs to do so, based on a set of clearly articulated national interests and an understanding of threats to those interests. Further, the citizenry of the United States would be reasonable to expect that their government regularly and consistently reviews such matters to ensure the military capabilities of America are always sufficient to fulfill the purpose for which they are raised and sustained in the first place—to ensure that our country and its interests are protected. Unfortunately, this does not happen.

Our federal government has no consistent, standardized, and publicly accessible approach to reviewing on a year-by-year basis America’s ability to defend its interests. Congress concluded much the same thing in 1996 when it mandated that a “comprehensive examination of the defense strategy, force structure, force modernization plans, infrastructure, budget plan, and other elements of the defense program and policies” was needed and that such a review should be completed by the Secretary of Defense every four years. However, what started as a good idea to impose discipline on the process of linking the ends, ways, and means of national defense quickly devolved into a bureaucratic exercise in program justification devoid of the strategic outlook mandated by Congress. As a result, there is no consistent reference available to Congress, to the American people, or even to the military by which one can ascertain whether America’s security condition is improving or degrading from one year to the

1. U.S. Constitution, Article 1 Section 8.
next. By extension, it is hard to know whether the taxes paid by Americans and spent on defense are actually being put to good use.

We harbor no illusion that we can replicate the detailed analysis that the military services are capable of performing. But we are confident in our ability to identify the vital interests of our country, assess the condition of our world and the challenges posed by competitors, and report on the status of our nation’s military forces given the wealth of information that is publicly available and reported to Congress by the Department of Defense and the military services.

This inaugural edition of The Heritage Foundation’s *Index of U.S. Military Strength* presents our research and findings. We have marshalled a remarkable array of talent, experience, and judgment not only from within our own team but also from a wide range of subject matter experts in academia, the defense analytic community, industry, government agencies, and the military establishment who generously contributed their time and talents to this effort, most often with no desire for public acknowledgement.

It is our hope that Members of Congress, their staffs, our nation’s security professionals, and all Americans who have an interest in the security, freedom, and future of our country find this *Index* of use in discussing the condition of America’s military strength.

Jim DeMint, President
The Heritage Foundation
January 2015
Introduction

The United States maintains a military force primarily to protect the homeland from attack and to protect its interests abroad. There are secondary uses for the military—such as assisting civil authorities in times of emergency or deterring enemies—that amplify other elements of national power such as diplomacy or economic initiatives; but above all else, America's armed forces exist so that the U.S. can physically impose its will on an enemy and change the conditions of a threatening situation by force or the threat of force.

This Heritage Foundation Index of U.S. Military Strength gauges the ability of the U.S. military to perform its missions in today's world, and annual editions of this Index will provide the basis for measuring improvement or weakening of that ability.

The United States prefers to lead through "soft" elements of national power: diplomacy, economic incentives, and cultural exchanges. When soft approaches such as diplomacy work, that success often owes much to the knowledge of all involved that U.S. "hard power" stands silently in the diplomatic background. Soft approaches cost less in manpower and treasure than military action and do not carry the same risk of damage and loss of life; but when confronted by physical threats to U.S. national security interests, soft power cannot substitute for raw military power.

Consequently, it is critical to understand the posture, or state of affairs, of the United States' military with respect to the country's vital national security interests, threats to those interests, and the context within which the U.S. might have to use "hard power." Further, it is important to know how these three areas—operating environments, threats, and the posture of the U.S. military—change over time given that such changes can have substantive implications for defense policies and investments.

In the opening paragraph of the U.S. Constitution, the people state that one of their handful of purposes in establishing the Constitution was to "provide for the common defence." The enumerations in the Constitution of limited powers for the federal government include the powers of Congress "To declare War... To raise and support Armies... To provide and maintain a Navy... To provide for calling forth the Militia... To provide for organizing, arming, and disciplining, the Militia" and the power of the President as "Commander in Chief of the Army and Navy of the United States, and of the Militia of the several States, when called into the actual Service of the United States." With such constitutional priority given to defense of the nation and its vital interests, one might expect the federal government to produce a standardized, consistent reference work on the state of the nation's security—a way to assess or measure the threats the nation faces, the environments in which the U.S. military operates, and the posture of the U.S. military. No such single volume exists to allow comparisons from year to year.

To be sure, there are various studies and reports that seek to influence government's understanding of the world and how best to engage it:
The intelligence community produces various worldwide and country-specific threat assessments as well as a global security environment overview that looks at macro trends every four years.

After the start of a new presidential term, the Department of Defense produces its Quadrennial Defense Review report, which is followed by a critique written by a congressionally chartered independent panel.

The President issues (or in some years fails to issue) the national security strategy report required by law (50 U.S.C. 3043) and issues annually a proposed budget for national defense called for by law (31 U.S.C. 1105), the Secretary of Defense issues an annual report required by law (10 U.S.C. 113) and regular program and budget guidance, and the Chairman of the Joint Chiefs of Staff issues a National Military Strategy required by law (10 U.S.C. 153), all of which address various military subjects, but none of which consistently measures over time U.S. military strength in current and expected future contexts.

All of the military services conduct their own studies that inform the capabilities they believe they need to accomplish their assigned missions. The information gained from these studies and approved departmental guidance drives the services’ budget submissions each year, as well as the specifications sent to manufacturers regarding warfighting equipment and platforms.

The U.S. geographical combatant commanders (Africa, Central, Europe, Northern, Pacific, and Southern), in collaboration with the Joint Staff that serves the Chairman of the Joint Chiefs of Staff and functional combatant commanders (Special Operations, Strategic, and Transportation) and the military services, develop and revise numerous warfighting plans and planning scenarios that attempt to capture the interplay between enemy capabilities, aspects of the operating environment that would affect U.S. military operations, and the implications of war objectives for the size, capability, and employment concept of the force needed to win.

The senior leadership—the President as Commander in Chief and the Secretary of Defense, often advised by the Chairman of the Joint Chiefs of Staff—provide guidance and direction based on their understanding and articulation of the what, where, how, and why of defense planning and prioritization of efforts.

Congress commissions and receives innumerable studies (usually platform-focused) from its own staff organizations (the Congressional Research Service and Government Accountability Office, among others) that inform their deliberations on defense appropriations.

The defense analytic community, made up of the various public policy “think tank” organizations that try to inform the public debate on defense and national security matters), publishes various reports throughout any given year.

If any particular insight can be derived from this massive effort, it is that Washington, D.C., is awash in a flood of papers regarding the current state of security affairs.

Yet for a number of reasons, consistency and consensus remain elusive. Reports from successive presidential Administrations vary according to each Administration’s priorities. Congressional efforts are inevitably interpreted along partisan lines, with reports’ conclusions and recommendations the inevitable result of compromise influenced by the interests of key constituents. Service efforts usually strive toward maximum capability within the constraints placed upon them by budgets and strategic guidance from the executive branch. Think tank reports tend to reflect the position of each institution along the ideological spectrum that defines the community. Finally, much of the official, deeply informed government work resides in the world of classified information, thus preventing review and deliberation in open venues.

What is missing in all of this research and debate is a publicly accessible reference document that uses a consistent, methodical, repeatable approach to assessing defense requirements and capabilities.

The Heritage Foundation seeks to fill this void with the Index of U.S. Military Strength, an annual assessment of the state of America's hard power, the geographical and functional environments relevant
to the United States’ vital national interests, and threats that rise to a level that put, or have the strong potential to put, those interests at risk.

From the outset, it was clear that any assessment of the adequacy of military power would require two primary reference points: a clear statement of U.S. vital security interests and an objective requirement for the military’s capacity for operations that would serve as a benchmark against which to measure current capacity. A review of relevant top-level national security documents issued by a long string of presidential Administrations makes clear that three interests are consistently stated:

- Defense of the homeland;
- Successful conclusion of a major war having the potential to destabilize a region of critical interest to the U.S.; and
- Preservation of freedom of movement within the global commons: the sea, air, outer-space, and cyberspace domains through which the world conducts business.

Every President has consistently recognized that one of the fundamental purposes of the U.S. military is to protect America from attack. While going to war has always been controversial, the decision to do so has been based consistently on the conclusion that one or more vital U.S. interests are at stake.

This Index embraces the “two-MRC requirement” — the ability to handle two major wars or two major regional contingencies (MRC) successfully at the same time or in closely overlapping time frames — as the most compelling rationale for sizing U.S. military forces. Dr. Daniel Gouré provides a detailed defense for this in his essay, which is further elaborated upon in the military capabilities assessment section. The basic argument, however, is this: The nation should have the ability to engage and defeat one opponent and still have the ability to do the same with another, to preclude someone’s exploiting the perceived opportunity to move against U.S. interests while America is engaged elsewhere.

This inaugural Index establishes a baseline upon which future editions will build. It is meant to be descriptive, not prescriptive; it will review the current condition of its subjects within the assessed year. In future editions, the Index will describe how conditions have changed from the previous year, informed by the baseline condition. In short, the Index will attempt to answer the question, “Have conditions improved or worsened during the assessed year?”

This study will also assess the U.S. military against the two-MRC benchmark and various metrics explained further in the military capabilities section. Finally, it will not offer policy recommendations to correct assessed shortfalls or deficiencies, leaving those for other Heritage work that will be informed by the Index.

Assessing the World and the Need for Hard Power

The assessment portion of the Index is composed of three major sections addressing the aforementioned areas of primary interest: America’s military power, the operating environments within or through which it must operate, and threats to U.S. vital national interests. For each of these areas, this publication provides context, explaining why a given topic is addressed and how it relates to understanding the nature of America’s hard-power requirements.

The authors of this study used a five-category scoring system that ranged from “very poor” to “excellent” or “very weak” to “very strong” as appropriate to each topic. This particular approach was selected so as to capture meaningful gradations while avoiding the appearance that a high level of precision was possible given the nature of the issues and the information that was publicly available.

Some factors are quantitative and lend themselves to discrete measurement; others are very qualitative in nature and can be assessed only through an informed understanding of the material that leads to an informed judgment call.

Purely quantitative measures alone tell only a part of the story when it comes to the relevance, utility, and effectiveness of hard power. Assessing military power or the nature of an operating environment using only quantitative metrics can lead to misinformed conclusions. For example, the mere existence of a large fleet of very modern tanks has little to do with the effectiveness of the armored force in actual battle if the employment concept is irrelevant to modern armored warfare (imagine, for example, a battle in rugged mountains). Also, experience and demonstrated proficiency are often deci-
sive factors in war—so much so that numerically smaller or qualitatively inferior but well-trained and experienced forces can defeat a larger or qualitatively superior adversary.

However digital and quantitative the world has become thanks to the explosion of advanced technologies, it is still very much a qualitative place, and judgment calls have to be made in the absence of certainty. We strive to be as objective and even-handed as possible in our approach and transparent in our methodology and sources of information so that readers can understand why we came to the conclusions we did and perhaps reach their own. The end result will be a more informed debate about what the United States needs in military capabilities to deal with the world as it is. A detailed discussion of scoring is provided in each assessment section.

In our assessment, we begin with the operating environment since it provides the geostrategic stage upon which the U.S. sees to its interests: the various states that would play significant roles in any regional contingency; the terrain that enables or restricts military operations; the infrastructure—ports, airfields, roads, and rail networks (or lack thereof)—on which U.S. forces would depend; and the types of linkages and relationships the U.S. has with a region and major actors within it that cause the U.S. to have interests in the area or that facilitate effective operations. Major actors within each region are identified, described, and assessed in terms of alliances, political stability, the presence of U.S. military forces and relationships, and the maturity of critical infrastructure.

Our assessment focuses on three key regions—Europe, the Middle East, and Asia—because of their importance relative to U.S. vital security interests. This does not mean that Latin America and Africa are unimportant; rather, we address their current condition but do not measure them as we do the others since the security challenges within these regions do not currently rise to the level of direct threats to America’s vital security interests as we have defined them.

Next is a discussion of threats to U.S. vital interests. Here we identify the countries that pose the greatest current or potential threats to U.S. vital interests based on two overarching factors: their behavior and their capability. We accept the classic definition of “threat” as a combination of intent and capability, but while capability has attributes that can be quantified, intent is difficult to measure. We concluded that “observed behavior” serves as a reasonable surrogate for intent since it is the clearest manifestation of intent.

We based our selection of threat countries on their historical behavior and explicit policies or formal statements vis-à-vis U.S. interests, scoring them in two areas: the degree of provocative behavior they exhibited during the year and their ability to pose a credible threat to U.S. interests irrespective of intent. For example, a state full of bluster but with only moderate ability to act accordingly poses a lesser threat, while a state that has great capabilities and a pattern of bellicose behavior opposed to U.S. interests still warrants attention even if it is relatively quiet in a given year.

Finally, we address the status of U.S. military power in three areas: capability (or modernity), capacity, and readiness. Do U.S. forces possess operational capabilities that are relevant to modern warfare? Can they defeat the military forces of an opposing country? Do they have a sufficient amount of such capabilities? Is the force sufficiently trained, and its equipment materially ready, to actually win in combat? All of these are fundamental to success even if they are not de facto determinants of success, something we explain further in the section. We also address the condition of the United States’ nuclear weapons capability, assessing it in areas that are unique to this military component and critical to understanding its real-world viability and effectiveness as a strategic deterrent.

Topical Essays

Leading up to the assessment portion of the Index, the Index begins with a set of topical essays addressing overarching strategically important contextual policies relevant to national security. There will always be significant issues that bear upon America’s security interests, sometimes shaping them through articulated policy objectives. On other occasions, these issues are external events that generate new and unanticipated requirements. There are also items that do not fit neatly into one of our three assessment “buckets” but that nevertheless warrant attention given the effect they have on U.S. defense capabilities.

The opening essays provide a starting point for thinking about several important topics: national security; the military resources that are likely
necessary to meet national security requirements; the geostrategic prioritization of foreign affairs as articulated by the current Administration; the role that U.S. Special Operations Forces play both as an instrument of national security objectives and as a strategic enabler for the larger U.S. forces in conventional operations; and a set of capabilities and their respective environments that are complex and hard to measure but without which American power would be moribund: cyber, space, and nuclear.

Dr. Kim R. Holmes delves into “What Is National Security?!” and how we should think about it. Current policy debates about national security and the role of the U.S. military seem to include everything from stemming the rise of the world’s oceans to ensuring that people have sufficient choices among imported fruits at the grocery store. Dr. Holmes addresses this muddled thinking, dispatching outlandish notions as he helps us to focus on what really matters (or should matter) when we think about the vital interests of the United States.

Dr. Daniel Gouré’s “Building the Right Military for a New Era” reminds us of the historical basis for sizing U.S. forces to handle two simultaneous (or nearly simultaneous) major wars. Dr. Gouré reviews the multiplicity of studies that support this benchmark and provides some broad recommendations for what such a force would look like.

Bruce D. Klingner assesses the United States’ strategic pivot toward the Asia–Pacific region in his essay, “Rebalancing to the Pacific: Asia Pivot or Divot?”—a critical topic considering how this policy shift undergirds the Administration’s macro view of foreign policy priorities. Originally articulated by then-Secretary of State Hillary Clinton in her October 11, 2011, Foreign Policy essay “America’s Pacific Century,” the “Pacific Pivot” has generated quite a bit of discussion in policy circles. Many of these conversations center around the Pivot’s continued relevance given events in other geographic regions and the extent to which any real change either has occurred or is needed in terms of a redistribution of U.S. military resources.

Dr. Steven P. Bucci takes us on a tour of “The Importance of Special Operations Forces Today and Going Forward,” laying out who and what Special Operations Forces are, what they contribute to U.S. defense capabilities, and how we should think about them in terms of preventing strategic surprise and mitigating the consequences of crises in their duration and intensity.

In “Strategic Capabilities in the 21st Century,” Michaela Dodge and David R. Inserra provide primers on the little-understood domains of nuclear weapons (Dodge) and cyberspace/outer space–based systems (Inserra). Nuclear weapons have been the foundational element of the United States’ strategic deterrent capability since the end of World War II, but their deterrent value derives from the basic assumption that they are usable, which in turn rests on some level of confidence that they will work as advertised. How confident should we be about the assumption on which U.S. nuclear deterrence policy stands?

The U.S. military is critically dependent on space and cyber to deploy and operate effectively anywhere in the world. America’s opponents are aware of the importance of these domains and the capabilities needed to be successful in exploiting them, an awareness that has led to an increasingly intense competition in these areas—especially cyber. How are we doing in these strategic areas of competition? The authors help us understand the big picture by providing historical context and the state of play in each.

To round out the initial set of essays, in “Regions of Enduring Interest,” Ana R. Quintana and Charlotte M. Florance consider the regions of Latin America and the Caribbean and Africa, respectively, explaining the major dynamics in play in each one, why they are important to the United States, and which of their internal challenges, if left unaddressed, could pose larger threats to America’s vital national interests.

**Scoring U.S. Military Strength Relative to Vital National Interests**

The purpose of this Index is to better inform the national debate about defense capabilities by assessing the ability of the U.S. military to defend against current threats to U.S. vital national interests within the context of the world as it is. Each of the elements can change from year to year: the stability of regions and access to them by America’s military forces; the various threats as they improve or lose capabilities and change their behavior; and the United States’ armed forces themselves as they adjust to evolving fiscal realities and attempt to balance readiness, capacity (size and quantity), and capability (how modern they are) in ways that enable them to successfully carry out the missions assigned to them.

Each region of the world has its own set of characteristics that include terrain; man-made infra-
structure (roads, rail lines, ports, airfields, power grids, etc.); and states with which the United States has relationships. These traits combine to create an environment that is either favorable or problematic when it comes to U.S. forces operating against threats in each respective region.

Various states and non-state actors within these regions possess the ability to threaten, and have consistently behaved in ways that threaten, America’s interests. Fortunately for the U.S., these major threat actors are currently few in number and confined to three regions—Europe, the Middle East, and Asia—thus enabling the U.S. (if it will do so) to focus much of its resources and efforts accordingly.

As for the condition of America’s military services, they are beset by aging equipment, shrinking numbers, and rising costs—and this at a time when threats to U.S. interests are on the rise.

These three elements interact with each other in ways that are difficult to measure in concrete terms and impossible to forecast with any certainty. Nevertheless, the exercise of describing them and characterizing their general condition is worthwhile since it informs debates about defense policies and the allocation of resources necessary for the U.S. military to carry out its assigned duties.

Bear in mind that each annual Index will assess conditions as they are for the assessed year. This inaugural edition, the 2015 Index of U.S. Military Strength, will establish the baseline condition as it existed in the preceding year, 2014; subsequent years will include a comment on progress or setbacks relative to the baseline and intervening years.

In this Index, we assess U.S. Military Power, Global Operating Environment, and Threats to Vital U.S. Interests as of year-end 2014 as shown on the following page.

Note that factors that would push things toward “bad” (the left side of the scales) tend to move more quickly than those that improve one’s situation, especially when it comes to the material condition of the U.S. military.

Of the three areas measured—U.S. Military Power, Global Operating Environment, and Threats to Vital U.S. Interests—the U.S. can directly control only one: its own military. The condition of the U.S. military can influence the other two in that a weakened America arguably emboldens challenges to its interests and loses potential allies, while a militarily strong America deters opportunism and draws partners to its side from across the globe.

**Conclusion**

Since the close of the Second World War, the United States has underwritten and taken the lead in maintaining a global order that has benefitted more people in more ways than at any other period in history. Now, however, that order is under stress, and some have wondered whether it will break apart entirely. Fiscal and economic burdens abound; violent, extremist ideologies threaten the stability of entire regions; state and non-state opportunists seek to exploit upheavals; and major states compete to establish dominant positions in their respective regions.

America’s leadership role is in question, and its security interests are under significant pressure. Challenges are growing, old allies are not what they once were, and the U.S. is increasingly bedeviled by debt that constrains its ability to sustain its forces commensurately with its interests.

Informed deliberations on the status of the United States’ military power are needed today more than at any other time since the end of the Cold War. This new Index of U.S. Military Strength and the editions that will follow can help to inform the debate.
# Overall Assessment: 2014

## U.S. Military Power

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## Global Operating Environment

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## Threats to U.S. Vital Interests

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Executive Summary

The United States maintains a military force primarily to protect the homeland from attack and to protect its interests abroad. There are secondary uses, such as to assist civil authorities in times of disaster or to deter opponents from threatening America’s interests, but this force’s primary purpose is to make it possible for the U.S. to physically impose its will on an enemy when necessary.

Given the importance of this constitutional responsibility, one might reasonably assume that the government uses some standardized, consistent reference to understand the state of security affairs and to assess the evolving status of threats to U.S. interests, the environment within which the U.S. military would operate to protect those interests, and the condition of the U.S. military itself. Regrettably, it does not. Washington is awash in a flood of papers offering opinions on these matters, but they lack coherence, consistency, repeatability, and objectivity.

Without a standardized, consistent reference, our national leadership cannot effectively measure our current military posture or understand strategic risk relative to our nation’s ability to defend its vital national interests. And, without such a reference, the American public cannot know whether our security posture is improving or worsening from year to year.

The Heritage Foundation’s Index of U.S. Military Strength seeks to fill this void with an annual assessment of the state of America’s “hard power” and its related strategic context. The inaugural 2015 edition establishes a baseline assessment on which future annual editions will build, with each issue assessing the state of affairs for its respective year and measuring how things have changed from the previous year.

What the Index Assesses

The Index assesses the ease or difficulty of operating in key regions based on existing alliances, regional political stability, the presence of U.S. military forces, and the condition of key infrastructure. Threats are assessed based on the behavior and physical capabilities of actors that pose challenges to U.S. vital national interests. The condition of America’s military power is measured in terms of its capability or modernity, capacity for operations, and readiness to handle assigned missions successfully. This framework provides a single source reference for policymakers and the American public who seek to know whether America's military power is up to the task of defending our national interests.

Key to any discussion about the aggregate capacity and breadth of military power needed to address threats to U.S. security interests is knowing with clarity what interests must be defended. Three vital interests have been stated consistently in various ways by a string of Administrations over the past few decades:

- Defense of the homeland;
- Successful conclusion of a major war having the potential to destabilize a region of critical interest to the U.S.; and
Preservation of freedom of movement within the global commons (the sea, air, outer-space, and, most recently, cyberspace domains) through which the world conducts its business.

To defend these interests effectively on a global scale, the United States needs a military force of sufficient size, or what is known in the Pentagon as “capacity.” Due to the many factors involved, determining how big the military should be is a complex exercise. However, successive Administrations, Congresses, and Department of Defense staffs have done so, arriving at a surprisingly consistent force-sizing rationale: an ability to handle two major wars or “major regional contingencies” (MRC) simultaneously or in closely overlapping timeframes—a “two-MRC” requirement that is embraced in this Index.

At the core of this requirement is the conviction that the United States should have the ability to engage and decisively defeat one major opponent and simultaneously have the wherewithal to do the same with another to preclude opportunistic exploitation by any competitor. During the Cold War, the U.S. found itself involved in a major “hot” war every 15–20 years while simultaneously maintaining substantial combat forces in Europe and several other regions. The size of the total force roughly approximated the two-MRC model. Accordingly, our assessment of the adequacy of today’s U.S. military is based on its ability to engage and defeat two major competitors at roughly the same time.

This Index’s benchmark for a two-MRC force is derived from a review of the forces used for each major war that the U.S. has undertaken since World War II and the major defense studies completed by the federal government over the past 30 years. We concluded that a standing (i.e., Active Duty component) two-MRC–capable Joint Force would consist of:

- **Army:** 50 brigade combat teams (BCTs);
- **Navy:** 346 surface combatants and 624 strike aircraft;
- **Air Force:** 1,200 fighter/ground-attack aircraft; and
- **Marine Corps:** 36 battalions.

The Global Operating Environment

Looking at the world as an environment in which U.S. forces would operate to protect America’s interests, the Index focused on three regions—Europe, the Middle East, and Asia—because of the intersection of our vital interests and actors able to challenge them.

**Europe.** For the most part, Europe is a stable, mature, and friendly environment, home to America’s oldest and closest allies. The U.S. is tied to it by treaty, robust economic bonds, and deeply rooted cultural linkages. America’s partners in the region are politically stable; possess mature (if debt-laden) economies; and have fairly modern (though shrinking) militaries. America’s longtime presence in the region, Europe’s well-established basing and support infrastructure, and the framework for coordinated action provided by NATO make the region quite favorable for military operations.

**The Middle East.** In contrast, the Middle East is a deeply troubled area riven with conflict, ruled by authoritarian regimes, and populated by an increasing number of terrorist and other destabilizing entities. Though the United States does enjoy a few strong partnerships in the region, its interests are beset by security and political challenges linked to the unfinished business of the Arab Spring, surging transnational terrorism, and the potential threat of a nuclear Iran. Offsetting these challenges to some extent is the U.S. military’s experience in the region and the basing infrastructure it has developed and leveraged for nearly 25 years.

**Asia.** Asia’s defining characteristic is its expanse, covering 30 percent of the globe’s land area. Though the region includes long-standing allies of the U.S. that are stable and possess advanced economies, the tyranny of distance makes U.S. military operations in the region difficult in terms of the time and sea- and airlift required.

Summarizing the condition of each region enables us to get a sense of how they compare in terms of the challenge the U.S. would have in projecting military power and sustaining combat operations in each one.

As a whole, the world currently rates a middle score of “moderate,” meaning that the United States should be able to project military power anywhere in the world as necessary to defend its interests without substantial opposition or high levels of risk.
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Threats to U.S. Interests

Our selection of threat actors discounted troublesome states and non-state entities that lacked the physical ability to pose a meaningful threat to the vital security interests of the U.S. This reduced the population of all potential threats to a half-dozen that possessed both the means to threaten and a pattern of provocative behavior that should draw the focus of U.S. defense planning. This Index characterizes their behavior and military capabilities on five-point, descending scales:

Each of the six threat actors was particularly aggressive during 2014, with a not altogether surprising correlation of physical capability and state robustness or coherence. Our scoring resulted in the individual marks depicted below:

Combining the assessments of behavior and capability led to a general characterization of each threat, ranging from “severe” to “low.” Most of the actors pose an “elevated” threat to U.S. interests, while Russia and China are “high” threats due to the scale and reach of their military forces.

While all six threats have been quite problematic in their behavior and in their impact on their respective regions, Russia and China are particularly worrisome given the investments they are making in the rapid modernization and expansion of their offensive military capabilities.

North Korea warrants close attention not because it has any substantial ability to deploy conventional combat power against the United States directly but because it possesses nuclear weapons capable of reaching U.S. facilities and America’s critical security and economic partners in the region. Furthermore, a conventional war between North and South Korea would have profound consequences for the global economy.

Similarly, Afghanistan/Pakistan-based terrorism holds strong potential to spark a large-scale conflict between Pakistan and India (two nuclear powers) or even to pose a nuclear threat to others should radicalized Islamists gain control of Pakistan’s nuclear arsenal.

Finally, U.S. security interests would be more threatened by Iran and the various terrorist groups operating in the Middle East than they currently are if they possessed a greater physical ability to project military power outside of their immediate areas.

Taken together, the globalized threat to U.S. vital national interests as a whole during 2014 is assessed to be “elevated.”

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### Behavior of Threats

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The Status of U.S. Military Power

Finally, we assessed the military power of the United States in three areas: capability, capacity, and readiness. We approached this assessment by military service as the clearest way to link military force size; modernization programs; unit readiness; and (in general terms) the functional combat power (land, sea, and air) largely represented by each service. We treated the United States’ nuclear capability as a separate entity given the truly unique elements that make it possible, from the weapons themselves to the supporting infrastructure that is fundamentally different from that which supports conventional capabilities.

The three areas of assessment (capability, capacity, and readiness) are central to the overarching questions of whether the U.S. has a sufficient quantity of appropriately modern military power and whether military units are able to conduct military operations on demand and effectively.

The common theme across the services and the United States’ nuclear enterprise is one of force degradation resulting from many years of under-investment, poor execution of modernization programs, and the negative effects of budget sequestration (i.e., cuts in funding) on readiness and capacity. While the military has been heavily engaged in operations in Afghanistan, Iraq, and elsewhere since September 11, 2001, experience is both ephemeral and context-sensitive. As such, valuable combat experience is lost over time as the service-members who individually gained experience leave
the force, and it maintains direct relevance only for future operations of a similar type (e.g., counterinsurgency operations in Iraq and major conventional operations against a state like Iran or China are fundamentally different).

Thus, though the current Joint Force is experienced in some types of operations, it is still aged and shrinking in its capacity for operations.

We characterized the services and nuclear enterprise on a five-category scale ranging from “very weak” to “very strong,” benchmarked against criteria elaborated in the full report. These characterizations are not a reflection of the competence of individual servicemembers or the professionalism of the services or Joint Force as a whole; nor do they speak to the U.S. military’s strength relative to other militaries around the world. Rather, they are assessments of the institutional, programmatic, and matériel health or viability of America’s hard military power.

Our analysis concluded with these assessments:

- **Army as “Marginal.”** The Army was at the low end of the middle grade (“marginal”) in capacity and capability and scored quite low in readiness (as reported by the Army), the three scores combining to place it in the low end of the middle category.

- **Navy as “Marginal.”** The Navy scored quite strong in readiness but at a cost to future capability. Deferred maintenance has kept ships at sea, but at some point in the near future, this will affect the Navy’s ability to deploy. Combined with a weak score in capability (due largely to old platforms and troubled modernization programs) and a “marginal” score in capacity, the Navy is currently just able to meet requirements.

- **Air Force as “Strong.”** The Air Force flies a lot and has significantly more aircraft than required for a two-MRC force, but it is an old Air Force, and its modernization programs are problematic. Still, its high scores in capacity and readiness placed it in the best position of all of the services.

- **Marine Corps as “Marginal.”** The Corps’ strongest suit was in readiness, but even here there are problems as stated by the Corps itself. While the fighting competence of the service is superb, it is hampered by old equipment, troubled replacement programs for its key ground vehicles, and a shrinking force. The progress it has made in replacing its rotary-wing aircraft is a notable bright spot in its modernization portfolio.

- **Nuclear Capabilities as “Marginal.”** Modernization, testing, and investment in the intellectual/talent underpinnings of this sector are the chief elements plaguing the United States’ nuclear enterprise. Its delivery platforms are good, but the force depends on a very limited set of weapons (in number of designs) and models that are quite old, in stark contrast to the aggressive programs of competitor states.

In aggregate, the United States’ military posture is rated as **“Marginal.”**

Overall, the Index concludes that the current U.S. military force is adequate to meeting the demands of a single major regional conflict while also attending to various presence and engagement activities. Clearly, this is what the military is doing now and has done for the past two decades, but it would be very hard-pressed to do more and certainly would be ill-equipped to handle two, near-simultaneous major regional contingencies. The consistent decline in funding and the consequent shrinking of the force are putting it under significant pressure. Essential maintenance is being deferred; fewer units (mostly the Navy’s platforms and the Special Operations Forces community) are being cycled through operational deployments more often and for longer periods; and old equipment is being extended while programmed replacements are problematic.

The cumulative effect of such factors has resulted in a U.S. military that is marginally able to meet the demands of defending America’s vital national interests.
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What Is National Security?
Kim R. Holmes, PhD

The challenge in devising a reliable measure of U.S. military power is that the effort must be rooted in a concrete understanding of what national security is and what it is not. This essay examines the elements of national security, providing both definitions of terms and a clarification of related concepts. It concludes with a number of takeaways from this analysis to help guide the making of a National Security Strategy.

A Short History of National Security

Modern concepts of national security arose in the 17th century during the Thirty Years War in Europe and the Civil War in England. In 1648, the Peace of Westphalia established the idea that the nation-state had sovereign control not only of domestic affairs such as religion, but also of external security.

The idea of the nation-state is commonplace today, yet it would be wrong to assume that it is the only way to look at international security. The pre-Westphalia international system was based on the assumption that there existed a universal principle governing the affairs of states led by emperors, popes, kings, and princes. That was indeed the principle of the Holy Roman Empire. The new idea of the nation-state took a different approach. Peace and stability could be better served if people were not slaughtering each other over some universal principle—in that case, religion. It would be far better to have an international system based on the equilibrium of nation-states dedicated to the limited purposes of national sovereignty and self-defense.

This idea was challenged by the philosopher Immanuel Kant (1724–1804), who resurrected the universal principle idea not in the old religious context, but in a secular one inspired by the Enlightenment. In his 1795 essay “Perpetual Peace: A Philosophical Sketch,” he outlined his idea that the system of nation-states should be replaced by a new enlightened world order. Nation-states should subordinate their national interests to the common good and be ruled by international law.

Thus was born the secular view of supranational institutions governing international affairs, which today is reflected in the global worldview of liberal internationalism and most clearly manifested in the United Nations.

It is important to keep these two schools of thought in mind when considering the various definitions of national security. They are present in current debates over national sovereignty, international law, and the role of international institutions in world affairs. American liberal internationalists for example, with their dedication to the United Nations and international governance, are neo-Kantians, whereas realists tend more to the views of Thomas Hobbes (1588–1679), Hugo Grotius (1583–1645), and other philosophers who espoused the supremacy of the nation-state.

Some Basic Definitions

Before analyzing different definitions of national security, it is important to understand some of the concepts the term incorporates.
The first is the concept of power. It can best be defined as a nation’s possession of control of its sovereignty and destiny. It implies some degree of control of the extent to which outside forces can harm the country. Hard, or largely military, power is about control, while soft power is mainly about influence—trying to persuade others, using methods short of war, to do something.

Instruments of power exist along a spectrum, from using force on one end to diplomatic means of persuasion on the other. Such instruments include the armed forces; law enforcement and intelligence agencies; and various governmental agencies dedicated to bilateral and public diplomacy, foreign aid, and international financial controls. Variables of power include military strength, economic capacity, the will of the government and people to use power, and the degree to which legitimacy—affect how power is wielded. The measure of power depends not only on hard facts, but also on perceptions of will and reputation.

Another term to understand properly is military strength. This term refers to military capacity and the capabilities of the armed forces, and it is a capacity that may not actually be used. It often is understood as a static measure of the power of a country, but in reality, military strength is a variable that is subject to all sorts of factors, including the relative strength of opponents, the degree to which it is used effectively, or whether it is even used at all.

Force is the use of a military or law enforcement capacity to achieve some objective. It is the actual use of strength and should not be equated with either strength or power per se. Using force unwise- or unsuccessfully can diminish one’s power and strength. By the same token, using it effectively can enhance power. Force is an instrument of power just as a tool or some other device would be, but unlike institutional instruments like the armed forces, its use in action is what distinguishes it from static instruments of strength like military capacity. Thus, force should be understood narrowly as an applied instrument of coercion.

Finally, there is national defense. Strictly speaking, this refers to the ability of the armed forces to defend the sovereignty of the nation and the lives of its people; however, since the attacks of September 11, 2001, the mission of homeland security—using domestic as well as military instruments to defend the nation from terrorist and other attacks either inside or outside the country—has come to be understood as an element of national defense.

International Systems of Security

Understanding the major schools of thought on international security that have arisen since the end of World War II will also help to explain the international context in which American national security is expected to operate. These schools of thought include:

- **Collective Defense.** Collective defense is an official arrangement among nation-states to offer some defense support to other member states if they are attacked. It is the basis of the classic defense alliances like the Triple Entente among the United Kingdom, the French Third Republic, and the Russian Empire before World War I and the North Atlantic Treaty Organization today. It is distinguished not only by geographical limitation, but also by its focus on military commitments.

- **Collective Security.** Collective security refers to various types of arrangements. Strictly speaking, collective defense involving mutual commitments of member states could be considered a form of collective security, albeit one limited geographically to military defense. More often, however, collective security is thought of as a regional and global concept represented by such international institutions as the League of Nations and the United Nations. Often, such arrangements are buttressed by concepts of international law and international aid and governance. Their distinguishing characteristic is their hybrid character between collective action at the international level and the acceptance of nation-states being ultimately responsible for their own security.

- **Global Security.** Global security is a set of ideas, developed largely by the United Nations since the end of the Cold War, that the world’s security is everybody’s business. It rests on the premise that no single nation is secure unless all are secure. While lip service is given to the idea of national defense, the far greater focus is on attempting to eliminate conflict through international law, aid, confidence-building measures, and global gover-
The use of force should thus be reserved largely for international peacekeeping, peace enforcement, and the protection of innocent citizens from violence and should be decided upon and organized by the U.N.

- **International Law.** To the American ear, the use of the term “law” in the phrase “international law” conjures up the idea of binding rules enforced by judicial authorities and law enforcement officials. However, what Americans understand as “law” in a domestic context is often out of place in considering U.S. compliance with “international law.” The U.S. government must comply with the supreme law of the land, which the U.S. Constitution makes clear consists of the Constitution itself, laws made in pursuance thereof, and “all Treaties made, or which shall be made, under the Authority of the United States” (quoting Article VI of the Constitution). The United States also makes a practice of following what is known as “customary international law,” which “is comprised of those practices and customs that States view as obligatory and that are engaged in or otherwise acceded to by a preponderance of States in a uniform and consistent fashion” (quoting United States v. Yousef, 327 F.3d 56, 91 n. 24 (2d Cir. 2003), cert. denied, 540 U.S. 993 (2003)).

**Non-Military Ideas of National Security**

For most of the 20th century, national security was focused on military security, but as a concept, it expanded over time beyond what armed forces could do (or not do as the case may be). In 1947, the United States created the National Security Council to “advise the President with respect to the integration of domestic, foreign, and military policies relating to the national security...” In the wake of total war, and at the dawn of the nuclear age, it was well understood that the days of defining national security solely in terms of armies fighting it out in set-piece battles were things of the past.

Since then, national security has come to mean different things to different people. Today, there are all kinds of “national securities.” They include economic security; energy security; environmental security; and even health, women’s, and food security. This proliferation of definitions has not always been for the good. In some instances, for example, it is merely a rebranding of domestic agendas to shift resources away from the Pentagon. In other cases, it is adjusting to the complexities of a changing international environment.

The following list provides definitions of the major contending views of non-military definitions of national security, with no analysis of their merits or deficiencies.

- **Political security** refers to protecting the sovereignty of the government and political system and the safety of society from unlawful internal threats and external threats or pressures. It involves both national and homeland security and law enforcement.

- **Economic security** involves not only protecting the capacity of the economy to provide for the people, but also the degree to which the government and the people are free to control their economic and financial decisions. It also entails the ability to protect a nation’s wealth and economic freedom from outside threats and coercion. Thus, it comprises economic policy and some law enforcement agencies but also international agreements on commerce, finance, and trade. Recently, it has been defined by some in a human security context to mean eradicating poverty and eliminating income inequality.

- **Energy and natural resources security** is most often defined as the degree to which a nation or people have access to such energy resources as oil, gas, water, and minerals. It would be more accurate to describe it as access freely determined by the market without interference from other nations or political or military entities for non-market, political purposes.

- **Homeland security** is a set of domestic security functions that since 9/11 have been organized in a single agency, the Department of Homeland Security. It includes airport and port security, border security, transportation security, immigration enforcement, and other related matters.

- **Cybersecurity** refers to protection of the government’s and the peoples’ computer and data processing infrastructure and operating systems from harmful interference, whether from outside or inside the country. It thus involves not only...
national defense and homeland security, but also law enforcement.

- Human security refers to a concept largely developed at the United Nations after the end of the Cold War. It defines security broadly as encompassing peoples’ safety from hunger, disease, and repression, including harmful disruptions of daily life. Over time, the concept has expanded to include economic security, environmental security, food security, health security, personal security, community security, political security, and the protection of women and minorities. Its distinguishing characteristic is to avoid or downplay national security as a military problem between nation-states, focusing instead on social and economic causes and an assumed international “responsibility to protect” peoples from violence. It is to be determined and administered by the United Nations.

- Environmental security is an idea with multiple meanings. One is the more traditional concept of responding to conflicts caused by environmental problems such as water shortages, energy disruptions, or severe climate changes; it is assumed that these problems are “transnational” and thus can cause conflict between nations. The other, more recent concept is that the environment and the “climate” should be protected as ends in and of themselves; the assumption is that the environmental degradation caused by man is a threat that must be addressed by treaties and international governance as if it were the moral equivalent of a national security threat. In the past, natural disasters were not considered threats to national security, but that presumption is changing as the ideology of “climate change” and global warming takes hold in the national security community.

What National Security Is Not

It is true in life, as in strategic planning, that if you try to do everything, you will likely end up doing few things right. America’s definitions of national security should be guided not only by a sensible understanding of what is truly vital to the nation’s security, but also by what the nation can practically expect the government to do and not to do.

It is particularly important that the Department of Defense and armed forces understand this point. An “all of the above” definition of national security, which primarily suits political constituencies, will only lead to confusion, waste, distractions, and possibly even military failures as the U.S. government is asked to do things that are either beyond its capacity or, worse, tangential to the real mission of protecting the country from harm.

It is thus critical to identify what national security is not. The best way to do this is to establish clear criteria for what exactly constitutes a threat to national security.

Is it, for example, truly a threat to the American people and the American nation as a whole? Can it be tolerated, or must it be eliminated? If the latter, does the nation have the proper means to defeat, contain, or influence the threat? If not, can it obtain those means within a reasonable time frame to make a difference at an affordable cost?

Is the threat external or internal? If internal, is it from foreign, unlawful, and unconstitutional sources and thus reasonably understood as hostile and a risk to peoples’ freedoms, or is it merely an act of lawful dissent or protest by Americans? The last thing the nation’s leaders should do is to mistake political dissent as a threat to homeland security; although surveillance and intelligence-gathering capabilities are necessary to combat terrorism, it is imperative that America’s leaders keep a bright line between watching terrorists and monitoring the political views of Americans.

Are the threats man-made or natural in origin? Natural disasters like hurricanes can be very dangerous, but even if one assumes they are caused by climate change (which is disputable), are they threats to the nation? Are “threats” from the weather, disease, or lack of food due to manipulations by states or terrorist groups or natural in origin, to be dealt with accordingly?

Finally, a crucial question: To what extent is the insecurity of other peoples related to our own? Does U.S. national security come into play only when the safety and security of allies who share America’s values and interests are endangered? Or is America committed generally not only to the safety and security of all peoples around the globe, but also to their health, human rights, and general well-being?

The answers to these questions are not difficult.

First, national security is not something that merely affects the well-being of Americans. Rather, it involves their safety, their security, and their freedoms. It is becoming more commonplace to view...
perceived social “injustices” as national security problems, but this distorts the very concept. Perceptions of social injustice or inequality are domestic concerns, not national security matters. Making less money than a neighbor is hardly as important to one’s life as being safe from incineration in a skyscraper in a terrorist attack.

A similar distinction holds true for so-called health security. While a pandemic disease could endanger the safety and security of thousands of Americans, unless it is committed as an act of biological terrorism, it should be considered a matter of health and domestic safety, not national security. As for the social implications, whether individuals have health insurance is vital to their lives, but that is a matter for them and their insurance agents or program administrators at the Department of Health and Human Services. It is a matter of “social” security, not national security.

Admittedly, global security concepts like health and human security come into play mainly overseas—in definitions of international security—and not in defining American security. But even there, some distinctions need to be made. “Food security” often means little more than preventing malnutrition or responding to famine caused either by natural causes or by political instability or war. The causes of these problems can be addressed through humanitarian aid, mediation, or (in extreme cases) peacekeeping or even military intervention, but little is gained by creating neologisms that may intend to heighten political concern but do little to help shape an adequate response for solving them.

A similar problem exists with the concept of environmental security. Clearly, wars can cause environmental damage and disruptions. Water shortages can create transnational and social tensions that may lead to conflict, and melting polar caps could open up waterways that exacerbate international tensions. As far as national and international security is concerned, however, the root causes of those conflicts are not environmental; they are political and military. Environmental issues are tangential and, at best, merely contributing factors. For example, Saddam Hussein did not burn the oilfields to damage the environment; he burned them to disrupt America’s military advance. Water shortages exist, but the problem begins when rival nations or groups start manipulating that scarcity for political purposes. Tensions with Russia over Arctic routes are rooted in Russia’s geopolitical ambitions, not in purported concerns about the ozone layer.

A current example of problematic thinking about national security can be found in ideas about environmental security and its link to climate change. Some purport that climate change is a “threat multiplier” insofar as it supposedly could create natural disasters, exacerbate conflicts, and make the operating environment for U.S. armed forces more difficult. Some also see it as a problem for “safeguarding the global commons,” which is a foreign policy problem. From this perspective, government policies focus on using international “engagement to transition to a low-carbon growth trajectory” for the entire planet. As for the Pentagon’s new role, it is about studying global warming’s supposed impact on military installations, the operating environment, and the Arctic and the assumed increased role in humanitarian assistance and relief that it expects to be caused by “climate change–induced” disasters.

As noted earlier regarding the confused thinking that results when policymakers conflate social conditions or public health matters with “national security,” there are a number of questionable assumptions behind current environmental security policy. There may be a scientific consensus on the fact that the climate warmed for a period, but there is no consensus on how much it is still warming or exactly how factors like vapor and the sun contribute to it. Thus, the more alarmist predictions are unreliable.

This sort of uncertainty means not only that there may not be a grave threat, but also that, at the very least, we have little idea how bad it could be or when it could occur. One sympathetic study of the risks of climate change concluded confidently that there is a one-in-20 chance that catastrophic outcomes could cost $701 billion worth of coastal damage by the “end of the century.” But that is 85 years away. In the computer modeling world it is fairly common to come up with such precise figures (why not $700 billion or $702 billion instead of $701 billion?), but in the real world—especially one that is almost nine decades away—many unpredictable things can and will happen.

Such unpredictability and such poorly disciplined thinking about national security are problematic for Pentagon planning. How do military planners make reliable plans for predictions that span almost a century and for which short-term predictions are highly unreliable? It may be appropriate for military
planners to study possible long-range implications, especially for the Arctic if one assumes the global warming forecasts to be accurate, but it would be imprudent to assume that any specific adjustments to installations or operational planning can be made reliably for periods of time further out than 10 or 20 years.4

Further, if things like climate change, global public health, or volcanic eruptions in some distant corner of the world are accepted as threats to national security, they are threats over which the United States does not exercise sovereignty. Yes, the U.S. could choose to do things to help improve the health of its citizens or mitigate the impact on its cities of changing weather patterns, but it stretches reason to assert that the U.S. military should be shaped to account for the policies and conditions of other countries and peoples relative to their own efforts in such cases.

Finally, there is the issue of energy security. All nations need energy to survive, but the market can supply most of their energy needs. Nations like Russia use energy as a geopolitical tool of coercion. Indeed, the Ukrainians can attest to how serious this coercion can be. Other nations like China make satisfying their energy-hungry economies a central part of their foreign policy. By and large, however, whatever attempts these and other countries make to use energy as a geopolitical tool run up against the demands of the international market. Oil and gas markets are highly influenced by nations and cartels, but they are also global in nature. This means that global economic demand also affects the price of energy and typically exerts greater leverage than do the actions of any one country.

Energy security thus becomes more a policy task of keeping the global energy market as free and open as possible than a programmatic objective of national security or even foreign policy. America’s main energy problem has been an intentional limit on domestic production and infrastructure like pipelines and liquid gas facilities. Although energy insecurity is a real problem for some nations, the solutions for the United States are largely economic and infrastructural in nature. Energy “security” is mainly about taking advantage of new techniques such as fracking, more drilling for oil, and building more refineries, pipelines, nuclear reactors, and liquid gas facilities at ports for export purposes.

Focusing the Idea of National Security

It is clear that policymakers need a sharper focus as to what is and is not national security. It cannot be all things to all people; if it were, it would be meaningless. The definition of national security must be limited not only to decide what the government should be expected to do, but also, just as important, to decide what it should not do. This is especially true because of budget restraints. While it is proper to task the U.S. government with protecting a spectrum of national security interests—from the financial and economic system to access to natural resources—the lion’s share of the government’s interest and thus budgetary resources should be dedicated to safeguarding the country and its interests from foreign aggression.

Focusing national security policy on what matters most requires a more accurate understanding of power. As mentioned earlier, power is the degree to which a state can influence and control its destiny. All too often in the debate over “trade-offs” between soft and hard power, people assume that the former is interchangeable with the latter. In its crudest interpretation, it is the misguided belief that U.S. diplomats and troops are somehow interchangeable. Diplomats, particularly skilled ones, are no doubt important to American security, but it is inaccurate to suggest that they and U.S. troops play the same or even similar roles.

It is not uncommon for elected and appointed officials to note that the foundation of all American power is hard or military power. Unfortunately, many seem to do this as a mere rhetorical flourish, but in reality, it is a hard fact of international relations. Without military power, soft power is largely symbolic and ineffective. America draws its reputation as a world leader from three sources, and none of them derives from the unique skills of U.S. diplomats. Those sources are America’s military power, its economic capacity, and its dedication to the values of freedom and democracy.

Much of the emphasis placed on soft power comes from a political desire to spend less on defense so as to have more to spend on diplomacy and foreign aid. It may very well be that more can be done in some of these areas, but that still begs the question of whether hard power and soft power are interchangeable.

Those who think that they are interchangeable, or that soft power is actually superior to hard power, point to the supposed success of the Euro-
European Union, but this reveals a misunderstanding. The EU’s soft power diplomacy is influential only because Europe’s basic security needs, provided largely by America’s armed forces, are already being met. Not having to spend money on defense enables Europe to spend disproportionately on foreign aid and social development programs. Furthermore, it is important to keep in mind that the confidence the world has in European stability is based in part on the security guarantee provided by the United States.

This is not a model that the United States has the luxury of following. Unlike Europe, the U.S. has no one to whom it can turn for its security. It is a net security provider, not a security taker as the Europeans are; for this reason alone, America’s hard military power responsibilities are unique and should be a top priority. This does not mean that the U.S. should not do a better job in diplomacy, foreign aid, and other means of soft power influence. It means only that any assumptions of zero-sum trade-offs between hard and soft power are fatuous.

Another false assumption is that the U.S. needs only to “rebalance” or “streamline” its way out of a need for military capacity. This presumes that shifting the military’s focus from one region to another or being more efficient with fewer resources committed to defense will somehow lessen the requirement for hard power. In fact, the opposite occurs. Less hard power capacity undermines the effectiveness and impact of soft power, encourages opportunism by competitors, and eventually leads to even greater demand for more hard power. For example, the rebalancing strategy in Asia has been largely rhetorical and diplomatic, covering up the fact that U.S. military capacity in East Asia is dwindling.

Moreover, the notion of a “whole of government” approach, which was prominent in the 2010 National Security Strategy, appears to assume that strenuous coordination in training across departments can replace the loss of hard power capacity. “Rebalancing” and “whole of government” sound sophisticated and almost prosaic; in reality, they are covers for America’s diminishing capacity to maintain its influential role in the world.

National security is the safekeeping of the nation as a whole. Its highest order of business is the protection of the nation and its people from attack and other external dangers by maintaining armed forces and guarding state secrets. Since the attacks of September 11, 2001, the defense of the homeland from terrorist and other attacks, broadly understood as homeland security, has risen as a major national security concern.

Because national security entails both national defense and the protection of a series of geopolitical, economic, and other interests, it affects not only defense policy, but foreign and other policies as well. Foreign and defense policies should be seen as mutually reinforcing, not as zero-sum trade-offs in budgetary fights. While hard choices will indeed have to be made in national security spending, they should be decided by realities, not by fatuous comparisons or incoherent and tendentious concepts.

The next question to address is how to attain national security. For decades, the United States has tried to answer this question with the official National Security Strategy (NSS). Unfortunately, these official documents have a bad reputation. They are often seen more as public relations exercises than as reliable guides for strategic planning.

Crafting a full NSS is beyond the scope of this essay, but as a bare outline, the U.S. should have goals that are clear, achievable, and mutually reinforcing. The following suggestions for National Security Strategy goals are listed in descending order of importance:

1. **Preserve** the safety of the American homeland and protect the integrity of the nation’s domestic institutions and systems vital to that purpose. This goal requires strong Active, Guard, and Reserve forces as well as effective intelligence, law enforcement, counter-terrorism, cybersecurity, and immigration policies to protect the homeland and secure America’s borders.

2. **Maintain** a global balance of power in favor of America’s security and interests and those of its friends and allies. This requires an armed force capable of successfully completing all of the military missions assigned to it and fulfilling U.S. commitments to defend the security of America’s allies and friends.

What National Security Is

Now that it is fairly clear what national security is not, the task of crafting a definition of what it is should be easier.
3. **Guarantee** the freedom of the seas, upon which both the U.S. and world commerce and economic viability depend. This in particular requires a strong U.S. Navy and Marine Corps and overseas bases capable of supporting the projection of American power around the world.

4. **Exert** U.S. influence as much as possible overseas through the entire spectrum of instruments of power, including diplomacy, foreign aid, selective intelligence sharing, public diplomacy, and human rights and humanitarian programs. This requires integrating U.S. diplomacy and foreign aid and humanitarian programs more closely to achieve the purposes of the national strategy.

5. **Dedicate** America to maintaining as much as possible a global economy based on economic freedom (sometimes called democratic capitalism), including free trade and the openness of energy markets and international financial systems based on the rule of law.

6. **Focus** U.S. energy security policy on developing domestic resources and keeping the international energy market as free as possible from harmful political manipulation.

7. **Ensure** that America’s dedication to values and their promotion overseas reflects not only its own history of liberty, but also the universal principles of freedom—thus defining human rights as freedom of expression, the right of democratic self-government, economic freedom, equality before the law, and freedom from persecution and oppression. Values should guide and inform the nation’s strategy, not direct or control it. Geopolitical compromises will have to be made from time to time, and America should not see itself as the world’s policeman enforcing certain values. However, it is important to recognize that this nation’s commitments to universal values like freedom and democracy are reasons why foreign nations and peoples support America.

**The Way Forward**

Any discussion of national security must be rooted in a clear understanding of the concepts it involves. The following are the four most important takeaways from this analysis of national security.

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**Takeaway #1:** Make capacity and flexibility the watchwords of strategic and military planning so as to give the President as Commander in Chief and his military leaders as many options as possible to deal with any contingency that may arise to threaten the nation. Understand that the more capacity and credibility U.S. forces have, the less likely it is that they will be challenged and the more able they will be to respond effectively to surprises when they occur, as they inevitably will. This “peace through strength” strategy is not just a slogan; it is a tried-and-true strategy pursued largely successfully during the Cold War to avoid actual war.

**Takeaway #2:** Avoid the trap of artificial “trade-offs” between non-military and military programs dedicated to national security. In the real world of budgets, there will always be hard choices, but political leaders and policymakers should avoid pretending that funding for a climate change program is anywhere nearly as important as funding for a new-generation fighter aircraft or for maintaining America’s fleet of aircraft carriers.

**Takeaway #3:** Focus non-military instruments of power and policies on supporting the discrete goals of national strategy listed above. This means consciously aligning U.S. diplomacy, foreign aid, public diplomacy, international trade and financial policies, and human rights policies to advancing discrete national interests. While this involves a global perspective as defined by the national strategy, it does not envision the use of these instruments of soft power either to create a global order of international governance run by international organizations or to bolster the existing international “system” in which the sovereignty of tyrants and human rights abusers is assumed to equal America’s own.

**Takeaway #4:** Be as clear as possible about what can and cannot be achieved by military intervention. Much of the controversy surrounding the issue of military intervention stems from confusion over what can and cannot be achieved by force and, just as important, over what Americans expect their armed forces to do. Are these troops nation builders and humanitarian police forces? Or are they military defenders of narrower security interests? In truth, they have been employed for all of these purposes with varying degrees of success, but the true trade-offs of doing so are scarcely ever understood and articulated by this nation’s leaders.
The United States cannot eliminate every bad actor, right every wrong, or correct every perceived injustice in the world. That is impossible. But the United States can contribute to building a world order in which the rule of law, the integrity of national borders, democratic capitalism, freedom of the seas, democratic self-government, human rights, and international trade prevail, not as guaranteed outcomes but as opportunities. It is an exhausting and costly enterprise, but no one else can do it. Not only that: It is for America’s own good.
Endnotes:


Building the Right Military for a New Era: The Need for an Enduring Analytic Framework

Daniel Gouré, PhD

The Unique Value of American Military Power

Today, the United States is a global power with worldwide interests, investments, relationships, and concerns. It is also the leader of a like-minded community of nations, a set of alliances, security relationships, and even of what passes for a board of directors for the international economic system. America earned its current role by helping to rebuild the war-shattered nations of Europe and Asia, promoting an open international political and economic order, aiding those suffering from humanitarian crises, and providing a bulwark against regional aggression and internal subversions.

Twice in the past 60-plus years, the United States has chosen to fill the vacuum caused by the collapse of old institutions, relationships, and power centers. After World War II, along with key allies, this country created a new international order anchored by democratic institutions and international agreements that have endured to this day. America, again in concert with many allies, also built a security apparatus and military machine of global reach and power, one unlike any seen in peacetime.

When the Soviet Union collapsed, the United States did not simply declare victory and go home. Rather, even while reducing the size of its military, America chose to remain in the world—forward deployed and committed to maintaining and even expanding long-established alliances and security relationships. As a result, the world was able to weather difficult and dangerous transitions while maintaining a viable international system.

Ironically, the end of the Cold War increased the United States military’s role in maintaining the global order. From 1945 to the collapse of the Soviet Union, there were between 40 and 50 significant instances of the use of U.S. armed forces abroad. From 1991 to the present, that number nearly tripled to between 100 and 135. These figures do not include several hundred humanitarian operations, support for civil authorities after natural disasters, or the myriad of routine deployments for training purposes or to build partnership capacity. Taking these additional actions into consideration, the activity level for the U.S. military increased by a factor of four after 1991.¹

At the same time, in the 1990s, the U.S. military was halved. This dramatic force reduction, coupled with the fourfold increase in activity, resulted in an eightfold increase in the military’s “use rate” or “stress level.” Were it not for two important factors, the U.S. military might have collapsed.

1. The Reagan–Bush era had yielded an overhang of military procurements, an investment off of which the military has lived for years; and

2. The military engaged in selective hollowing, which allowed the services to reduce spending on maintenance and upgrades rather than relying
on a reduction in force. For the Army alone, this amounted to some $50 billion in the years prior to September 11, 2001.

U.S. power and presence are the foundation on which the present international order is built. Whether it is the size of the U.S. economy, America’s capacity for innovation, the role of the dollar as the world’s reserve currency, or the contribution of U.S. military power to the stability and peace of the global commons, the present world order has “made in the USA” stamped all over it. Furthermore:

The United States offered resistance to illiberal and autocratic regional powers that have at time[s] challenged the protocols of the postwar order. And that pushback has allowed weaker nations—such as Poland or the Baltic States—to escape the orbit of post-Soviet Russia, while in the Pacific ensuring that an Australia, New Zealand, or the Philippines is not bullied into subservience by China.

This strange postwar world ushered in the greatest advancement in prosperity amid the general absence of a cataclysmic world conflagration or continental war since the dawn of civilization. For the first time since the rise of the Greek city-state, most nations have been able both to prosper and to assume that their boundaries were inviolate and their populations mostly free from attack. A system of international communications, travel, commerce, and trade is predicated on the assumption that pirates cannot seize cargo ships, terrorists cannot hijack planes, and rogue nations cannot let off atomic bombs without a U.S. led coalition to stop them from threatening the international order.²

For more than four decades, the modern American military has served this nation with distinction. However, the U.S. military today faces a growing number of challenges. Some of these are of our own making, most notably an unwillingness to put forward the relatively modest amount of resources required to maintain a military capable of meeting enduring security requirements. Others come from without, including the proliferation of advanced conventional and even nuclear weapons and delivery systems; significant increases in the defense budgets of potential adversaries; and the rise of new types of warfare based on new technologies, many of them commercial in nature.

The most important challenge facing America is the apparent inclination of its political elite to turn away from this nation’s role as the linchpin in the international security order—an inclination that places this nation’s vital interests, as well as the freedom and security of friends and allies, at risk.

From Global Containment to the Two Major Theater War Standard

For more than 60 years, the adequacy of U.S. military power was measured with reference to a dominant strategic concept (deterrence); a single adversary (the former Soviet Union and its allies); and largely in terms of one type of conflict (a large-scale, high-end conventional conflict centered in Europe). A full-spectrum conventional military force, reinforced by robust theater and strategic nuclear capabilities, was viewed as sufficient to deter any Soviet leadership from employing force directly against the United States, its allies, or their vital interests. In addition, it was generally accepted that the broad range of capabilities necessary to conduct and sustain such a major war would provide sufficient richness with which to address multiple lesser conflicts and contingencies.

Historically, the U.S. government has used as a sizing standard the number and character of wars in which the U.S. might be engaged. The standards were defined in terms of the prospective opponents, the scale of the conflict, and the ultimate objectives.

At the height of the Cold War, the United States maintained a two-and-a-half-war strategy: major, simultaneous wars against the Soviet Union and China plus another nation. Following the Sino–Soviet split and the U.S. opening to China, the Nixon Administration changed the sizing criteria to a one-and-a-half-war strategy that planned for a major war with the Soviet Union plus a second, possibly related conflict in the Persian Gulf or on the Korean peninsula.

The Cold War period was not free of debate and disagreement over the size and composition of U.S. military forces. The answer to the question of “how much is enough?” was pursued from a variety of perspectives: strategic, political, and budgetary. What is notable about the Cold War effort to define the required size and character of U.S. military forces is
the application of rigorous and consistent analytic methods. By focusing on a consistent and commonly accepted set of scenarios, performance requirements, and measures of effectiveness, analysts were able to track the strength and weaknesses in force structure decisions, particularly in light of a changing threat, and provide clear information, traceable over time, that contributed to the public debate on the adequacy of American military power.

Eventually, the Department of Defense’s use of analytics yielded the “net assessment process.” Developed by the Office of Net Assessment (ONA) under the leadership of Mr. Andrew Marshall to examine the balance of military power between the West and the Soviet bloc, the process answered questions concerning both the present and the future by anticipating changes in technologies, defense budgets, and even alliances.

A strategic net assessment began with a thorough understanding of America’s military capabilities and those other nations, most notably the Soviet Union and its Warsaw Pact allies. To this quantitative assessment was added an appreciation for how military forces might be employed in various kinds of conflicts—the qualitative dimension. Changes in alliance relationships, advances in technology, and fluctuating defense budgets were also considered as factors influencing the final or net assessment of the military potential of the opposing sides.

Over time, ONA also developed an approach to the long-term competition between the two sides called Competitive Strategies. The central idea of Competitive Strategies was to focus areas of U.S. advantage against areas where America’s competitors were weak while simultaneously limiting their ability to do the same. The long-term goal was to move the balance of military power increasingly in America’s favor, thereby enhancing deterrence. ONA helped to train several generations of analysts and policymakers in the methodologies and ways of thinking about net assessment and competitive strategies.

Analytics and the End of the Cold War. With the fall of the Soviet Union and the end of the Cold War, the strategic and analytic pillars that supported a coherent and consistent debate on force sizing and composition vanished almost overnight. Since the end of the Cold War, the basic metric for judging the adequacy of the U.S. military has been its ability to fight in two geographically separated regions of the world at approximately the same time. Referred to at different times as “Major Regional Contingencies (MRCs),” “Major Theater Wars,” or “multiple, large scale operations,” the two-war standard has stood the test of time because it reflects a basic strategic reality that was well expressed by the 2012 Strategic Guidance for the Department of Defense: “As a nation with important interests in multiple regions, our forces must be capable of deterring and defeating aggression by an opportunistic adversary in one region even when our forces are committed to a large-scale operation elsewhere.”

Moreover, there have been times when the United States, in order to deter possible aggression, has found it prudent or even necessary to build up its forces in two different parts of the world. For example, in 1994, the Clinton Administration faced a crisis on the Korean peninsula. In response to heightened tensions in Northeast Asia, the United States began to move additional forces to the region. At about the same time, Saddam Hussein began to move portions of his army from central Iraq southward in what could have been preparation for another attack on Kuwait. Again, the U.S. deployed an array of forces to that region. Then-Secretary of Defense William Perry later credited the maintenance of a two-MRC military for Washington’s ability to deter conflict in both regions simultaneously.

Each Administration has put its own spin on the two-MRC standard, and therein lies the problem: It is impossible to compare the adequacy of the U.S. military to meet national security demands over time because the goalposts keep moving. Initially, the requirement was to fight and win two conflicts similar in size and complexity to Desert Storm, the war that the U.S. and its coalition allies had fought against Iraq. Over time, successive Administrations took liberties with this standard—alterations that reflected a variety of strategic, political, technological, and budgetary priorities.

For instance, the 2001 and 2006 Quadrennial Defense Reviews (QDRs) paid minimal obeisance to the two-MRC standard, instead reflecting the impact of September 11, the Bush Administration’s determination to prosecute the global war on terrorism, the requirements of two long-term stability operations in Iraq and Afghanistan, and rising defense budgets.

The 2009 and 2014 QDRs were driven by the Obama Administration’s markedly different strategic and policy perspectives. They continued, for
example, the two-MRC standard but significantly modified the definition of the type of conflicts for which the U.S. military should be prepared. Gone was the requirement for a protracted, large-scale stability operation—another Iraq or Afghanistan. The military still had to fight two conflicts, but only one would be a full-out conventional war. In the other conflict, the U.S. military's objective would be limited to "denying the objectives of—or imposing unacceptable costs on—a second aggressor." In theory, because this second conflict would be based on more limited objectives than those pursued in the first, it would require fewer forces and would last for a shorter period of time. As a consequence of these changes, the Obama Administration was able to extract a significant "peace dividend" from ensuing defense budgets.

While post–Cold War defense policy has always advocated being able to fight two wars at the same time, successive Administrations have never provided sufficient resources to ensure a force structure capable of achieving such a goal—except at extremely high risk. It was possible to get away with this charade in the past because the U.S. military was relatively modern as a result of the Reagan buildup and America's potential adversaries were rather weak. Neither of these conditions holds true today.

In fact, even before the Budget Control Act became law, the U.S. military would have had a very hard time fighting two regional conflicts. This difficulty is the reason that the Obama Administration changed the standard for American military adequacy from winning two wars to winning one and attempting to deny an aggressor his objectives or punish him severely in the second. No one really knows what this second objective means or how to assess the adequacy of U.S. military forces to do either denial or punishment. If, as some experts have speculated, the second requirement means using air and sea power to attrite an aggressor's military forces without employing significant land forces, it is by no means clear that our ammunition stocks are sufficient for such an effort.

The 2014 QDR did the Obama Administration, the Pentagon, and the American people a disservice by pretending that the proposed budgets were adequate to maintain a force structure with sufficient readiness. The reality is that if America wants a two-war military, its citizens have to be willing to pay for it. The next Administration will face a difficult choice: increase defense spending or turn one important region of the world over to the tender mercies of authoritarian or even fundamentalist-theocratic states.

Inadequacy of the Current Analytic Paradigm

It is increasingly evident that the current approach to defining a sizing standard is inadequate. In fact, it is not really a sizing standard at all; rather, it is a way to justify reductions in the size of the military in the face of a declining defense budget.

Some have characterized the new formulation as a one-and-a-half-war standard, but the threat of major theater wars in Southwest and Northeast Asia is no less serious today than it was when the two major theater war standard was articulated some 20 years ago. If anything, the possibility of two major conflicts that overlap in time is increasing, and the formulation of the mission for the second conflict as the capability to deny an aggressor's objectives or impose unacceptable costs is so vague as to be meaningless. The lack of a clear, more precise and usable standard for sizing the U.S. military leaves defense planners in a quandary: Is the one major theater war to take place in the desert, jungles, or mountains? Is it against a nuclear-armed adversary or one with only limited long-range strike capabilities? Will America have capable allies in theater? The two regions of the world of most interest to military planners are quite dissimilar and require different force structures.

Similarly, regarding the second part of the standard, how many fighter wings or strategic bombers are needed to deny an aggressor's objectives or impose unacceptable costs? One nuclear weapon should do it, but America is not about to go back to the good old days of the 1950s. Without a sense of against whom or when a buildup might be required, it is impossible for the military to judge as it downsizes today how much equipment or which people and capabilities should be retained in order to have the ability to expand in the face of a larger future threat.

The public debate on the adequacy of America's national defenses waxes and wanes with every crisis. There is a high point every four years with the publication of the Quadrennial Defense Review. Unfortunately, each QDR is sui generis and, despite claims by each Administration that it has taken a long-term perspective, deals only with near-term challenges. There is no common standard, no yardstick
by which to measure the adequacy of U.S. military power over time.

Moreover, even though QDRs are required by law to take a long-term perspective on the adequacy of U.S. forces, they have never done so. Rather, they provide a static vision of the adequacy of U.S. military forces and, even then, not against the most formidable threats and adversaries. Hence, the QDR is a backward-looking, out-of-focus Polaroid picture that tells us nothing about how much military power the nation needs relative to both missions and threats.

The static, disconnected nature of this analytic approach does not permit an adequate characterization of the arc of strategic trends involving defense spending, force evolution, or technology proliferation. As a consequence, it is easy for negative conditions such as the long-term decline in the U.S. military to be obscured in policy discussions. But this is only half of the problem. The decline in American power has been exceeded by that of its major allies: Not even a handful of NATO countries spend the agreed minimum of 2 percent of gross domestic product (GDP) on defense.

This is now a military beset by challenges on all sides. It is worn out from overuse and inadequate modernization. There is a clear and growing negative tilt in the strategic military balance between the United States and its allies on one side of the scales and rogue states and prospective adversaries on the other side. A combination of factors—war weariness, financial crises, unfavorable demographics, entitlement spending’s growing weight on national finances, the rising costs associated with modern all-volunteer militaries and the global commons, and a failure to make the case publicly for adequate defense spending—has contributed to the pronounced decline in Western military strength.

And now the United States is about to tilt the scales further against its own interests. Sequestration would impose serious and poorly distributed cuts in defense spending across the entire Department of Defense. The military already is reducing end strength, retiring hundreds of airplanes and dozens of ships and slashing training activities. Sequestration will only make the situation worse.

**Military Investment by America’s Adversaries.** While it is important to appreciate the long-term downward trends in U.S. military forces and capabilities, this is only half of the problem. It is equally important to appreciate the trends in military investments by prospective adversaries.

Over the past five years, the overall share of defense spending by the West has shrunk from around three-quarters to one-half of the global total. For more than a decade, however, China has increased its defense spending by double digits, more even than the annual growth in its GDP. It has developed, deployed, and—according to recent reports—demonstrated an operational anti-ship ballistic missile. And China’s area denial/anti-access capabilities continue to grow: Beijing is deploying anti-space forces that could deny the United States the use of space in a future conflict.

Furthermore, Russia has announced yet another major defense spending program designed to close the technology gap between Moscow and the U.S. and its NATO allies. Within another decade, the combined defense spending of Russia and China could exceed that of the United States.

The International Institute for Strategic Studies’ *2014 Military Balance* makes a particular point of the contrast between the decline in Western military investments and the sharp rise in defense spending and concomitant arms expansion of programs in the Asia-Pacific region:

> Whereas defence spending in North America and Europe has stagnated or declined since the 2008 financial crisis, over the same period real defence outlays in China and Russia rose by more than 40% and 30% respectively.

In real terms, total Asian defence spending in 2013 was 11.6% higher than in 2010. The largest absolute spending increases over the past year occurred in East Asia, with China, Japan and South Korea accounting for more than half. China now spends about three times as much as India on defence, and more than neighbours Japan, South Korea, Taiwan and Vietnam combined.

These outlays are fuelling heightened military procurement in a region replete with conflicting territorial claims as well as long-standing potential flashpoints. Not least because of the Asia-Pacific’s central place in the global economy, the rapid pace of capability development and the potential for accidental conflict and escalation will continue to be of concern.
Overall, the scope for competition—and potential confrontation—is broad. It might develop in different domains, such as space and cyber, through the development of new military technologies, such as directed energy weapons, or even in newly accessible regions, such as the Arctic.

For the West, what is clear is that the end of the Iraq War and the impending drawdown from Afghanistan mark neither an end to crises inviting Western military responses, nor a definitive end to Western intervention. Events on Europe’s periphery will continue to demand attention, and there remains substantial capacity to deploy force.9

Yet because of the limits of the current analytic paradigm, the intersecting implication of these two trends—Western military decline and the growing military capacity of states hostile to Western interests—is never addressed. The current analytic paradigm neither acknowledges these adverse trends nor makes any serious effort to identify the investments in U.S. military forces, platforms, and capabilities that must be made to reverse them.

More with Less. Moreover, as American military power declines, the demands made on the U.S. military are increasing. The then-Commandant of the Marine Corps, General James Amos, recently opined that in view of projected U.S. defense budget cuts on the one hand and the explosion of international crises and threats to U.S. interests on the other, he expected his service and the Joint Force, at a minimum, to be asked “to do the same with less.” His real concern, he acknowledged, was that the U.S. military would be asked “to do more with less.”10

Yet this potentiality—having to do more with less—is another area in which the current analytic paradigm is inadequate. Specifically, it fails to account for unchanging or increasing demands on the military at a time when both the size of the force and its capabilities relative to evolving threats are declining.

How does the military do the same or more with less? One way is by working the force harder. Units, particularly those with high demand/low density capabilities, are deploying overseas for longer periods and, as a consequence, spending less time at home. Platforms and equipment are operated at a higher rate than predicted, thereby increasing maintenance and sustainment costs and bringing forward the date at which aircraft, ships, and vehicles will need to be overhauled or even replaced. Eventually—really, in a few short years—this approach will break the force.

The other way to do more with less is by accepting greater risk. The term “risk,” while often used by military officers, Defense Department civilians, and think tank experts, is never clearly or accurately defined in ways that are understandable to Members of Congress or the public. What “risk” really means is that while the mission, the region, or the commitment will not be formally abandoned, there is no way it can be supported or defended with the forces available. Insufficient, inadequately trained, or poorly supported forces will be sent to accomplish the impossible. Remember Task Force Smith in Korea in 1950? Ultimately, this approach means that Marines (and other service personnel) may sacrifice their lives needlessly.

Further defense budget cuts—a consequence of sequestration—will require reductions in force structure and modernization programs that will virtually guarantee the inability of the United States to deploy credible military forces to two regions at the same time. For two years, senior Administration officials and uniformed personnel have been attempting to make clear to Congress and the American people the consequences of sequestration. The lack of a comprehensive, credible, and consistent analytic national methodology for assessing the adequacy of U.S. military capabilities and identifying shortfalls has severely impeded this effort.

Indeed, the closest anyone has come to clarifying what the Pentagon means by “accepting increased risk” was in testimony by the Joint Chiefs of Staff last year before the House Armed Services Committee. If sequestration comes into effect in 2016, the Pentagon will not have sufficient forces, air and sea-lift, or munitions to conduct two major regional conflicts. As the Vice Chief of Staff of the Air Force, General Larry Spencer, warned, “We won’t have the capacity to respond to what we say we can respond to today.”11

Then-Army Vice Chief of Staff General John Campbell, whose service is facing the possibility of simultaneous land wars in Europe, the Middle East, and Northeast Asia, stated the danger in even starker terms: “We’re mortgaging the future. We’re really pushing hard for additional money to try to bring up short-term readiness, but then in 2016, if we go to sequestration, we all just fall off the map again.”12
The Elements of a New Methodology

If the American people are to be engaged in a reasonable debate over future defense spending and the adequacy of the U.S. military, a new yardstick for defining sufficiency is required. Such an index of U.S. military power needs to be designed for the long haul: a methodology capable of tracking changes in military capabilities and critical technologies that can take decades to make an impact.

This yardstick must reflect both the high-impact/low-probability scenarios and those that are more likely to occur but have lesser consequences. It must also reflect changes not only in U.S. forces and capabilities, but also those of friends, allies, and—most important—adversaries. Thus, this methodology must go beyond quantitative measures of military power (the bean counts) and include a clear articulation of enduring and vital U.S. security interests, an accurate assessment of both the current and likely future threats to those interests, and a net assessment of the ability of the U.S. military to achieve desired results in the face of changing threats over time.

A new methodology must start with a vision of U.S. national security, as well as the defense strategy to support it, that recognizes vital American interests. For America, uniquely among the great powers of history, securing its vital interests did not mean diminishing those of other nations. Rather, America’s defense of its vital interests has supported the economic, social, and political development of the majority of the world’s peoples. There is a strong correlation between American interests and those of a liberal and peaceful world order:

After more than two centuries of independence, the United States’ vital interests, in our evaluation, have largely remained consistent over long periods of time, with transformative technologies serving as the single greatest reason for change in American interests. In many respects, two centuries of growth and change only served to filter and clarify what is and is not in the national interest. By reinforcing the enduring nature of the nation’s interest, events such as World War I & II, the Cold War, and the attacks of September 11, 2001 have not fundamentally reshaped what matters most.\(^\text{13}\)

In the past, it has been America’s tendency to focus both strategic analyses and force planning on the demands of the war-fighting mission. Certainly, at present, the minimum standard for the U.S. military is to be able to fight two MRCs.

It is necessary but insufficient to evaluate the adequacy of the U.S. military against the standard of its ability to fight its nation’s wars. Instead, a new methodology must recognize that today and for the foreseeable future, the U.S. military is the linchpin in the global security system.

Indeed, most U.S. vital interests have to do with issues related to maintenance of a stable international order: freedom of the seas and airways, access to trading partners, maintenance of a community of like-minded liberal democracies, and deterrence of would-be regional aggressors. The international system is not a game of Jenga in which the removal of a critical support structure merely results in one’s tower collapsing. Helping to maintain a peaceful international order is a vital U.S. national security interest.

Toward a New Strategic Concept

For more than 20 years, it has been an accepted fact of U.S. security policy that the ability to deter regional aggression in two separate regions of the world at the same time—to fight and win two MRCs—also is critical to the maintenance of a peaceful international system. In view of the growing militancy of the regimes in North Korea and Iran, as well as efforts by both Russia and China to assert control over adjacent land, sea, and air spaces, it is difficult to conceive of a time when the two-MRC standard will no longer be applicable.

The Chairman of the Joint Chiefs of Staff, General Martin Dempsey, recently proposed a variation on the regionally focused MRC standard to include Russia and China. He proposed a strategic concept that he calls “two, two, two, one.”

Here’s my elevator speech about strategy. Two, two, two, one: Two heavyweights will influence our future strategy, Russia and China. Two middleweights, North Korea and Iran. Two networks, al-Qaeda and transnational organized crime from our southern hemisphere. And one domain—cyber. And those things have influenced, are influencing me today and will influence you in the future. One of them or more.\(^\text{14}\)

What is most noteworthy about General Dempsey’s formulation is that it includes both Rus-
sia and China as prospective challengers. While previous defense strategies and each QDR have made reference to the challenges posed by Russia and China, this is the first time that these two countries have been clearly identified as countries with whom the United States must consider the prospect of conflict.

Mapping the two-MRC requirement against the “two, two, two, one” strategic concept raises some interesting questions about the adequacy of the U.S. military. Is the Pentagon capable of fighting two nearly simultaneous regional conflicts against both Russia and China? General Dempsey makes it clear that he does not think war with either nation is likely, particularly if the United States and its regional allies maintain the means to deter them. But to deter, U.S. forces must be able to pose a credible threat at least to Russia’s and China’s presumed or prospective war aims or valuations.

Furthermore, is the U.S. military postured to fight two middleweight powers? Since, as General Dempsey says, these two states are less predictable and more roguish, does America not have to plan to defeat both of them in detail, including changing their regimes? Is a force structure able to defeat in detail one or both middleweight powers essentially adequate to achieve denial/cost imposition against Russia or China?

One approach to force sizing for multiple MRCs that would also match General Dempsey’s strategy would be to consider a conflict with a middleweight power as the full-out conventional conflict and a face-off with Russia or China as requiring the abilities to deny their objectives and/or impose unacceptable costs. In other words, a war with Russia or China would be limited in scope, which seems reasonable considering the large nuclear arsenals that both nations possess.

**Strategic Surprises.** A new methodology must not only address known challenges; it must also make allowances for the possibility of strategic surprises. The recent blitzkrieg that took the extremist group that goes by the name of the Islamic State of Iraq and al-Sham (ISIS) almost to the gates of Baghdad should be enough to convince any reasonable observer that this is a bad time to be reducing the size of the U.S. military.

As of a few months ago, no one in Washington had even heard of ISIS, and it was just a couple of years ago that President Obama assured the American people that al-Qaeda and its affiliate groups (one of which, it turns out, was ISIS) were decimated and on the run. Now U.S. “advisers” are back in Iraq, unmanned aerial systems are conducting surveillance missions over the newly declared caliphate, a carrier battle group and amphibious assault ship loaded with Marines are positioned in the northern Arabian Gulf, and air strikes are underway.

This sudden turn of events is ironic in part because one of the central operating assumptions of the Administration’s defense policy was that this country would not again engage in a large-scale and sustained stability operation. This assumption was the basis for slashing the size of the active U.S. Army from a high of 570,000 troops to some 450,000. While President Obama has promised that there will be no American boots on the ground, can we accept this as an ironclad certainty if ISIS threatens to take Baghdad? What about when ISIS turns its attention to Jordan, a long-standing U.S. ally?

The reality is that America’s leaders have generally done a poor job of predicting when, where, and how this nation will fight. Since 1950, three factors have repeatedly saved the U.S. from military disaster: the size of the armed forces, America’s technological superiority, and the robustness of the defense industrial base. For example, the Cold War military was of sufficient size and power to make up for a plethora of strategic and operational mistakes. America discovered, for example, that the B-52s originally acquired to deliver nuclear weapons on Soviet targets were more effective as conventional bombers. Moreover, there were so many B-52s that the Air Force could afford to lose nearly two dozen during Operation Linebacker II over North Vietnam.

Today, all three of these historic sources of salvation are at risk. The military is being reduced to a size at which it will be able to fight one war at best. America’s technological edge is being challenged by prospective adversaries abroad and by a broken acquisition system at home. The U.S. defense industrial base, while still capable of producing world-class weapons systems, lacks the robustness to support a rapid and sustained defense buildup. On its own, the requirements for a robust and responsive defense industrial base should be considered in any new assessment of U.S. military capabilities.

The rise of ISIS is but one of a host of strategic, operational, and technological surprises that have confronted the United States in recent years. If this
nation is going to protect its vital interests, deter conflicts with would-be regional hegemons, reassure allies, and respond to crises of all sorts, it needs a robust military of sufficient size, sophistication, resources, and readiness to deal not only with the known threats, but also with the inevitable surprises. A key measure of the adequacy of U.S. military might is its ability to withstand surprises of all kinds.

A New Approach. Recognizing the limitations of the existing methodology for assessing the adequacy of the U.S. military, the House Armed Services Committee has proposed a new approach that would replace the QDR with two documents: a Quadrennial National Security Threats and Trends report (QNSTR) and a Defense Strategy Review (DSR). This new approach also would give greater responsibility to the National Defense Panel.

The QNSTR would provide a definition of U.S. national security interests, an assessment of trends that could affect those interests, and the identification of threats to those interests, all for multiple time periods. The new DSR would address the manifest inadequacies of the existing QDR process while also significantly expanding the roles and responsibilities of the National Defense Panel, requiring it to consider alternative strategies, force structures, capabilities, and budgets—thereby ensuring that the U.S. military is capable of prosecuting the full range of assigned missions.15

Finally, an informed public debate about the manner in which the adequacy of U.S. military forces is measured, both quantitatively and qualitatively, requires an informed and forward-looking analytic approach. It is therefore time to revitalize the process of net assessment as part of an overall effort to establish an ongoing, publicly accessible index of U.S. military power. In many ways, doing so in the current fluid security environment will be even more challenging than it was during the Cold War.

America's armed forces are at a crossroads. The American people need to understand not only the role this nation and its military play in the world, but the importance of global peace and stability to the security of the homeland and their personal well-being. They also need to be given the facts: how large and capable a military is required in order to meet America's vital national security interests and what it will realistically cost to acquire and maintain such a military.

The American people need to fully appreciate the risks associated with reducing the U.S. military to the point at which it can only “do less with less.” Ultimately, however, the American people need to be convinced that their military will be used in ways that support U.S. interests and that decision makers will make wise use of the resources with which they are provided.
Endnotes:


Rebalancing to the Pacific: Asia Pivot or Divot?
Bruce D. Klingner

The Obama Administration heralded its Asia Pivot strategy as a major break from the policies of its predecessor, even proclaiming that the U.S. was now back in Asia as a result. Asia was to be given primacy in American foreign policy, reflecting the importance of the region to U.S. national interests and the drawdown of American involvement in Iraq and Afghanistan.

Yet three years after its introduction, uncertainties linger as to just how significant a policy shift the Asia Pivot actually was. More important, Asian nations are now questioning U.S. military capabilities and resolve—the result of underfunded U.S. defense requirements and perceived American foreign policy missteps.

Perceptions that U.S. rhetoric has not been backed by sufficient resources and commitment and that Washington remains focused on a series of unresolved crises elsewhere can have profound implications for Asia. North Korea and China, for example, may be emboldened to test the United States as they pursue policies that are inimical to peace and stability in Asia.

Asia is America’s largest trading partner, accounting for 38 percent of total U.S. trade in goods for 2013, compared with 30 percent with North America and 20 percent for Europe. Five of the United States’ seven major defense treaties are with Asia-Pacific nations, and Washington has strong partnerships with many other nations in the region.

Consequently, control of Asia by a hostile power would threaten American economic and security national interests. Yet stability in Asia is already being threatened by a number of factors: North Korea’s growing military capabilities, China’s increasingly aggressive behavior, long-standing sovereignty disputes, historical animosities, and rising nationalism.

In the absence of any regional architecture comparable to either the North Atlantic Treaty Organization or the European Union, the United States has proven to be the only nation with both the capabilities and the historical record necessary to assume the role of regional balancer and “honest broker.” But to reassure allies and deter opponents, the United States must maintain a strong economic, diplomatic, and military presence throughout Asia. Such an unambiguous approach is the key to regional peace and stability.

Asia’s Strategic Importance to the United States

Asia has been since the 19th century—and will continue to be—a region of vital importance to the United States. At present, Asia contains more than half of the world’s population; two of the three largest global economies (China and Japan); and the world’s fastest-growing economies, which generate 40 percent of the world’s GDP growth—more than any other region.

Continuity in U.S. Asia Policy

For decades, the United States has maintained a significant military presence in the Pacific. As President George H. W. Bush declared in his 1990 East Asia Strategy Initiative, “we believe that our forward pres-
ence in the Asia–Pacific region will remain critical to
detering war, supporting our regional and bilateral
objectives, and performing our military missions.”
In the words of Admiral Samuel J. Locklear, III, com-
mander of U.S. Pacific Command (PACOM), “For
about the last 70 years, we have been the centerpiece
of the security architecture [in the Pacific].”

As the U.S. withdrew military forces from Iraq
and Afghanistan, the Obama Administration evalu-
ated the United States’ global security interests and
saw the need for greater prioritization to Asia. Secre-
tary of State Hillary Clinton’s seminal “America’s
Pacific Century” article in Foreign Policy defined
the Asia Pivot as “among the most important diplo-
fomatic efforts of our time.” President Barack Obama
declared in 2011 that “I have, therefore, made a delib-
erate and strategic decision—as a Pacific nation, the
United States will play a larger and long-term role in
shaping this region and its future.”

Emphasizing the reinvigoration of American
focus on Asia, President Obama declared that “the
U.S. is back in Asia.” The policy was able to build on
the efforts of multitudes of U.S. diplomats, business-
people, and servicemembers who had continued to
toil in Asia even as greater priority had been placed
on the global war on terrorism.

The Obama Administration points out correctly
that the Asia Pivot is a multifaceted strategy that
consists of more than just a military component.
However, nearly three years after the rollout of the
Asia Pivot, many of the details remain undefined,
and there is uncertainty as to the extent to which the
strategy is different from long-standing U.S. policies
in Asia.

Since diplomatic and political engagement is eth-
ereal and success is difficult to measure, some experts
have adopted metrics such as “number of meetings
in Asia attended by senior U.S. officials” in order to
measure the success of the Asia Pivot. For exam-
ple, the National Defense University assessed that
Obama Administration officials have “spent signifi-
cantly more time in [Asian] regional meetings” than
those of his predecessors.” Meetings are important
to affirm alliances, establish rapport among leaders,
and push policy objectives; but it is easy to get lost
in the procedures and forget that meetings, dialogue,
and engagement are tools to reach an objective rath-
er than objectives themselves.

Other than new trade agreements, economic
interaction with Asia is largely outside of the govern-
ment’s control. Moreover, the major economic com-
ponents cited as proof of the Asia Pivot—the South
Korea–U.S. Free Trade Agreement and the multilat-
eral Trans-Pacific Partnership—were both initiated
by the Bush Administration.

Changes in the U.S. military force posture in Asia
are thus the most measurable component of the
Pivot and the one that lends itself to distinguishing
this new prioritization from that of previous Admin-
istrations. President Obama pledged in 2012 that the
United States “will be strengthening our presence in
the Asia Pacific and budget reductions will not come
at the expense of that critical region.” Then-Secret-
tary of Defense Leon Panetta affirmed that “[w]e
will continue not only to maintain, but to strengthen
our presence” in Asia and “increase its institutional
weight and focus on enhanced presence, power
projection, and deterrence in the Asia–Pacific.”

Secretary of Defense Leon Panetta, during his
2012 Shangri-La Security Dialogue speech, declared
that by 2020, the Navy would redeploy its forces from
today’s 50/50 split between the Pacific and Atlantic
to a 60/40 split in favor of the Pacific. He also stated
that there would be six aircraft carriers in the Pacif-
ic as well as the majority of U.S. cruisers, destroyers,
Littoral Combat Ships, and submarines.

Asia Pivot Requires Forces and Funding

The Asia Pivot policy is sound only if the requi-
site military forces are deployed in the Pacific—a
number that must be commensurate with a stated
increase in the region’s importance. Without such
deployment, the Pivot will fail to reassure allies
or deter potential opponents. Claims that U.S. forc-
es in the Pacific will be immune from duties else-
where or from budget cuts that will affect the U.S.
Joint Force over the next several years simply do
not hold water. Though the U.S. Army and Marine
Corps were increased by 100,000 troops to handle
the Iraq and Afghanistan conflicts, U.S. soldiers
and Marines were also removed from Asia to serve
in those wars.

Even well before sequestration-mandated bud-
cut, it was obvious that the United States was
underfunding defense requirements essential to
maintaining security commitments in Asia. In Feb-
uary 2012, Panetta testified that the United States
would rebalance its force posture to emphasize
Asia, but he added that the defense budget main-
tained only the current bomber, aircraft carrier, and
big-deck amphibious fleets and restored Army and Marine Corps force structure in the Pacific to pre-Iraq and pre-Afghanistan deployment levels.15

On the surface, the Obama Administration’s 2015 budget projections appear to maintain current levels of defense spending. As economist Robert Samuelson points out, defense spending in nominal dollars (unadjusted for inflation) remains static between 2013 and 2024: $626 billion in 2013 and $630 billion in 2024.

However, a closer review of these numbers reveals that, once adjusted for inflation, U.S. defense spending drops by 25 percent.16 It is difficult to envision how the President’s Pivot can be executed successfully with such a decrease in defense spending, a point underscored by Secretary of Defense Chuck Hagel, who has stated that, with sequestration budget cuts, the military is in danger of becoming “a hollow force, one that is not ready, one that is not capable of fulfilling assigned missions. In the longer term, after trimming the military enough to restore readiness and modernization, the resulting force would be too small—too small to fully execute the president’s defense strategy.”17

**Asia Pivot Derailed by Defense Budget Cuts**

Although there have been no force reductions in the Pacific as there have been in other commands, the cuts in the overall defense procurement and training budgets have already negatively affected U.S. forces in the Asia–Pacific region. Assistant Secretary of Defense for Acquisition Katrina G. McFarland admitted in March 2014 that as a result of defense budget cuts, “Right now, the [Asia] pivot is being looked at again, because candidly it can’t happen.”18

The ability of the U.S. to fulfill its security obligations rests on two factors: the actual number of military forces available and the quality of those forces. Having requisite forces in the long term requires sufficient ongoing funding for their procurement. The quality of those forces is determined in part by adequate training. Current U.S. defense budgets for military forces in the Pacific are insufficient to provide for numbers or quality, let alone both.

**Navy.** Chief of Naval Operations Admiral Jonathan W. Greenert has told Congress that in order to meet the global needs of combatant commanders, the Navy would need a 450-ship fleet. Currently, the Navy has 289 ships and hopes to achieve a 306-ship fleet by the end of the decade, but attaining 306 ships would require a shipbuilding budget of $18 billion per year over the next 20-plus years. Since the current FY 2013–FY 2019 plan is for only $13 billion per year, “the largest fleet of current ship designs that the Navy would be able to afford is 30% smaller than the goal—or about 220 ships.”19

Representative Randy Forbes (R–VA), Chairman of the Seapower and Projection Forces Subcommittee of the House Armed Services Committee, has expressed concern that “in 2007 we met 90-percent [sic] of the combatant commander’s requirements. This year we will only meet 43 percent.”20 In addition, the current defense budget does not include funding to refuel and overhaul the USS George Washington, which could lead the Navy to have to decommission the aircraft carrier. Doing so would reduce the carrier fleet from 11 to 10, despite then-Secretary of Defense Panetta’s pledge that “the President of the United States and all of us have decided that it is important for us to maintain our carrier presence at full strength. And that means we’ll be keeping 11 carriers in our force.”21

Given that the Navy historically dedicates from one-third to one-quarter of its deployed fleet to operations in the Pacific, such a dramatic decrease in fleet size can only have a negative impact on the United States’ naval capabilities in the region.

**Marine Corps.** Naval and amphibious operations are the backbone of U.S. military deterrence and defense capabilities in the Pacific. Yet Admiral Samuel Locklear, III, PACOM commander, testified that due to a lack of large amphibious ships, landing craft, and other amphibious vehicles, the Navy and Marine Corps do not have enough assets to carry out contested amphibious operations in the Pacific if a crisis were to arise.22 Locklear added that there is a “continuing demand” for PACOM to provide other deployed and ready forces to the other regional combatant commanders, creating “periods in PACOM where we lack adequate intelligence and reconnaissance capabilities as well as key response forces, ultimately degrading our deterrence posture and our ability to respond.”

The Marine Corps has stated that it would need 54 amphibious assault ships to fulfill the validated requirements of all the combatant commanders. That would be the number needed to deploy three Marine Expeditionary Brigades (MEBs), since each MEB requires at least 17 ships for a force of 17,500 Marines and all their gear. But the Navy’s shipbuild-
ing budget—a critical factor for U.S. forces in the Pacific—has not been sufficient to meet combatant commander requirements for years, so the Marine Corps and Navy have had to settle for the ability to transport and deploy less than two full MEBs—nearly half of required capabilities.

The most recent Quadrennial Defense Review (QDR) again validated the requirement for 38 amphibious warships to move two MEBs, but current fiscal pressures led to a decline from 33 to 28 warships, meaning that the Corps’ actual ability to conduct a large-scale amphibious operation will amount to a mere 1.5 MEBs, or roughly a half-dozen battalions of Marines with their supporting aviation—presuming that all amphibs from around the world were brought together for a single operation. The latest Navy plans do not envision a force of 33 amphibious warships until at least the mid-2020s, which would still meet only two-thirds of the total requirement.

Then-Marine Commandant General James Amos warned that defense cuts could “translate into increased loss of personnel and materiel, and ultimately [place] mission accomplishment at risk.” Twenty retired Marine Corps generals wrote Congress in March 2014 to warn that the shortage of amphibious ships—and the reduced maintenance of the existing fleet—had “degraded our current national security capabilities and will have negative effects long into the 21st century.”

Beyond this, Marine Corps fighter squadrons used to have 12–14 aircraft available. Now they usually have 12, but in 2015 that may decrease to eight deployable aircraft per squadron.

**U.S. Air Force.** The U.S. Air Force has grounded 13 combat squadrons (250 planes), nearly one-third of its active-duty fighter and bomber squadrons. Air Force officials said they have implemented a “tiered readiness” approach for active-duty air combat units and warned that there may not be sufficient combat air power to respond immediately to contingencies. Moreover, for every month a squadron does not fly, it takes an equal number of months to retrain the pilots.

Recently, the Air Force had to cancel a two-week flying exercise in which units from the Asia–Pacific region and allied air forces would have trained together. The 374th Airlift Wing in Japan had to cut its flying program by 25 percent and cancel its participation in a combined drill in Thailand called Cope Tiger.

**U.S. Army.** The Army has had to cut training above squad and platoon levels, including all but one of the Combat Training Center rotations scheduled for brigades this fiscal year. Depot maintenance was also halted, and the Army cut flying hours from aviation training, creating a shortfall of pilots. General Raymond T. Odierno, the Army Chief of Staff, told Congress that “should a contingency arise, there may not be enough time to avoid sending forces into harm’s way unprepared.”

General Curtis M. Scaparrotti, commander of U.N. and U.S. forces in Korea, testified that he has doubts about America’s ability to counter a large-scale North Korean attack effectively due to the low readiness of forces stationed outside of Korea. He warned that “[a]ny delay in the arrival or reduction in readiness of these forces would lengthen the time required to accomplish key missions in crisis or war, likely resulting in higher civilian and military casualties.”

In other words, cuts in the defense budget affect the ability of the U.S. military to prepare for and engage in operations in general, but especially the Pivot to Asia.

**Reducing Requirements Rather than Providing Resources**

The ongoing cuts in the U.S. defense budget reflect President Obama’s intent to reduce U.S. commitments overseas. President Obama perceives that “the tide of war is receding” and with it “the end of long-term nation-building with large military footprints.” Defining the overseas threat environment as less hostile, the President has directed a decrease in U.S. defense requirements and capabilities.

President Obama’s 2010 QDR stated that “U.S. forces must plan and prepare to prevail in a broad range of operations [including] conducting large-scale stability operations.” But his 2012 Defense Guidance reversed this position, saying instead that “U.S. forces will no longer be sized to conduct large-scale, prolonged stability operations” like those in Iraq and Afghanistan.

Similarly, President Obama’s 2012 defense guidance advocated jettisoning the long-standing “two war” force-sizing construct. The new, more constrained strategy meant abandoning the decades-long U.S. objective of being able to fight two opponents simultaneously—instead substituting a delaying action against the second opponent.
By eliminating the standing U.S. objective of being able to fight two major regional conflicts simultaneously, the President provided himself the justification to slash defense forces. For example, the President noted that there is “significant excess capacity in the U.S. airlift fleets.” However, this excess exists only because the President’s new policy no longer required the ability to manage two large conflicts. Furthermore, despite a critical need for transport in the Pacific, President Obama directed the Pentagon to cut 27 C-5, 65 C-130, and 38 C-27 transport aircraft even though the Pacific theater—presumably the more important region as proposed in the Asia Pivot strategy—has a much higher requirement for long-range lift than any other due to its geography alone.

Unfortunately, as demonstrated by recent events, the international environment remains a dangerous arena. After Russia annexed Crimea, President Obama dismissed the idea of conflict in Europe as “the kind of thinking that should have ended with the Cold War.” He described Russian President Vladimir Putin as operating from a “position of weakness” in Ukraine, despite Putin’s obvious success in carving out a portion of Ukraine’s sovereign territory and fomenting dramatic levels of instability in its eastern region. Similarly, Secretary of State John Kerry opined that “[y]ou just don’t in the 21st century behave in 19th century fashion by invading another country.” It seems the leaders of other countries are not inclined to behave as the U.S. would prefer.

Kerry was also uncertain of the need to augment forces in the Pacific as part of President Obama’s Asia Pivot. At his confirmation hearings, Kerry announced:

I’m not convinced that increased military ramp-up is critical yet. I’m not convinced of that.... We have a lot more bases [and forces] out there than any other nation in the world, including China today.... You know, the Chinese take a look at that and say, what’s the United States doing? They [sic] trying to circle us?

The Asia Pivot Is Not Working

America’s Allies Are Not Reassured. During his 2014 Asia trip, President Obama claimed that “our alliances in the Asia Pacific have never been stronger. Our relationship with ASEAN countries in Southeast Asia has never been stronger. I don’t think that’s subject to dispute.” But for all the emphasis on the Asia Pivot, there is little to show in actual, tangible results. Allies are nervous, and opponents are emboldened. Indeed, a prevalent theme of President Obama’s foreign policy and his 2014 Asia trip was built around the need to reassure U.S. friends and allies in the region.

Allies of the United States around the world—not just those in Asia—have expressed grave misgivings about Washington’s capability and resolve to help them defend against escalating security threats. First up were the Europeans, who expressed concern that the Asia Pivot meant a reduced American commitment to their defense. The withdrawal of two U.S. Army brigade combat teams (BCTs) from the continent, cutting in half the BCTs that the U.S. maintained in Europe following the dissolution of the Soviet Union, heightened their trepidation.

Asian allies, initially heartened by the renewed U.S. focus on the region, continue to express concern about China’s unrelenting assertiveness in pushing extralegal sovereignty claims on their territories. The weak U.S. response to Beijing’s bullying led the Philippines, one of just a handful of American treaty allies, effectively to cede its claims to the Scarborough Shoals. Consequently, an increasingly nervous Tokyo has called repeatedly for stronger U.S. support to deter similar Chinese intimidation against the Japanese-controlled Senkaku Islands. South Korea and Japan watched with growing dismay as Washington first cut $480 billion from the long-term military budget only to warn then of the catastrophic consequences that sequestration would have for U.S. armed forces. Yet when the sequester hit, slicing an additional $500 billion, Washington claimed that it could still fulfill American security commitments, though admittedly with “additional but acceptable risk.”

Seoul and Tokyo were flummoxed when Syrian President Assad crossed the U.S. redline against using chemical weapons against civilians and President Obama refused to implement the pledged military response. These allies have privately expressed fears that Washington might similarly abandon its defense commitments to them if North Korea or China attacked.

In early 2013, North Korea ratcheted up tensions by threatening nuclear strikes against the U.S. and South Korea, abrogating the armistice ending the Korean War and nullifying all inter-Korean nonag-
Regression pacts. Initially, the United States demonstrated resolve, augmenting forces committed to an annual bilateral military exercise with South Korea. However, Secretary of State Kerry soon revealed that as the crisis continued, the Obama Administration had elected to change course in the face of North Korean threats. Kerry stated during a press conference in Seoul that “President Obama [had] ordered a number of exercises not to be undertaken. We have lowered our rhetoric significantly.”

Rather than standing up to blatant belligerence, the United States stepped back, citing the potential for conflict escalation on the Korean peninsula as its primary concern. Secretary Kerry explained, “Let’s face it. Everyone here knows this, we’ve got enough problems to deal with around the world.”

One can only imagine the glee in Pyongyang and the trepidation in Seoul at the U.S.’s prioritizing other regions over defending our Korean ally, in addition to the pall cast over the initial optimism accompanying announcement of the United States’ return to Pacific affairs.

Finally, Russia’s military incursion into Crimea and subsequent U.S. affirmation of support to European NATO nations triggered yet more concerns of a “reverse Asia Pivot.” U.S. officials were dispatched to provide reassurance once again to both European and Asian allies. But the ease with which Putin annexed Crimea and the U.S. inability to prevent it from happening heightened anxiety that China could be emboldened to try a similar seizure in the Pacific.

Opponents Have Not Moderated Behavior. Despite an uptick in meetings in Asia—a case of substituting wingtip shoes for soldiers’ boots—the United States has failed to temper Chinese and North Korean belligerence.

In recent years, Beijing has used military and economic threats, bombastic language, and military bullying to extend its extralegal claims of sovereignty in the East and South China Seas. In November 2013, China declared an Air Defense Identification Zone (ADIZ) over the East China Sea, including the Senkaku Islands, and threatened to use its military to enforce it. Washington condemned the declaration as a provocative act that exacerbated tensions in the region and increased the risks of a military clash. However, U.S. protests and those of other countries in the region have had marginal effect as China continues to maintain the ADIZ.

Beijing attempts to divert attention from its own actions by mischaracterizing Japan as a threat to regional security. China’s bellicose actions have fueled regional concern and have triggered a greater Japanese willingness to confront Chinese expansionism and strengthen the Japanese military. Japan’s willingness to defend its territory has been mischaracterized by China as a resurgence of 1930s imperial Japanese militarism when, in fact, it is a logical response to increased Chinese provocations.

North Korean leader Kim Jong-un has maintained his regime’s threatening behavior and has continued its quest to augment its nuclear and missile-delivery capabilities. North Korea credits Jong-un with being the mastermind behind the regime’s two attacks on South Korea in 2010, which resulted in 50 South Korean deaths. Clearly, the Administration’s current approach to North Korea is insufficient as the Communist nation continues to menace U.S. allies.

Conclusion

For the Asia Pivot to deter aggression, America’s opponents must believe that any belligerent act by them will invite a retaliatory response. Such a response must be able to inflict such cost and pain as to outweigh any potential benefit sought by the aggressor—thereby leading the aggressor to refrain from initiating a military attack in the first place. To deter an adversary, the threat of retaliation must be seen as credible, something that requires both viable military means and a demonstrated unquestionable resolve to use them.

Despite strong pledges of support from U.S. politicians and diplomats, America’s Asian allies will not be reassured—and opponents will not be deterred—if they perceive weakness in either American capabilities or American resolve. America’s slashed defense budgets and unenforced redlines embolden its opponents to practice coercive diplomacy and bully its allies.

North Korea and China could also be tempted to act if either perceives an American public weary of war, an intensely divided U.S. Congress, and U.S. allies even more reluctant than usual to employ military force to counter armed belligerence. Increasingly strained relations between Japan and South Korea over historic issues further complicate matters, as such conflict diverts attention away from current security threats while hindering the development of allied military capabilities.
During his 2014 trip to Asia, President Obama declared support for South Korea and affirmed that the Japanese–U.S. security treaty covers the Senkaku Islands. But for the Asia Pivot policy to be effective, a principled message of affirming U.S. support for international law and defending America’s allies must be backed by resolute U.S. actions, including (1) reversing dangerous defense budget cuts; (2) maintaining a robust forward-deployed U.S. military presence; (3) strengthening and modernizing America’s alliances; and (4) standing up to China’s use of intimidation, coercion, or force to assert a territorial claim.
Endnotes:


34. Ibid.

35. Ibid.


42. Ibid.
The Importance of Special Operations Forces Today and Going Forward

Steven P. Bucci, PhD

In the post-9/11 period of war and subsequent military drawdown, Special Operations Forces (SOF) appear likely to grow in numbers, funding, and importance—but not necessarily in general understanding. One of the most flexible and useful instruments in America's national security toolbox, SOF are regularly referred to incorrectly, incompletely, and with little depth of knowledge by policymakers.

SOF are neither a panacea nor an insignificant oddity. If utilized correctly, they bring great benefit to the nation; used poorly, their capabilities and sometimes their lives are wasted. How, then, should this nation think about these compelling and often mythologized warriors and their role in supporting America's vital national interests?

During times of austerity, the government often looks for ways to get “more bang for the buck.” When this budgetary philosophy is applied to the military, SOF, with their reputation for doing great things with fewer troops and resources than large conventional forces, seem like a bargain. This vision of a “surgical” capability that is made up of mature, “hard” professionals who make the right choices at the right time and that avoids the need to deploy larger formations of citizen soldiers at great expense can be very compelling.

Given America's current fiscal difficulties, there is a growing danger of overutilizing or misapplying SOF, but this is not to say that SOF should not be used. In fact, SOF can and should be a major enabler for other elements of power as well as a shaper of security conditions that can minimize the need for larger deployments of conventional military forces. Getting this balance right is the key challenge for the military and policymakers.

This essay will address numerous issues regarding Special Operations Forces while attempting to answer several questions, including:

- How SOF serve as a tool of U.S. military efforts,
- How SOF provide strategic warning and prepare the environment,
- How SOF enable hard power by providing conventional forces a “warm start” and create options not otherwise possible, and
- How SOF amplify the effectiveness of hard power by doing things like leveraging infrastructure and using their ability to exploit actions/successes.

Finally, this essay will review SOF’s potential as a bridging capability during this time of strained resources. SOF will be a key part of America’s ability to meet the challenges of an increasingly worrisome threat environment while its conventional forces are in decline. Although they are not a substitute for other capabilities in the U.S. military, SOF can mitigate risk by helping to set the operating environment in the most advantageous manner possible.
Special Operations: A Primer

The term “Special Operations Forces (SOF)” is the only correct generic term for the organizations being discussed. It includes certain designated units of all services and all capabilities. First and foremost, SOF are the men and women that make up the units. They are, for the most part, mature and highly trained. A typical special operator (regardless of service or specialty) is married with a family; averages 29–34 years old; has at least eight years on active duty in the general purpose forces (GPF); has some cultural and language training (most are masters of cross-cultural communication); has attended numerous advanced-skills schools; and has at least some college education, if not multiple degrees (this includes the enlisted ranks).²

SOF competently operate a great deal of highly advanced U.S. military equipment and are also proficient with the equipment of other services and countries. They are valued for their out-of-the-box thinking, imagination, and initiative. SOF can and do operate with a small footprint and can survive and thrive with a very light support tail. These SOF are seen as the consummate military professionals and as such are “detached from Main Street” in ways that the 18–22-year-olds in the general-purpose forces are not.

The Department of Defense defines Special Operations (SO) as operations that:

Require unique modes of employment, tactical techniques, equipment, and training often conducted in hostile, denied, or politically sensitive environments and characterized by one or more of the following: time sensitive, clandestine, low visibility, conducted with and/or through indigenous forces, requiring regional expertise, and/or a high degree of risk.³

There are some who claim that conventional forces can and do handle tasks that SOF handle. Yet SOF are often entrusted to perform missions that exceed the authority given to conventional military units, such as operating in “politically sensitive environments” or executing tasks that require special legal authorities.

Organizational Structure

To appreciate how SOF are “special,” one must understand how these forces are organized and how they operate.

U.S. Special Operations Command. The parent command of all SOF is U.S. Special Operations Command (USSOCOM), which is headquartered at MacDill Air Force Base in Tampa, Florida.⁴ Established in 1987, USSOCOM is responsible for manning, training, and equipping all SOF units. It does this in conjunction with the four services, which also provide the troops to the SOF units. Although not a service branch, USSOCOM has certain service-like responsibilities including the procurement of SOF-specific items as needed.

SOCOM has had some disagreements with the services over funding, authorities, and which units get assigned to USSOCOM; it also has sparred with the Geographic Combatant Commanders (GCCs) over the authority to direct SOF missions. Currently, USSOCOM enjoys the widest operational mandate it has ever had and is seen by both the services and the GCCs as a very positive contributor to national security. USSOCOM maintains manning, training, and equipping responsibilities for deployed forces through the Theater Special Operations Commands (TSOCs) that are under the operational control of each GCC. The GCCs operationally manage the TSOCs, but USSOCOM’s worldwide situational awareness allows them to synchronize operations across GCC boundaries.

There are five major subcomponents to USSOCOM: U.S. Army Special Operations Command (USASOC); Navy Special Warfare Command (NSW); Air Force Special Operations Command (AFSOC); Marine Corps Forces Special Operations Command (MARSOC); and Joint Special Operations Command (JSOC)—one for each service with an additional multiservice special mission command. Each of these organizations contributes something unique to the special operations community. They have different roles and tend to specialize in certain types of missions or areas of operation.

Direct vs. Indirect Approaches

SOF operations fall broadly into two categories: direct and indirect. The direct approach consists of SOF raids and other operations that directly target the enemy, such as an operation executed by Navy SEALs to free American and Danish aid workers held by Somali pirates.⁵ According to Admiral William H. McRaven, former Commander of SOCOM:
The direct approach is characterized by technologically-enabled small-unit precision lethality, focused intelligence, and interagency cooperation integrated on a digitally-networked battlefield.... Extreme in risk, precise in execution and able to deliver a high payoff, the impacts of the direct approach are immediate, visible to [the] public and have had tremendous effects on our enemies’ networks throughout the decade.6

Such missions are typically brief (even if planning for them can be extensive) and usually carry a higher potential for the use of weapons; to use a popular description, they tend to be more “kinetic.”

The indirect approach is characterized by long-term commitments of SOF to help enable and aid other nations to improve their own military forces and security. McRaven explains:

The indirect approach includes empowering host nation forces, providing appropriate assistance to humanitarian agencies, and engaging key populations. These long-term efforts increase partner capabilities to generate sufficient security and rule of law, address local needs, and advance ideas that discredit and defeat the appeal of violent extremism.7

While the direct approach is focused on addressing immediate situations such as disrupting terrorist operations, the indirect approach is longer-term and seeks to prevent threatening situations from arising or to defuse them with the lowest investment of U.S. assets. One of the main ways it does this is by equipping U.S. partners to address their own security challenges more effectively. This approach can also be a key to ending larger conflicts on favorable terms.

U.S. Army Special Operations Command. The U.S. Army Special Operations Command (USASOC) has its headquarters at Fort Bragg, North Carolina, and is the largest component of USSOCOM (28,500 troops) with troops spread across the country and some overseas. It has six different types of units under its control: Special Forces, Rangers, Special Operations Aviation, Civil Affairs, Military Information Special Operations, and Special Operations Sustainment.8

U.S. Army Special Forces Command is the parent headquarters of all Special Forces (SF) soldiers, more commonly known as Green Berets.9 They have five active-duty groups. Each is traditionally oriented on a region, but this has been stretched by the wars of the past decade, which required all the SF units to rotate into the fight: Pacific (1st Group); Africa (3rd Group); the Middle East (5th Group); Latin America (7th Group); and Europe (10th Group, Fort Carson, Colorado).10 There are also two National Guard Groups (19th and 20th), which augment their active-duty counterparts.

SF units are generally older and more experienced than their fellow SOF. They are specialists in working with foreign militaries. Green Berets, for example, perform both direct missions and indirect tasks (discussed further below). They operate in 12-man teams, often remote in relation to other American forces.

The 75th Ranger Regiment is another element of USASOC. It is headquartered at Fort Benning, Georgia, and commands three battalions of what are considered the finest special light infantry troops in the world.11 While they are organized much as other light infantry units are organized, the Rangers’ level of training, readiness, and deployability exceeds that of their non-SOF counterparts. Although they are often used in small elements (squad, platoon, or company), the full weight of the Rangers is demonstrated when they perform battalion-level assaults and raids. They operate primarily as a direct action force.

The 160th Special Operations Aviation Regiment (SOAR) has a variety of highly modified rotary-wing platforms. They are stationed at Fort Campbell, Kentucky, and have three battalions organic to the regiment. Known as the Night Stalkers, they leverage not just their advanced and highly specialized equipment, but also their proficiency at operations conducted in the dark. Their aircraft (AH-6/MH-6 Little Birds, MH-60K/L/M Black Hawks, and MH-47 Chinooks) can be refueled in flight, have additional avionics and protective measures beyond the conventional models of these rotorcraft, and have added weaponry. The 160th delivers, provides fire support and supplies to, and (most important) exfiltrates other SOF elements under the most arduous conditions. Their ethos of leaving no one behind makes them a highly sought-after partner for any military operation.

The 95th Civil Affairs Brigade (CA), another resident of Fort Bragg, includes five battalions. Civil Affairs greatly expanded after it was realized in
Afghanistan and Iraq that there was a greater need for active-duty units of this sort. There is a great deal of additional CA capability in the U.S. Army Reserve. These troops are specialists in operating with the civilian elements of another country’s government and economy with expertise ranging from airports to water systems. They can be deployed to assess the needs of a certain region pre-conflict, during combat operations, or post-conflict. They can also assist friendly elements in improving foreign civil structures. They support other SOF units but are regularly assigned to support conventional operations as well.

The 4th Military Information Support Group (MISG) is also stationed at Fort Bragg and has two subordinate MISG groups under its command. Formerly known as Psychological Operations, Military Information Special Operations (MISO) are highly versatile units that often use persuasive methods to convince targeted audiences to act in ways that are desirable to U.S. objectives. From tactical loudspeaker teams that might ask citizens to evacuate a town to strategic leaflet drops to inform an entire region that it would be beneficial to them to surrender, MISO units can be as powerful a weapon as any kinetic or lethal tool.

Also stationed at Fort Bragg, the 528th Sustainment Brigade has medical, logistics, and signal units that support not only Army SOF, but other elements of the U.S. military as well. These troops provide strategic abilities that deploy as often as their more combat-oriented fellow special operators. Two National Guard companies are aligned with the battalion in the 528th.

**Naval Special Warfare Command.** Naval Special Warfare Command (NSWC), headquartered at Coronado, California, is comprised of nearly 9,000 sailors. Its operational arms are the six Naval Special Warfare Groups. Each of these elements is organized differently and home-stationed on either the East or West Coast. They are made up of a combination of Sea, Air, Land (SEAL) operators, Special Warfare Combatant-craft Crewmen, and Enablers.

The SEALs are one of the SOF’s best-known elements, renowned for their physical toughness and extremely exclusive selection process. Although clearly specialists at maritime-related operations, they perform operations far from water as well. If Army Special Forces are primarily indirect operators that can also perform direct action missions, SEALs are primarily direct operators who can also perform indirect training missions. Their specialty is small-unit commando actions and support for amphibious operations. As their name implies, they can be deployed through a multitude of means, including the SEAL Delivery Vehicle (a type of open mini-submarine).

In the same way the SEALs often support the conventional Navy, the Navy often supports the SEALs, providing infiltration platforms such as attack submarines. The NSWC Combatant-craft Crewmen operate multiple vessels such as the MK V Special Operations Craft, the Special Operations Craft Riverine, and NSW Rigid-hull Inflatable Boat that deliver and recover the SEALs. The NSW Groups also utilize talented Enablers in communications, intelligence, and explosive ordnance disposal (EOD) to augment SEAL operations.

**Air Force Special Operations Command.** Air Force Special Operations Command (AFSOC), stationed at Hurlburt Field, Florida, is probably the most diverse among the services’ SOF components. It has 18,000 members spread across the U.S., Europe, and Asia. Under AFSOC’s command is the 23d Air Force, three active-duty Special Operations Wings, two Special Operations Groups, one Air Force Reserve Special Operations Wing, and one Air National Guard Special Operations Wing.

One of AFSOC’s responsibilities is Pararescue, whose personnel are nicknamed “PJs.” These highly skilled operators are medical specialists qualified in multiple infiltration techniques to execute recovery operations. Their mission is “To rescue, recover, and return American or Allied forces in times of danger or extreme duress.”

The Combat Controllers (CCT), another type of AFSOC personnel, are men who specialize in managing air assets from the ground. They can guide aerial bombardments or set up expedient airfields and act as the air traffic control tower. CCT include Special Operations Weathermen who habitually infiltrate into denied areas with other SOF elements to provide weather and intelligence support.

AFSOC also includes Combat Aviation Advisors. These are pilots and support personnel who work directly with foreign air forces as advisors and trainers. They train to become proficient in whatever systems and aircraft their allies operate. They must also be capable of political, cultural, and linguistic interaction with America’s foreign partners.
Finally, there are all of SOF’s aircrews. These teams operate numerous fixed-wing (such as AC-130H/U gunships, MC-130E/H infil/exfil, EC-130J MISO platform, MC-130P refueler, and MC-130J and MC-130W multipurpose) and tiltrotor-wing (CV-22B Osprey) aircraft. Powerful and versatile, these aircraft are the long-range lifeline of SOF.

**Marine Corps Forces Special Operations Command.** Marine Corps Forces Special Operations Command (MARSOC) is the newest of SOF’s service components. Established in 2006, MARSOC recognizes the growing need to provide additional numbers of highly skilled operators who can both teach and train allied foreign military forces while maintaining proficiency in direct action missions. Its mission is “to be America’s force of choice to provide small lethal expeditionary teams for global special operations.”

While numbering only 2,600, these Marines filled a critical gap and have become an essential part of the special operations community. Headquartered at Camp Lejeune, North Carolina, the Command oversees the Marine Special Operations Regiment with three battalions of Critical Skills Operators. They also command an SO Support Group, an SO Intelligence Battalion, and the Marine SO School.

**Joint Special Operations Command.** Joint Special Operations Command (JSOC) is the final component of USSOCOM and is headquartered at Fort Bragg. This organization’s primary responsibility is to act as a special test and evaluation element for advanced SOF equipment and techniques. JSOC also includes a highly classified unit at the joint headquarters for America’s Tier One Countering Terrorism (CT) Special Mission Units (SMU). They have assigned elements from the other components, notably SEAL Team 6 and 1st Special Forces Operational Detachment-Delta. JSOC also has other support (intelligence and communications) units and maintains close relationships with various units from all of the other Commands. The missions given to JSOC are regularly clandestine and are not attributed to its elements.

**SOF Operational Methodologies and Ethos: The “SOF Truths”**

There is insufficient space here for an in-depth review of the entire history and experience of each element in SOF. It is possible, however, to provide a broad outline of SOF operations.

As noted, all missions assigned to SOF can be categorized as either direct or indirect. Direct missions are executed by the U.S. SOF units themselves, normally unilaterally, and are designed to have a specified result within a well-defined period of time, usually of very short duration. Indirect missions are executed by working with other elements (usually foreign forces aligned with the U.S.) and tend to have longer time horizons.

Each of the various SOF elements focuses closely on some missions while maintaining the ability to perform all others. Specifically:

- **U.S. Army Special Forces**: Primarily indirect actions; habitually operate in small groups; can also perform direct missions.

- **SEALs**: Primarily direct actions; operate in small groups, near the water (but also operate on land and at sea as their name indicates); can also perform indirect training missions.

- **Rangers**: Primarily direct, large-scale operations; can perform smaller operations.

- **Marine Critical Skill Operators**: Primarily indirect; still maintain capability to perform direct missions.

- **Military Information Special Operations**: Indirect; can support direct actions of other units (either SOF or General Purpose).

- **Civil Affairs**: Indirect; can support direct actions of other units (either SOF or General Purpose).

- **Air Force Aviation Advisors**: Indirect.

- **Combat Controllers, Pararescue, Special Operations Weathermen**: Direct or indirect; can support any function as well as all missions.

There is, however, another way to encapsulate the approach to their missions that all SOF share. Referred to as “SOF Truths,” the following maxims apply across SOF and help to explain the mindset and ethos of special operators. They are a constant reminder to all members of SOF as to what comprises their professional foundation and what should inform decisions on the use of SOF.
• **SOF Truth #1: Humans are more important than hardware.** People—not equipment—make the critical difference in the success or failure of a mission. The right people, highly trained and working as a team, will accomplish the mission with the equipment available. On the other hand, the best equipment in the world cannot compensate for a lack of the right people.

• **SOF Truth #2: Quality is better than quantity.** A small number of people, carefully selected, well-trained, and well-led, is preferable to larger numbers of troops, some of whom may not be up to the task.

• **SOF Truth #3: Special Operations Forces cannot be mass produced.** It takes years to train operational units to the level of proficiency needed to accomplish difficult and specialized SOF missions. Intense training, both in SOF schools and in units, is required to integrate competent individuals into fully capable units. This process cannot be hastened without degrading ultimate capability.

• **SOF Truth #4: Competent Special Operations Forces cannot be created after emergencies occur.** Creation of competent, fully mission-capable units takes time. Employment of fully capable special operations capability on short notice requires highly trained and constantly available SOF units in peacetime.

• **SOF Truth #5: Most special operations require non-SOF assistance.** The operational effectiveness of deployed forces cannot be, and never has been, achieved without being enabled by all the joint service partners. The Air Force, Army, Marine and Navy engineers, technicians, intelligence analysts, and numerous other professions that contribute to SOF have substantially increased SOF capabilities and effectiveness throughout the world.

These are not mere slogans; they are the principles by which SOF view themselves, their missions, and their world. Taking a moment to digest these ideals is worth the time and will allow for a higher degree of understanding of the men and women who make up USSOCOM. These five truths offer key insights into America’s Special Forces, such as:

• SOF are precious assets that take time, effort, and investment to develop;

• They are not suitable for “big-scale” tasks;

• Suddenly deciding to “make more” of them is a foolish and irresponsible goal; and

• SOF recognize that they are a small part of America’s military strength, not a replacement for any other part of the military.

Policymakers who consider employing SOF operationally must understand these facts lest they gamble with one of America’s most precious assets.

**SOF Core Activities**

According to the Department of Defense, “USSOCOM organizes, trains, and equips SOF for special operations core activities ... and other such activities as may be specified by the President and/or SecDef. These core activities reflect the collective capabilities of all joint SOF rather than those of any one Service or unit.”

The activities enumerated by SOCOM are:

• **Direct Action (DA).** Short-duration strikes in hostile, denied, or diplomatically sensitive environments to seize, destroy, capture, exploit, recover, or damage designated targets.

• **Special Reconnaissance (SR).** Reconnaissance and surveillance normally conducted in a clandestine or covert manner to collect or verify information of strategic or operational significance, employing military capabilities not normally found in conventional forces.

• **Countering WMD Operations (CWMD).** Support provided to GCCs through technical expertise, matériel, and special teams to locate, tag, and track WMD and/or conduct DA to prevent use of WMD or to assist in its neutralization or recovery.

• **Counterterrorism (CT).** Actions taken under conditions not conducive to the use of conventional forces to neutralize terrorists and their networks in order to render them incapable of using unlawful violence.
SOF Core Activities

<table>
<thead>
<tr>
<th>WHAT</th>
<th>TYPE</th>
<th>WHO</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA</td>
<td>Direct</td>
<td>SF, Rangers, SEALs, CSOs</td>
<td>Raids, strikes, terminal guidance</td>
</tr>
<tr>
<td>SR</td>
<td>Direct</td>
<td>SF, Rangers, SEALs, CSOs</td>
<td>Long-range recon of strategic target</td>
</tr>
<tr>
<td>CWMD</td>
<td>Direct</td>
<td>SF, Rangers, SEALs, CSOs</td>
<td>Capturing a loose nuclear device</td>
</tr>
<tr>
<td>CT</td>
<td>Direct</td>
<td>JSOC, SF, SEALs</td>
<td>The raid to kill Osama bin Laden</td>
</tr>
<tr>
<td>UW</td>
<td>Indirect</td>
<td>SEALs, SF, CSOs, CA</td>
<td>Operations against the Taliban 2001</td>
</tr>
<tr>
<td>FID</td>
<td>Indirect</td>
<td>CSOs, SF, SEALs,</td>
<td>Training Iraqi and Afghan Armies</td>
</tr>
<tr>
<td>SFA</td>
<td>Indirect</td>
<td>SF, CSOs, SEALs, CA</td>
<td>Training Iraqi Military</td>
</tr>
<tr>
<td>HRR</td>
<td>Direct</td>
<td>SF, Rangers, SEALs, CSOs</td>
<td>Rescue of PFC Jessica Lynch</td>
</tr>
<tr>
<td>COIN</td>
<td>Indirect</td>
<td>All SOF</td>
<td>Operations in Iraq 2003–2011</td>
</tr>
<tr>
<td>FHA</td>
<td>Indirect</td>
<td>SF, MISO, CA, CSOs</td>
<td>Ebola mission to West Africa</td>
</tr>
<tr>
<td>MISO</td>
<td>Both</td>
<td>MISO, CA, SF, CSOs</td>
<td>Convincing insurgents to give up</td>
</tr>
<tr>
<td>CAO</td>
<td>Indirect</td>
<td>CA, SF, MISO, CSOs,</td>
<td>Helping local sheik to deliver food</td>
</tr>
</tbody>
</table>

- **Unconventional Warfare (UW).** Actions taken to enable an indigenous resistance movement to coerce, disrupt, or overthrow a government or occupying power.

- **Foreign Internal Defense (FID).** Activities that support a country’s internal defense program designed to protect against subversion, lawlessness, insurgency, terrorism, and other threats to the country’s internal security and stability.

- **Security Force Assistance (SFA).** Activities that contribute to a broad effort by the U.S. government to support the development of the capacity and capability of foreign security forces and their supporting institutions.

- **Hostage Rescue and Recovery (HRR).** Sensitive crisis response missions in response to terrorist threats and incidents where SOF support the rescue of hostages or the recapture of U.S. facilities, installations, and sensitive material overseas.

- **Counterinsurgency (COIN).** SOF support to a comprehensive civilian and military effort to contain and ultimately defeat an insurgency and address its root causes. SOF are particularly adept at using an indirect approach to positively influence segments of the indigenous population.

- **Foreign Humanitarian Assistance (FHA).** SOF support to a range of DOD humanitarian activities conducted outside the U.S. and its territories to relieve or reduce human suffering, disease, hunger, or privation. SOF can rapidly deploy with excellent long-range communications equipment, and they are able to operate in the austere and often chaotic environments typically associated with disaster-related HA efforts. Perhaps the most important capabilities found within SOF for FHA are their geographic orientation, cultural knowledge, language capabilities, and ability to work with multiethnic indigenous populations and international relief organizations to provide initial and ongoing assessments.

- **Military Information Support Operations (MISO).** MISO are planned to convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately the behavior of foreign governments, organizations, groups, and individuals in a manner favorable to the originator’s objectives.

- **Civil Affairs Operations (CAO).** CAO are actions that enhance the operational environment, identify and mitigate underlying causes of instability within civil society, or involve the application of functional specialty skills that are normally the responsibility of civil government.
The varying nature of these activities tends to differentiate between direct and indirect. Furthermore, certain SOF components are more prone to undertake some types of activities over others, although all SOF can be called upon to execute any of these activities if the situation demands. It should be noted that all of the direct missions and some of the indirect missions could and in all likelihood would require support from Army or Air Force aviation assets or NSW craft, as well as PJs, CCTs, and SO Weathermen.

As described, the responsibilities and capabilities of SOF are broad and comprehensive. They play many roles and perform them all with an extremely high level of proficiency. These missions can be simple and tactical, or they can be highly complex and have extremely critical strategic effects. One important thing to note is that SOF never think that they conduct Major Combat Operations alone. This is not humility; it is simple recognition that SOF have their limitations.

How SOF Enables Military Capabilities

SOF are not a panacea for all of this nation’s military challenges. However, when used correctly in conjunction with the rest of the American military in support of U.S. national security objectives, SOF can help to make a difference in achieving strategic objectives.

To illustrate this point, it is helpful to overlay SOF’s direct and indirect capabilities across the phases of a major military operation:

- **Phase 0:** Shape the situation in the target country (or theater).

- **Phase I:** Deter the adversary from taking any adverse actions.

- **Phase II:** Seize the initiative before the adversary can do so.

- **Phase III:** Dominate the enemy.

- **Phase IV:** Stabilize the situation.

- **Phase V:** Enable the friendly civil authorities.

Within each phase, SOF have a role to play that creates conditions for success and amplifies the effects of other elements of national power. For example:

- **Phase 0** (Shape)
  1. **Type of Action:** Indirect.

  2. **SOF Activities:** Information and intelligence gathering; building relationships; conducting training; on-the-ground familiarization; keeping the friendly elements functioning.

  3. **Example of Mission:** A rotating training mission conducted on a fairly continuous basis in Kuwait. A small SF training team would provide year-round instruction, tailoring their actions to the specific needs of the Kuwaitis. They also get to know all of the leaders of the units with whom they work.

- **Phase I** (Deter)
  1. **Type of Action:** Primarily indirect.

  2. **SOF Activities:** Advising local security forces; helping to eliminate threats to the friendly regime through more direct intelligence support.

  3. **Example of Mission:** The forces sent to Mali before the larger intervention by the French as they fought forces backed by al-Qaeda.

- **Phases II–IV** (Seize, Dominate, and Stabilize)
  1. **Type of Activity:** Direct and indirect.

  2. **SOF Activities:** Long-range reconnaissance; terminal guidance; deep precision strikes; advisory role with local military; advisory role with coalition partners; advisory role with local civil defense forces; CT hunting; raids; cutting supply lines.

  3. **Example of Mission:** In these active combat phases, SOF are often subordinated to conventional forces in the theater and attacks targets at their direction, providing special reconnaissance before conventional
attacks. These forces can also be sent after strategic targets such as the elimination or capture of high-value personnel. They can also provide liaison officers to help overcome allied communications difficulties or to aid in managing supporting assets such as close air support.

- **Phase V (Enable)**

  1. **Type of Activity:** Primarily indirect with some isolated direct activities.

  2. **SOF Activities:** Continue advisory role; continue gathering intel; bridge the time between the departure of U.S.–Coalition forces and the stepping-up of local capabilities; monitor final resolution of enemy forces or demobilization process.

  3. **Example of Mission:** In this phase, SOF can be the key to a smooth turnover of responsibility to the local authorities and departure of American GPF. This was done in Iraq in 2011 as SOF were the last units to leave—an effort to ensure that the Iraqis had the best possible chance of success when the Americans returned home.

- **Phase 0 (Shape)**

  1. **Type of Activity:** Indirect.

  2. **SOF Activities:** Return to information and intelligence gathering, the building of relationships and networks, training, on-the-ground familiarization, keeping the friendly elements functioning.

  3. **Example of Mission:** A small SF training team would provide year-round instruction, tailoring their actions to the specific needs of the Kuwaitis.

As described, SOF are involved across the spectrum of operations from peacetime to conflict to war and back again. The relationships and intelligence that these operators gain in the pre-conflict Phase 0 are critical in maintaining awareness and supporting stabilizing agents in areas of conflict or interest. If a scenario moves to Phase I, SOF members can act as an early deterrent force, sometimes with their own actions but more than likely by facilitating a local force’s ability to operate more effectively. During Phases II–IV, their direct activities will support conventional general-purpose forces operations, and their indirect ones can keep the host force (be it a resistance force or government forces) in the fight.

The indirect operations of SOF become even more evident in Phase V as U.S. forces try to set the conditions for the general-purpose forces to depart once local authorities no longer need assistance. From there, SOF can stay in smaller pre-conflict numbers to return to their indirect activities and shaping functions.

While SOF may be known publicly more for direct operations such as the bin Laden strike, the indirect shaping activities are arguably more important to long-term U.S. interests and can save a great many lives and assets. As noted, SOF provide strategic warning and, if necessary, prepare the environment for general-purpose forces. SOF enable hard power by providing conventional forces with a “warm start” and can provide options not otherwise possible. Finally, SOF amplify the effectiveness of hard power by doing things like in situ targeting, leveraging of infrastructure, and using their ability to exploit actions based on detailed local knowledge and relationships.

**SOF’s Abilities to Execute Missions Effectively**

On any given day, U.S. Special Operations Forces are operating in about 75 different countries, mostly in non-combat operations. Due to the nature of the many dispersed threats facing the U.S. today, SOF’s unique capabilities are also in higher demand than at any other point in their history.

Assessing the readiness of SOF involves six key questions:

1. Do SOF have the appropriate doctrine: Are the missions the right ones?

2. Does USSOCOM have the correct numbers of forces: Are they adequately sized?

3. Do SOF have the appropriate diversity of personnel: Is the force mix right?
4. Do SOF have the best equipment to do the job: Are the platforms and equipment what are really needed?

5. Are all forces appropriately trained and experienced: Do the personnel have the right skills, abilities, and experience?

6. Does USSOCOM have the correct authorities: Can SOF legally perform actions required of them?

**SOF Doctrine.** The SOF doctrine is comprehensive and appropriate. It provides for maximum coverage of the various tasks that SOF are called to execute. Units that can perform the Core SO Activities effectively within the Core SO Operations are provided the tools to complete their tasks.

In the early years of SOF, the doctrine was a mix of different approaches, standards, definitions, and perspectives. USSOCOM’s efforts to reconcile variations has provided a common direction, has established uniformity as and where necessary, and allows the commanders and planners to know what the troops theoretically are capable of doing while giving unit operators exactly the guidance they need to develop their training regimes. Additionally, the doctrine is tied to the wider Defense Department Joint Doctrine in a way that maximizes the ability to leverage SOF to enable the General Purpose Forces (GPF) and to achieve the best support from the GPF for SOF operations.

**Size of USSOCOM.** SOF has grown significantly since 9/11, but is that growth enough? To make such a determination, one needs to discuss the broader U.S. military reductions that are taking place. While reducing the number of conventional ground forces overall—and specifically in the Middle East—is current U.S. policy, such cuts do not make for sound defense policy and, in fact, harm the ability of SOF to do their job in two key ways:

- Since SOF depend so heavily on conventional forces for organic combat support and combat service support, the drawdown of Army and Marine Corps end strength “brings up concerns the services might be hard-pressed to establish and dedicate enabling units needed by USSOCOM while at the same time adequately supporting general purpose forces.”

- Because SOCOM draws its operators and support staff from the various services, a decrease in the size of the conventional force subsequently decreases the recruiting pool on which SOCOM relies for quality personnel.

With the coming drawdown in Army and Marine end strength but no apparent reduction in the requirements generated by U.S. global strategy, SOF will likely see an increase in operational tempo. The current force is about 67,000 personnel, a figure slated to increase to 70,000 over the next several years, of which around 12,000 can be deployed at any given time. However, the strict requirements for entry into the SOF and the emphasis on retaining a top-tier fighting force limit the growth rate for SOF expansion. The maximum growth rate per year without sacrificing quality is about a 3 percent to 5 percent increase in personnel.

Combined with the greater use of SOF, this low growth rate will put additional pressure on an already stretched force. As Mackenzie Eaglen, defense expert at the American Enterprise Institute, points out:

> While some in Congress have been concerned about the readiness of the U.S. military and troops on their fifth or sixth combat tour, many special forces operators have already served 10 or more overseas combat tours. That pace is unsustainable with even marginal growth of SOF.

One can conclude that despite the growth of SOF (both current and planned), they are probably only marginally at an appropriate size for the present and coming missions. This is a concern because the pressure on SOF to pick up a greater share of duties will be strong. The questions of force size and quality relative to operational demand must be monitored closely.

**SOF Diversity of Force Capabilities.** There must be sufficient redundancy to meet surge requirements and unforeseen challenges. Events in multiple parts of the world cannot necessarily be dealt with sequentially and often require simultaneous actions. No individual service component has enough forces to ensure that no gaps will ever develop, but as a whole, USSOCOM appears—at present—to have ample diversity to cover its global responsibilities.
The direct and indirect capabilities construct is a useful guide, as the various forces can move between the two methodologies with enough skill to address various challenges. For instance, SEALs are able to fight deep in mountainous terrain, Army Special Forces can execute SCUBA insertions from submarines, and Marine CSOs can train indigenous forces or perform a raid—all examples of this critically important redundancy. Army SOA can deliver SOF personnel from any service on a counterterrorist strike and then operate alongside Air Force CV-22 Ospreys to deliver supplies to a CA team in an urban area.

The bottom line is that the force mixture gives America a great deal of resilience. If troops are lost or needed elsewhere, USSOCOM has multiple options to replace them with forces from multiple sources. Such diversity of force capabilities is one of SOF’s greatest strengths.

SOF Equipment. The units in SOF are more about the people than gear, but operators need specialized tools to perform their specialized tasks; in fact, it is the effective pairing of highly developed skills and the right equipment that enables SOF to do what they do. For the most part, SOF have received the equipment they deem necessary. Their fixed-wing, rotary-wing, and tiltrotor aircraft are typically substantially upgraded versions of GPF models. Certain units in SOF have commercially available “add-ons” to weapons and communications gear, but for the most part, SOF carry many of the same items as their conventional counterparts. There is, however, a constant struggle to ensure that they continue to be properly equipped.

USSOCOM has its own acquisition authority (Major Force Program 11) that allows the command to buy items outside of the normal service channels’ acquisition processes. While the services are currently excellent at providing for the needs of their component units, if budget reduction trends continue, this support may become problematic, and MFP 11 can help SOF to sustain their ability to provide for their own specialized equipment needs. SOF are therefore adequate in this measurement.

SOF Training and Experience. SOF personnel are experienced and well-trained. The youngest personnel in SOF enter with extensive GPF experience, while the more mature members in some cases have been deployed in combat nearly constantly for more than a decade. It is possible that SOF are the most combat-experienced command in U.S. history.

Yet there is one area in which SOF, due to the high operational tempo in combat operations, lack experience: indirect actions. Army SF personnel in particular (but also some Navy SEALs and parts of AFSOF) have not undertaken indirect activities for years. This presents a potential training challenge for SOF, although a correction may already be underway. Former USSOCOM Commander Admiral William McRaven began working to shift the command from a nearly single-minded focus on counterterrorist, direct action operations back to the critical Phase 0 indirect activities that were not prioritized while the operators fought al-Qaeda in Iraq and Afghanistan (with the exception of some indirect training missions performed in both of those countries).

The current USSOCOM Commander, Army General Joseph L. Votel, appears ready to continue Admiral McRaven’s plans for a global SOF network that would connect America’s special operators with like-minded units from around the world both to improve and to leverage their capabilities. Such a network represents classic indirect operational focus; it is safe to assume that in short order, USSOCOM will make up for any training deficiency in its indirect skill set.

In the future, if USSOCOM has its training budget cut in a manner similar to what many GPF are facing, their ability to maintain their absolutely necessary high levels of readiness will be jeopardized. For now, however, this does not seem to be an immediate possibility. That said, any budget cuts must be monitored closely for the simple reason that SOF operators’ unparalleled effectiveness derives primarily from the fact that they shoot more, fly more, and conduct realistic exercises more than any other units in history. Lose that edge, and SOF will lose one of the important characteristics that make them so special.

SOF Authorities Under Which USSOCOM Operates. SOF have largely received the legal authority necessary for them to perform their missions. Under Admiral McRaven, USSOCOM was able to secure expanded authority for SOF operations within the GCC Theaters and receive a consensus approval from the senior military commanders and service chiefs to do so. Admiral McRaven also expanded the command’s presence in Washington and across the federal interagency system. USSOCOM now has the ability to synchronize SOF
operations around the world, and it does this without overstepping the authorities of the Geographic Combatant Commanders or U.S. ambassadors who represent the U.S. in their respective countries.\textsuperscript{43}

**Conclusion**

Given SOF’s relatively solid posture and future, as well as their ability to execute subtle yet critical indirect activities, they may be the most advantageous force choice for the difficult period America is entering. Between the lack of appetite in both American government and the public for large-scale force deployments, as well as the fiscal difficulties facing the GPFs, SOF will likely be required to assume increasing amounts of responsibility.

It is hoped that lawmakers will reverse the U.S. military’s decline. Until that time, however, policymakers might be tempted to consider SOF as an alternative way to boost military capacity in the immediate future. The indirect activities performed by USSOCOM will likely be called upon increasingly to provide for the protection of American interests or at least to mitigate the threats to those interests.

In that spirit, the following should be understood about Special Operations Forces:

- There are different types of SOF that have different purposes, values, and skills.

- The health and effectiveness of SOF are tightly linked to the professional health of the conventional forces. One cannot be substituted for the other.

- The nature of SOF and the missions they perform enables the U.S. to engage with the world in ways and to an extent not possible with conventional forces alone.

- Understanding how to use SOF properly preserves conventional force capabilities and capacities.

SOF can prepare areas where the U.S. anticipates that military operations might be necessary, is already conducting operations, or is trying to avoid becoming more involved in a given conflict or operation. Properly used, SOF can preclude problems altogether, reduce the size of conflicts if greater force is deemed necessary, amplify the effectiveness of conventional forces, establish relationships with indigenous forces of both state and non-state actors, provide precise targeting, and give high-resolution awareness that maximizes the likelihood of operational success. They can do all of this with a small footprint and while avoiding unintended or undesired damage.

SOF will be a key part of any bridge strategy as America manages a declining military structure in the midst of a growing threat environment. They can help to set the operating environment in the most advantageous manner possible. They are not, however, a replacement for conventional capabilities.

Indeed, there are numerous missions that SOF cannot perform: They cannot fight pitched battles with heavy forces; they cannot execute naval power projection; they cannot deploy strategic nuclear weapons. Furthermore, without an adequate recruitment base, SOF are hard to sustain, and without adequate conventional support, it becomes more difficult either to deploy SOF or to provide them with adequate support. When used correctly, however, SOF are extraordinarily valuable, even irreplaceable, in advancing U.S. security interests.

Such proficiency does come with a cost, as SOF are an expensive asset when compared “man to man” with conventional forces—and wasteful to taxpayers if they are misused. Policymakers must therefore strike an important balance: correctly deciding where, when, and for what purpose SOF should be deployed. There is simply no substitute for a strong and capable conventional ground force, but the same is true for SOF. Yet these units are not interchangeable, and it is unwise to place additional stress on SOF by expecting them to take on tasks for which they are not intended.
Endnotes:

1. Today’s austerity is in the form of the Budget Control Act of 2011 and subsequent “sequester” automatic cuts.


7. Ibid.


9. Ibid.


19. Ibid.


27. These activities and their summarized or restated descriptions are taken from ibid., pp. II-1 to II-18.


32. For a comprehensive overview of U.S. military capacity and capability across the services, see the “Capabilities” section of this report.


35. Ibid.


37. McRaven, posture statement before Senate Committee on Armed Services.


Conventional and special operations forces are the most obvious expressions of U.S. military strength. Whether well-understood or not, they are the most visible manifestations of U.S. defense capabilities—especially since the terrorist attacks of September 11, 2001. Less visible and certainly less understood, but equally as vital to any defense of America’s national interests, are three other capabilities: nuclear weapons, satellites, and cyber. Two of these capabilities—nuclear weapons and satellites—have been a part of defense calculations since the 1950s; cyber is a new domain that has emerged coincident with the evolution of the Internet and rapid development of computer-based information and communications technologies.

During the Cold War years, the U.S. made enormous investments to achieve and sustain a dominant position in nuclear and space affairs relative to the Soviet Union. Nuclear and space systems are seldom in the public eye these days but for different reasons.

Nuclear (then atomic) weapons made their appearance with the bombings of Hiroshima and Nagasaki that ended World War II and then became a central element of war planning during the 1950s and early 1960s. After taking a backseat to reporting on the conventional war in Vietnam, they surged back into prominence in the 1970s as tensions with the Soviet Union again became the dominant security issue.

Above-ground testing ended in 1963, and all other “yield producing” testing was halted in 1992, followed shortly by the U.S. decision to take its nuclear weapons off “ready alert” status as one of several measures implemented after the end of the Cold War. The “peace dividend” decade of the 1990s served to push nuclear matters even further off the public radar, with visibility (and even interest) clouded further by a decade of focus on counterinsurgency and counterterrorism operations.

Yet America’s strategic security guarantees—for itself and to key allies—rest on its nuclear triad of aircraft-delivered bombs and land-based and submarine-based missiles. Of concern, then, is the almost complete absence of an informed debate about the health of America’s nuclear enterprise.

Similarly, there is almost no public discussion about the health of the United States’ space-based capabilities and the extent to which America depends on them not only in military affairs, but also economically and in broader national security matters. The military and intelligence communities and some portions of the economic sector are very aware of the importance of space. There is little public awareness, however, of the constant effort needed to maintain and upgrade the space-based systems that enable communications both at home and abroad and allow for the safe movement of nearly all forms of transportation that depend on the positioning, navigation, and timing (PNT) signals broadcast by Global Positioning System (GPS) satellites.

As for cyber, the economic, banking, and financial services sectors are at least as aware as the military and intelligence communities of the importance of
this domain, within which information is continuously exchanged and through which attacks are constantly executed. Due to the sensitive nature of almost all factors bearing upon this topic, very little accurate information is available assessing the United States’ capabilities and status relative to competitors. Nevertheless, no discussion of America’s vital national interests and the relevant capabilities necessary to protect them would be complete without some understanding of this domain and the lengths to which the United States and others go in order to protect their interests.

Each of these areas is qualitatively and quantitatively different from the tools and environments normally associated with conventional “hard power.” Yet without them, the exercise of such power would be nearly impossible. In the sections that follow, we will examine each of these unique strategic capabilities and outline the challenges that America faces in guarding its interests in all three areas.

Nuclear Weapons

In the waning days of World War II, the U.S. developed the ability to harness atomic power for military purposes. The U.S. started its program out of a concern that Nazi Germany would develop such a mighty weapon first and, as a result, win the war. As things turned out, the combined conventional forces of the Allied Powers defeated Germany, and it was Japan that experienced the power of the atomic bomb.

On August 6, 1945, the U.S. dropped the “Little Boy” bomb on Hiroshima, Japan. Highly enriched uranium provided the fuel for this bomb. Little Boy had the destructive equivalent of about 12 to 14 kilotons (12,000 to 14,000 tons) of TNT. The destruction caused by the attack has been compared to the bombing of the German city of Dresden in February 1945. In the Dresden attack, as many as 3,300 tons of bombs were dropped on the city by almost 1,300 bombers.

The second atomic bomb—the plutonium-based “Fat Man”—was dropped on Nagasaki three days after Hiroshima. These explosions marked the end of one of the most destructive conflicts in the history of mankind.

Over the next 40 years, a small set of technologically advanced countries developed atomic/nuclear weapons, including the U.S., the Soviet Union, the United Kingdom (U.K.), France, China, and India. Beginning in 1945, the nuclear powers conducted thousands of nuclear weapons tests and yield-producing experiments of various weapon designs under a variety of conditions, with related advances in the ability to deliver nuclear weapons in different ways (missiles, bombers, strike aircraft, ships and submarines, and artillery) with increasing range and accuracy.

For many states, ballistic missiles remain the preferred means for delivering a nuclear weapon. This is because a ballistic missile attack maximizes the element of surprise for the attacker and the missiles can be deployed in a variety of survivable ways and are difficult to intercept. With intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs), it takes only half an hour to deliver a nuclear weapon from any launch location to a target anywhere in the world.

While experts usually distinguish between strategic nuclear weapons (heavy bombers, intercontinental-range ballistic missiles, strategic submarines) and tactical nuclear weapons (short-range and medium-range systems), it is important to keep in mind that any use of a nuclear weapon is strategic in its nature and consequences. Nuclear weapons are qualitatively and quantitatively different from conventional weapons.

Nuclear command and control is essential both to nuclear deterrence and to maintaining the credibility of the U.S. nuclear weapons arsenal. America must be absolutely sure that the U.S. will be able to communicate with its nuclear platforms and that the President will be able to launch U.S. nuclear-armed delivery systems should a need to do so ever arise. It is also one of the most classified elements of the program. U.S. nuclear command and control is redundant, reliable, secure, and capable even though the U.S. needs to continue to modernize the network as new electronic warfare capabilities emerge.

The decades before the end of the Cold War were marked by an intense competition between the U.S. and the Soviet Union that led to increases in their respective nuclear weapons arsenals by tens of thousands. This multi-decade competition also necessitated a new level of thinking about warfare, deterrence, operational employment concepts, wargaming, and analysis of effects.

Nuclear forces have been a vital component of U.S. force structure. They have been the bedrock of the United States’ posture for deterring strategic
attacks against the U.S. itself and its allies under the policy of extended deterrence and assurance. They have also been an essential component of U.S. policy for limiting the proliferation of nuclear weapons.

As former Heritage analyst Baker Spring points out, due to their enormous destructive power packed in a relatively small weapon, nuclear weapons are different from conventional weapons. Nuclear weapons can defeat conventional weapons because of the unique nature and magnitude of their effects: massive blast, direct radiation, fallout, and electromagnetic pulse. These qualitatively different effects of nuclear weapons compared to conventional weapons led policymakers to attempt to develop frameworks through which awesome atomic power would be restrained.

Initially, the U.S. explored options for disarmament and international control of nuclear technology. The most prominent proposal was the Baruch Plan, named after Bernard Baruch, U.S. representative to the United Nations Atomic Energy Commission, who presented a U.S. disarmament plan to the commission on June 14, 1946. The Baruch Plan proposed putting all atomic energy activities under the control of an International Atomic Development Authority. The plan would have required the renunciation of atomic bombs and would have established a system for punishing violators. It envisioned ending the manufacture of atomic bombs, disposing of existing bombs, and limiting possession of the technological knowledge needed to produce bombs to the authority. In other words, the U.S. attempted to eliminate the potential for atomic warfare immediately after its inception.

The Soviet Union, however, rejected the Baruch Plan. Consequently, with the start of the Cold War, the U.S. turned to exploring plans for using its nuclear forces to contain the military expansion of the Soviet Union. U.S. proposals for limiting nuclear arsenals—specifically, arms control and nonproliferation—were among the less ambitious diplomatic options compared to the Baruch Plan. In this context, two subsequent strategies emerged.

First, in the early 1960s, strategist Herman Kahn proposed that the U.S. should adopt a damage-limitation strategy to deter a possible Soviet attack on the United States and its allies. Kahn defined deterrence broadly to encompass both the goal of limiting the damage that would normally be inflicted by an attack that targeted one’s offensive forces—a counterforce approach—and the defensive measures necessary to achieve that goal, along with possession of one’s own offensive nuclear forces. “I agree with our current national policy that the primary objective of our military forces is to deter war,” Kahn said, summarizing his strategy. “However, I feel that there is a second but still very important objective: to protect life and property if a war breaks out.”

Second, at roughly the same time, economist and game theorist Thomas Schelling proposed that deterrence be defined much more narrowly. He argued that the goal of damage limitation and the accompanying protective measures were actually at odds with deterrence. While Kahn felt that strong defenses would cause an enemy not to attack, Schelling believed that an attacker would be deterred more effectively by fear that his own valued resources might be attacked. More specifically, Schelling argued that deterrence meant threatening to retaliate by targeting the attacker’s population centers:

Thus, schemes to avert surprise attack have as their most immediate objective the safety of weapons rather than the safety of people. Surprise-attack schemes, in contrast to other types of disarmament proposals, are based on deterrence as the fundamental protection against attack. They seek to perfect and to stabilize mutual deterrence—to enhance the integrity of particular weapon systems. And it is precisely the weapons most destructive of people that an anti-surprise-attack scheme seeks to preserve—the weapons whose mission is to punish rather than to fight, to hurt the enemy afterwards, not to disarm him beforehand. A weapon that can hurt only people, and cannot possibly damage the other side’s striking force, is profoundly defensive: it provides its possessor no incentive to strike first.

Schelling’s retaliation-based deterrence strategy, which the Administration of Lyndon B. Johnson fashioned into a policy of mutually assured destruction (MAD), eschewed defenses, downplayed counterforce capability, and relied instead on survivable offensive strategic nuclear forces to provide for U.S. security. In fact, Schelling’s strategy asserted that strategic defenses would be destabilizing by undermining the capacity of the retaliatory force, at least
in the context of the Soviet threat and its accompanying bipolar international political structure. It explicitly argued in favor of mutual vulnerability for the populations and industrial capacities of the U.S. and the Soviet Union so that each side would fear the loss of its people and economy and would thus be deterred from attacking the other.

During the remainder of the Cold War, debate between proponents of these two schools of thought continued. On balance, however, Schelling’s strategy of retaliation-based deterrence proved more popular during the Cold War and was a more powerful driver of the U.S. strategic force posture, although every subsequent Administration rejected the pure version of assured destruction.

Both Kahn’s damage-limitation strategy and Schelling’s retaliation-based deterrence strategy were designed to prevent nuclear war in the bipolar structure of the Cold War. Neither, however, was designed to meet the security needs of the U.S. and its allies in today’s multipolar world. And both Kahn’s and Schelling’s constructs assumed that the possessors of nuclear weapons would be states led by rational actors, an assumption whose merits are debated in today’s world. While Schelling’s strategy may have proved more popular during the Cold War, a variant of Kahn’s strategy is better suited to meeting U.S. and allied security needs in a multipolar world marked by the proliferation of nuclear weapons and delivery systems.

Implications of Limits on Nuclear Testing. Concerns about the environmental and potential public health consequences of nuclear weapons detonations also led to early efforts to limit and restrict nuclear weapons testing. For instance, the U.S. and the Soviet Union entered a moratorium on atmospheric nuclear weapons test explosions between 1958 and 1961.

Washington was surprised when it learned that during the moratorium, the Soviets were preparing to undertake the largest series of nuclear tests ever conducted; Moscow unilaterally resumed atmospheric tests in 1961. The U.S. was also surprised to learn how quickly competency can be lost; when the U.S. resumed its own testing, it found a significant decrease in its competency to test nuclear weapons.

Nuclear weapons testing is currently subject to four major international agreements: the 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space, and under Water (also known as the Limited Test Ban Treaty); the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (also known as the Outer Space Treaty), which prohibits nuclear weapons tests on the Moon and other celestial bodies; the 1974 Treaty on the Limitation of Underground Nuclear Weapon Tests (also known as the Threshold Test Ban Treaty), which bans nuclear weapons tests above 150 kilotons; and the 1976 Treaty Between the United States of America and the Union of Soviet Socialist Republics on Underground Nuclear Explosions for Peaceful Purposes.

In addition, there are other international agreements that indirectly affect states’ abilities to test nuclear weapons, such as agreements that established the treaties on nuclear-weapons-free zones. These agreements limit tests that would have a destructive impact on the environment.

It is important to understand that weapons in the current U.S. stockpile were designed and developed to meet stringent Department of Defense requirements during the Cold War. The current stockpile is thus based on technology from the 1970s. During the Cold War, key requirements addressed nuclear safety; operational reliability; yield; conservative use of nuclear materials (i.e., using no more material than is absolutely necessary); and operational simplicity. They were driven primarily by the demands of Cold War deterrence based on the policy of mutually assured destruction, with the Soviet Union as the prime adversary.

During the Cold War, the United States replaced or modernized its weapons every 10–15 years, vastly increasing their capabilities over time. Testing was considered essential throughout the entire operational cycle of a nuclear weapon. However, this testing did not focus on building databases or tools that would make it possible to ensure the reliability of weapons if testing ever ceased, because the technical feasibility of this approach was rejected. Thus, the often cited argument that the United States has enough data to continue to confirm the reliability of its stockpile is open to question since both the data and the tools used to collect them are Cold War vintage and were never meant to be used in the absence of new data.

The military requirements of the 1970s also affected how the United States designed its delivery systems: bombers and, in particular, inter-
continental-range ballistic missiles and submarine-launched ballistic missiles. Missiles have to withstand extreme temperatures and stresses during acceleration and re-entry to deliver the warhead to its intended target. Each type of warhead has to be carefully integrated with its delivery vehicle to ensure that the system as a whole will perform exactly as intended.

Given that America is preparing to recapitalize its delivery platforms, such exacting technical specifications could pose a challenge for U.S. engineers. These platforms will have to be made to “fit” the existing warheads, which means that their designs and parameters will have to be more conservative and perhaps different from missions for which the U.S. would design its warheads if it could start over.

The United States today has the oldest nuclear weapons arsenal it has ever had. The average age of U.S. nuclear warheads is approaching 27 years, which is well beyond their originally intended operational life. Since 1992, the nation has been under a self-imposed moratorium on “yield-producing” experiments and has been relying on the Stockpile Stewardship Program (SSP) that, while it does include a suite of experiments, does not include explosive testing or the maintenance of existing warheads. At the heart of the SSP are supercomputers and computer codes based on data from previous nuclear tests and yield-producing experiments that were conducted between the late 1950s and 1992.

As nuclear weapons age, they depart from their tested envelopes, which, as noted, were developed decades ago. As a result, there is inherent risk in not performing explosive tests to confirm safety and reliability. This raises a question about whether the computer codes that American scientists and engineers use to predict and certify nuclear performance are correct. As David Sharp, chief scientist at the Los Alamos National Laboratory, points out:

The only unequivocal way to demonstrate that predictions made with simulation codes meet expected standards of confidence is by establishing a track record of correct and reliable predictions that have been made using that code. For nuclear weapons this means successful prediction of nuclear performance. A track record of predictive capabilities; it is the indispensable source of confidence that is needed if codes are ever to replace nuclear tests. However, the ability to make correct, reliable predictions of nuclear performance using codes has not been demonstrated and cannot be demonstrated without a nuclear test program.15

The documentation from past explosive tests is not as complete as it might have been had the U.S. anticipated that a future test moratorium was possible. As a result, there are concerns about whether the computer codes that scientists and engineers use today based on previous test data are fully valid.

Dr. Kathleen Bailey, a senior fellow at the National Institute for Public Policy, argues that “Data from past nuclear testing is, in general, too coarse to test the validity of the high resolution, complex models that the SSP [Stockpile Stewardship Program] seeks to develop.”16 In addition, according to David Sharp, “the right answer could be obtained as a result of compensating errors, a circumstance in which two or more errors balance each other so they have no net effect.”17 This means that the final calculation might result as expected but that real errors and their potential risks are hidden.

At the time of the Comprehensive Test Ban Treaty in the 1990s, the directors of the U.S. National Nuclear Laboratories requested that the U.S. be allowed to conduct lower than one-kiloton experiments “to determine whether the first stage of multiple stage devices was indeed operating successfully.”18 The Clinton Administration, however, interpreted the treaty as banning all nuclear yield-producing experiments.19

Such errors could adversely affect judgments about the condition of the stockpile.20 They are also problematic because other nations have taken a different approach and are testing nuclear weapons. Consequently, these countries are developing a body of data based on modern, real-world testing, potentially developing and trying new weapons designs.

While this proliferation of capabilities, generation of new knowledge, and emergence of new programs has been occurring, the U.S. has remained committed to its policy of banning all yield-producing experiments and refusing to allow nuclear weapons innovation in its National Nuclear Laboratories. It is also worth mentioning that Russia and China are developing new weapons as well as sustaining old ones. This means that their weapons complex is geared toward solving different problems than that
of the U.S. Both Russia and China could potentially develop new and better capabilities.

**The Nuclear Threat.** Nuclear weapons possess awesome power and have a unique ability to harm U.S. vital interests, especially when coupled with ballistic missiles, which remain the weapon of choice for America’s adversaries.

- Ballistic missiles enable an adversary to deliver an attack within minutes (about a half-hour, or less depending on launch and target location, in the case of intercontinental-range ballistic missiles).

- The U.S. and its allies still lack a comprehensive layered ballistic missile defense system that would protect America from missile attack and devalue ballistic missiles as weapons for potential adversaries.

- The knowledge about mechanics of nuclear weapons and the physics behind them is becoming more easily accessible. For example, rudimentary nuclear weapon designs are available on the Internet. The covert network run by Pakistani scientist A.Q. Khan demonstrated that it is possible to buy advanced nuclear technologies—and perhaps material—on the black market, and North Korea has provided covert nuclear weapons assistance to Iran.

- Finally, ballistic missiles provide a more assured means of getting a weapon to its intended target than delivery by aircraft or other means.

Nuclear weapons come in various yields and design types. The weapon’s configuration will determine its effects, which can generally be summarized in six categories: blast, direct nuclear radiation, thermal radiation, fires, electromagnetic pulse, and fallout. Depending on the yield and design type, the weapon’s effects could dramatically affect the way the U.S. and its allies operate their forces. It is also worth noting that research and technology have progressed significantly since the U.S. stopped its yield-producing experiments.

New materials and technologies might perform in unexpected ways in a nuclear environment, as opposed to highly controlled testing and experimentation environments, thus introducing an additional layer of uncertainty when thinking through operational plans and contingencies under which an enemy might use a nuclear weapon or how the U.S. would operate its forces in a post-nuclear weapon attack environment. Extreme conditions and America’s limited understanding of the physical processes going on during a nuclear weapons detonation and the consequences of such a detonation make it very difficult and costly to model the effects of nuclear weapons on the different materials that are now used to make them. Even then, assumptions built into nuclear effects modeling may result in misleading understanding and flawed estimates of what the real effects of the use of a nuclear weapon would be.

**Current Nuclear Use.** Although it may come as a surprise to some, the U.S. “uses” its nuclear weapons every day. As pointed out by General Larry Welch, former Commander of the U.S. Strategic Air Command and former Chief of Staff of the Air Force:

> The primary role of U.S. nuclear weapons for well over half a century has been to prevent their use. To that end, we have used them every second of every day since the first deterrent systems were deployed. They have worked perfectly. The nuclear deterrent is the only weapons system I know of that has worked perfectly without fail, exactly as intended, for their entire life span.

U.S. nuclear weapons have played a key role in protecting all three vital U.S. interests discussed in the Introduction to this Index:

- Safeguarding the homeland from external attack; protecting Americans against threats to their lives and well-being; protecting America’s territory, borders, and airspace.

- Preventing a major power threat to Europe, East Asia, or the Persian Gulf, where a regional war would be devastating to U.S. interests and could spin out of control into a global conflict.

- Maintaining the freedom of the commons; free and safe transit of sea-lanes and space upholding the principle of freedom of the seas and space to promote and protect commerce among nations.

Other nations rely on their nuclear weapons capabilities for geopolitical maneuvering as well. For example, North Korea “uses” its nuclear weap-
ons to coerce South Korea and limit South Korea’s response to North Korea’s aggressive behavior. Russian nuclear weapons are the only reason why other nations think about Russia—a corrupt kleptocracy with enormous economic, demographic, ecological, and public health problems—as a superpower.

Where appropriate, this analysis will focus on states that possess nuclear weapons capabilities and have indicated an intent to attack one or more U.S. vital interests or that the U.S. government views as potential adversaries: e.g., Russia, China, and North Korea. France, the U.K., India, and Pakistan will not be considered threats to the homeland in this analysis because they have not communicated any intent to attack the U.S. (With respect to India and Pakistan, there exists the real possibility that these two nations could start a nuclear war with each other, and the effects of such a war would negatively affect the interests of the U.S. and its allies in the region.)

In addition, many experts believe that Israel possesses a nuclear weapons capability (Israel is not a party to the Non-Proliferation Treaty), although Israel has never publicly acknowledged the existence of its nuclear weapons arsenal. Israel does not have the intent to attack the U.S., so it will not be considered a threat for the purposes of this analysis.

It is also necessary to mention that nuclear weapons, if used, would probably not operate in a conventional conflict vacuum. A nuclear weapons attack would likely be accompanied by conventional operations aimed at achieving the military and political objectives of whichever nation decided to use nuclear weapons. A nuclear weapon could also be used during a conventional conflict as a next step on an escalatory ladder and to signal resolve. A nuclear weapon could also be used as a final resort when the leadership of a warring nation had nothing left to lose. Few countries, however, possess the capability to attack and threaten the U.S. homeland with nuclear weapons, and even fewer have the intent to do so.

The Nuclear Operating Environment. Since the end of the Cold War, the world in which U.S. nuclear forces operate has changed significantly. While the main focus of deterrence, the Soviet Union, receded in importance, the U.S. has had to adjust its posture to be able to deter new actors armed with nuclear weapons as well as emerging nuclear weapons states. India conducted five nuclear explosion tests in May 1998; Pakistan followed suit later that month with six nuclear tests of its own. North Korea conducted three nuclear device tests, in 2006, 2009, and 2013. Iran does not have a nuclear weapon yet, but the International Atomic Energy Agency has found evidence of weaponization activities, uranium enrichment activities, and even uranium diversion. Iran has not been able to explain these activities in a manner that would allay the agency’s suspicion.

Successive Nuclear Posture Reviews (in 1994, 2001/2002, and 2010) have struggled to address these challenges and adjust U.S. strategic posture to the post–Cold War world. With the end of the Cold War, the U.S. nuclear arsenal was dramatically downsized from over 30,000 warheads (its peak in 1967) to its current inventory of less than 5,000 warheads consisting of about 500 tactical nuclear weapons (TNWs); about 1,585 deployed warheads, according to data from the latest New Strategic Arms Reduction Treaty (New START) data exchange; and the remainder in reserve.23 Since the end of the Cold War, the U.S. has made substantial adjustments in its nuclear posture, while working to preserve deterrence of attack. During the Cold War and Moscow’s rapid disintegration, the U.S. focused primarily on the Soviet Union. One of the significant consequences of the dissolution of the Soviet Union was that the nuclear target set got smaller, which allowed for unprecedented reductions in U.S. strategic weapons and U.S. forward-deployed nuclear weapons. Many argued that with the Soviet threat receding, the nation lacked justification for maintaining not only a varied inventory, but also the infrastructure needed to design, develop, test, and maintain nuclear weapons. The U.S. conducted its last nuclear weapons test in 1992.

In the post–Cold War years, working in conjunction with the Soviet Union/Russian Federation, the U.S. has participated in four major programs designed to alter the size and composition of both nations’ nuclear weapons arsenals. Counting rules under each of the treaties are different, so the real number of warheads and systems reduced will also be different for each of the treaties.

- On July 31, 1991, the United States and the USSR agreed to the Strategic Arms Reduction Treaty I (START).24 The agreement entered into force in 1994. The accord dictated that each state reduce and limit its strategic armaments to no more than 6,000 “accountable” warheads and 1,600 delivery vehicles. START I relied on extensive verification...
measures that included data exchanges and on-site inspections that were either prearranged or conducted on short-notice.25

- The Strategic Offensive Reductions Treaty (Moscow Treaty, or SORT) entered into force in 2003. Rather than attaching warhead quantities strictly to delivery vehicles, SORT concentrated not on “accountable” warheads, but on actual operationally deployed warheads. Each state was allowed a range of 1,700 to 2,200 deployed warheads and the ability to determine the structure of its offensive strategic arms.26 SORT relied on START I verification measures, which expired in 2009. By 2009, the United States had fulfilled its treaty obligations by lowering the number of deployed warheads to below the maximum allowed under SORT.27

- The New Strategic Arms Reduction Treaty (New START) agreement entered into force in 2011. New START limits deployed warheads to 1,550 for each party and the number of deployed strategic nuclear delivery vehicles to 700 for each party.28 Under New START, each bomber counts as only one deployed warhead out of the 1,550 despite the fact that many bombers can carry many more than one warhead (up to 16 for the B-2 and up to 20 for the B-52).29 New START’s verification regime is not as stringent as that defined by START I.30 This change is due in part to the dramatic decrease of inspections allowed to each nation.31 After the treaty is implemented, nuclear forces levels established in New START will be 74 percent lower than the limit of the START I Treaty and 10 percent–30 percent lower than the deployed strategic warhead limit under SORT.32

In addition to these treaties, in 1991, President George H.W. Bush and eventual Soviet President Mikhail Gorbachev (and subsequently Russian President Boris Yeltsin) declared that both countries would reduce their arsenals of tactical nuclear weapons and delivery vehicles reciprocally and unilaterally. These statements are known collectively as the Presidential Nuclear Initiatives (PNIs).33 Unlike arms control treaties, the PNIs are politically but not legally binding.

As a result, the U.S eliminated all of its ground-launched short-range theater nuclear weapons, reduced its nuclear artillery shells and short-range ballistic missile warheads, and withdrew all TNWs from surface ships and attack submarines, as well as TNWs associated with U.S. land-based naval aircraft.34 President Bush’s initiatives led to an 85 percent reduction in U.S. operationally deployed TNWs between 1991 and 1993.35 Russia, however, is said to be in violation of its political commitments under the PNIs.36

President Barack Obama’s 2010 Nuclear Posture Review (NPR), the first U.S. NPR made available to the public, set five objectives of U.S. nuclear weapons policy and posture:

1. Preventing nuclear proliferation and nuclear terrorism;
2. Reducing the role of U.S. nuclear weapons in U.S. national security strategy;
3. Maintaining strategic deterrence and stability at reduced nuclear force levels;
4. Strengthening regional deterrence and reassuring U.S. allies and partners; and
5. Sustaining a safe, secure, and effective nuclear arsenal.37

The underlying goal of the President’s current nuclear weapons policy is to achieve “the peace and security of a world without nuclear weapons.”38 The President operates under the assumption that if the U.S. and Russia reduce their respective nuclear weapons arsenals bilaterally, this will put pressure on others to follow suit and reduce and/or dismantle their own nuclear weapons capabilities.

This assumption seems to go against the historical evidence. The U.S. has reduced its nuclear arsenal dramatically since the end of the Cold War. Washington maintains less than 5,000 nuclear warheads today, down from a peak of about 31,000 in 1967.39 Yet North Korea, Pakistan, and India emerged as nuclear weapons players at the time of massive reductions in the U.S. nuclear arsenal (and also while the U.S. stopped yield-producing experiments on its nuclear arsenal).

Iran seems to be conducting activities that are consistent with the intent to weaponize its nuclear program, although it does not have a nuclear weapon yet.40 The massive resources and manpower that
Iran spends on developing ballistic missiles that can reach U.S. allies and could reach the U.S. in the next few years also point to its intent to develop a payload that would be potent enough to coerce the U.S. and other regional powers and alter their calculus regarding possibly taking action against the interests of Tehran.

With the emergence of these new nuclear weapons actors after the end of the Cold War, the U.S. had to reexamine its Cold War notion of deterrence, which was based on the policy of mutually assured destruction. While U.S. policymakers were willing to accept mutual vulnerability in the deterrence equation vis-à-vis the Soviet Union and later Russia, they were not willing to accept retaliation-based deterrence vis-à-vis newly nuclear-armed nations. U.S. decision-makers recognized their limited insight into how the newly nuclear armed nations would operate their nuclear forces; how their command and control structures would operate; under what conditions their leaders would consider actually using a nuclear weapon, and what the U.S. might need to credibly deter these new actors.

The U.S. operates in an asymmetrical deterrent environment because it values its population centers and economy, which are far easier to destroy than the hardened leadership bunkers, tools of internal oppression and external attack, and military infrastructure that some of its potential adversaries value. With the Soviet Union, the U.S. also developed a common understanding of nuclear weapons terminology and concepts through an elaborate arms control process and decades of verification experience, something that is absent from the relationship with the new nuclear powers.

Interactions between the U.S. and these powers on nuclear issues have been limited to trying to convince these actors to give up their weapons and the technologies that pose a proliferation risk. It is not at all clear that these nations have a good understanding of U.S. nuclear weapons policy and potential “red lines.” In the case of North Korea, for example, the U.S. has very limited insight into the inner workings of the hermit kingdom and even less information regarding North Korea’s decision calculus on the use of nuclear weapons. The U.S. will have to understand these new nuclear-armed states and think about how to apply its military capabilities to threaten what they value if the U.S. is to deter them from attacking U.S. interests.

**U.S. Nuclear Weapons Outside U.S. Territory.** Understanding the perspectives of newly armed nuclear weapons states takes on additional importance because the U.S. has extended nuclear deterrence commitments to over 30 nations around the world with whom the U.S. has alliance commitments.

To that end, the U.S. maintains about 200 B61 gravity bombs in Europe. Deployed to Belgium, Germany, Italy, the Netherlands, and Turkey, these bombs can be employed by U.S. or NATO nuclear-certified aircraft (U.S. F-16 and F-15E aircraft and various European dual-capable aircraft such as the German Tornado). The B61 is the only remaining operationally deployed tactical nuclear weapon in the U.S. arsenal.

Over the course of decades, the U.S. developed elaborate command and control arrangements through NATO. NATO’s senior body on nuclear matters is the Nuclear Planning Group, where all NATO members (with the exception of France) participate in discussing various policy issues related to nuclear weapons.

NATO’s 2010 Strategic Concept, a document outlining the purpose and nature of NATO’s security tasks, states that:

Deterrence, based on an appropriate mix of nuclear and conventional capabilities, remains a core element of our overall strategy. The circumstances in which any use of nuclear weapons might have to be contemplated are extremely remote. As long as nuclear weapons exist, NATO will remain a nuclear alliance.

The Strategic Concept also explains the relationship between U.S. strategic nuclear forces and the nuclear weapons arsenals of France and the United Kingdom:

The supreme guarantee of the security of the Allies is provided by the strategic nuclear forces of the Alliance, particularly those of the United States; the independent strategic nuclear forces of the United Kingdom and France, which have a deterrent role of their own, contribute to the overall deterrence and security of the Allies.

In 2012, the alliance conducted a comprehensive Deterrence and Defense Posture Review (DDPR), which reaffirmed that “Nuclear weapons are a core component of NATO’s overall capabilities for deter-
rence and defence alongside conventional and missile defence forces.” The DDPR also recognized the contribution of missile defense to NATO’s security and reaffirmed the importance that the alliance assigns to the U.S. nuclear presence in Europe. With regard to missile defense, the U.S. is pursuing a “phased adaptive approach.” This plan for the protection of the European allies is based on an assessment of the threat from Iran’s short-range and medium-range ballistic missiles. The plan was announced in 2010 and was characterized by the White House Press Office as follows:

- Phase One (in the 2011 timeframe)—Deploy current and proven missile defense systems available in the next two years, including the sea-based Aegis Weapon System, the SM-3 interceptor (Block IA), and sensors such as the forward-based Army Navy/Transportable Radar Surveillance system (AN/TPY-2), to address regional ballistic missile threats to Europe and our deployed personnel and their families;

- Phase Two (in the 2015 timeframe)—After appropriate testing, deploy a more capable version of the SM-3 interceptor (Block IB) in both sea- and land-based configurations, and more advanced sensors, to expand the defended area against short- and medium-range missile threats;

- Phase Three (in the 2018 timeframe)—After development and testing are complete, deploy the more advanced SM-3 Block IIA variant currently under development, to counter short-, medium-, and intermediate-range missile threats; and

- Phase Four (in the 2020 timeframe)—After development and testing are complete, deploy the SM-3 Block IIB to help better cope with medium- and intermediate-range missiles and the potential future ICBM threat to the United States.

The U.S. cancelled Phase Four in 2013 and decided to deploy 14 additional Ground-Based Midcourse Defense Interceptors to address the North Korean and Iranian long-range ballistic missile threat to the U.S. homeland. Construction of the missile defense sites in Romania is proceeding on schedule.

The deep level of cooperation and integration that exists between the U.S. and European allied forces on nuclear weapons does not exist in Asia. Japan and South Korea have never been integrated into nuclear planning and operations for cooperative defense in the same way that European NATO allies have been. Some of these countries hosted U.S. nuclear weapons or supported U.S. nuclear weapons deployments in their regions in the past—Japan, for example, supported deployment of the Tomahawk Land Attack Missile/Nuclear (TLAM/N) systems—but the U.S. retired all of its TLAM/N systems in 2013 and currently does not deploy nuclear weapons outside of NATO and the U.S. territories. The potential to forward-deploy dual-capable aircraft with the B61 TNW remains a key option for reassuring Asian allies of America’s commitment to their defense.

**U.S. Nuclear Forces and Infrastructure.** Following release of the 2010 Nuclear Posture Review, President Obama directed that the U.S. employment strategy guiding U.S. nuclear weapons policy be revised. The Nuclear Posture Review Implementation Study (NPRIS), announced in June 2013, called for additional nuclear weapons reductions. The Administration concluded that “we can ensure the security of the United States and our allies and partners and maintain a strong and credible strategic deterrent while safely pursuing up to a one-third reduction in deployed strategic nuclear weapons from the level established in the New START.”

Recently, consensus within Congress regarding funding for National Nuclear Security Administration (NNSA) weapons activities has begun to unravel. The Administration achieved consensus before Senate approval of New START, pledging to invest over $85 billion between fiscal year 2011 and FY 2020. This funding was intended to support costs for maintenance of the nuclear weapons stockpile and associated infrastructure, including the Chemistry and Metallurgy Research Replacement (CMRR) plutonium facility and the Uranium Processing Facility. The NNSA, a semi-autonomous agency within the U.S. Department of Energy, is responsible for nuclear weapons infrastructure recapitalization and nuclear weapons sustainment, and the military services exercise responsibility for the delivery systems.

Due in part to the Budget Control Act (BCA) and the resulting budget sequester, and in part to serious cost escalation in Life Extension Programs and infrastructure recapitalization programs, the Administration’s budget requests since 2010 have not reflected the commitment to fully fund key nuclear programs.
on the schedule that it specified to the Senate in November 2010. Congress has decided to support the Administration’s request to defer certain programs and slip the schedule for others. The Administration effectively cancelled the CMRR facility in its FY 2013 budget request. Impacts of the BCA and the cost escalation of critical programs will continue to delay and complicate nuclear weapons infrastructure modernization and stockpile sustainment activities.

The U.S. currently operates under a policy constraint that does not allow the National Nuclear Laboratories to develop new nuclear warheads or conduct yield-producing experiments on the current inventory of nuclear warheads. This policy also prohibits supporting development of new military missions for nuclear warheads or providing for new military capabilities. Rose Gottemoeller, the State Department’s Acting Under Secretary for Arms Control and International Security, summarized this policy as follows: “We’re not modernizing. We’re not modernizing. That is one of the basic, basic, I would say, principles and rules that have really been part of our nuclear posture view and part of the policy.”

These policies constrain U.S. activities that could lead to the development of new, safer warheads, because new safety features would require yield-producing experiments to make sure that the new designs perform as expected. These policies will also make it more difficult to preserve the agility within the United States’ knowledge and technology base that is necessary to adjust rapidly to surprise developments in other nations’ nuclear weapons programs.

**The Ongoing Challenge.** The U.S. currently deploys nuclear weapons to Europe and is the only nuclear weapons state that deploys nuclear forces outside of its own territory. It is important that the U.S. be able uphold the principle of deploying weapons outside of its territory, because a deployment of nuclear weapons on allied territory is both an important contributor to assuring allies and clearly preferable to having allies develop their own nuclear weapons capabilities.

At the same time, the U.S. will continue to face challenges presented by its aging stockpile, a lack of funding for nuclear weapons modernization and infrastructure recapitalization, and policy constraints on yield-producing experiments. Complex and interdependent missile defense programs are likely to face their own developmental challenges.

### National Security Space Systems and Satellites

The ability of the U.S. military to project combat power against an enemy force anywhere in the world depends on an array of command and control, logistics, and other support systems that are made possible by the country’s national security space systems and other satellites. In fact, many critical functions can be performed (or performed acceptably) only by satellites, just one example being the American-produced and American-maintained Global Positioning System (GPS) upon which the world’s interconnected transportation system relies.

The GPS constellation provides unmatched positioning, navigation, and timing (PNT) capabilities that are used not only by civil aviation, commercial shipping, and directionally challenged drivers everywhere, but also by the military for which it was originally designed. Satellites also enable global communications, which allows for effective command and control of conventional and strategic forces, and play an important role in intelligence gathering: the information on which U.S. forces rely to formulate plans and execute the best battlefield decisions.

Knowing the status of these systems is important if one is to understand the extent to which they are able to contribute to the viability of U.S. military power. These systems can be assessed across three important characteristics:

- The lifespan of these systems, which is a measure of their health and readiness;
- The number of satellites in orbit, which is a measure of satellite coverage and resiliency; and
- Their ability to provide support-on-demand, which is usually measured in available bandwidth capacity.

These characteristics are interconnected, but the specific purpose for which satellites are deployed determines their numbers, capabilities, and system configuration. For example, fewer highly capable satellites might be better for certain tasks than greater numbers of less capable systems, as is the case with very high orbit or geostationary systems;
in other cases, the number of satellites in orbit might be more important than the number of more capable or longer-lived ones.

**Lifespan.** The lifespan of satellites is determined largely by the amount of fuel onboard the satellite. In decades past, battery function and component survival against space radiation were key lifespan factors. Satellite technology has now advanced to make these problems less critical than the amount of thruster fuel maintained aboard the satellite.  

The gravitational pull of the Earth, Moon, and Sun, together with solar wind and other features of space, can affect a satellite’s speed and position, thus changing its position over time. As a result, satellites must make small adjustments with thrusters to stay in their assigned orbit, a process called “station keeping.”

Currently, most GPS satellites orbiting the Earth have a designed lifespan of 7.5 years, though they have often surpassed that figure, and advances in satellite materials are increasing platform life. The newest GPS model in operation was designed with a 12-year lifespan, and the next generation of satellites is supposed to remain in orbit for 15 years. The early warning and missile defense satellite known as SBIRS GEO (Space-Based Infrared System–Geosynchronous orbit) has a lifespan of 12 years, and both of the U.S.’s new communications satellite systems (WGS and AEHF) have a designed lifespan of 14 years.

The older Milstar communication satellites that provide secure communications were designed for 10 years of service, a target exceeded by the first two systems, which approached or reached 20 years of service. Similarly, the legacy DSCS III communication satellites have surpassed their 10-year service lives, with the satellites functioning on average at least 50 percent longer than their designed life. The Defense Support Program (DSP) satellites being replaced by SBIRS also have had significantly more longevity than planned, with lifespans exceeding design by as much as 250 percent.

Satellite lifespan most closely equates to the readiness of a warship or an aircraft. As the average amount of time remaining on U.S. satellites decreases, the U.S. either has to spend the money necessary to replace these satellites or lose the critical support functions they provide. As noted, the actual lifespan of satellites is often more than expected, but this does not guarantee that all satellites will see extended use, and the U.S. should not expect to rely on satellites well beyond their intended service lives.

**Number of Satellites.** GPS satellites are so important that the U.S. maintains excess capacity in the GPS constellation to ensure redundancy, thus reducing risk should any node fail. The constellation requires 24 satellites, but the U.S. routinely operates 27 and maintains four backup satellites flying as well.

The SBIRS satellite system, though significantly behind schedule, currently operates two GEO satellites, with two more nearing completion and two more to be produced. Additionally, two HEO (highly elliptical orbit) systems are in orbit, with a third delivered in mid-2013 but not yet launched and a fourth in production. While the U.S. waits for the full constellation of SBIRS satellites, no more than five legacy DSP satellites continue to supplement SBIRS satellites in supplying early warning of ballistic missiles.

The WGS satellite constellation of six satellites is working and is supplemented by several of the eight remaining legacy DSCS III satellites, which have exceeded their designed lifespan. Additionally, it is expected that three extra satellites will be added to the constellation by FY 2018. The AEHF constellation is currently composed of three satellites, with a fourth in production and two more under contract. AEHF also uses the five Milstar satellites that were in operation as of February 2014.

There is also a variety of other satellite systems, including various high-end reconnaissance satellites and the Mobile User Objective System that, with two of a planned five satellites deployed, provides better connectivity to warfighters in the field and on the move.

**Bandwidth and Processing Capacity.** The strength of U.S. satellite constellations is further evidenced by the capacity of satellites to transmit data, as well as by their unique design capability, which allows them to carry out a variety of important tasks. GPS satellites have been updated consistently, adding additional and more powerful signals, anti-jamming capabilities, and accuracy. Similarly advances beyond DSP capabilities by providing more reliable, detailed, and timely information to military forces.

The WGS provides a dramatic increase in capability over the DSCS system, with one WGS satellite providing greater communications capacity than
the entire DSCS III constellation or more than 10 times the capacity of one DSCS III satellite.\textsuperscript{75} Similarly, the AEHF can handle 10 times more data than Milstar and provides each user with more than five times the bandwidth.\textsuperscript{76} AEHF is better able to communicate with other satellites to speed the flow of information and has more antennas able to support specific operations.

Providing direct satellite communications support to battlefield users, however, remains difficult, especially with regard to mobile frontline forces. In 2010, before the launch of two MUOS satellites, Rebecca Cowen-Hirsch, then president of Inmarsat Government Services, Inc., stated that “[T]actical communications in narrowband is one of the areas that is so significantly broken right now…. [F]or every one request for UHF [Ultra-high frequency] capacity [that’s accepted], five are denied.”\textsuperscript{77} With MUOS satellites providing “a 16-fold increase in transmission throughput over the current UAF satellite system,” this support gap is being addressed.\textsuperscript{78}

**Threat to Lifespan, Number, and Capability.** U.S. capabilities in space are unmatched, but with competitors improving their satellite and anti-satellite technologies, continued U.S. dominance is by no means guaranteed. For example, the Chinese Beidou-2 global navigation system of satellites is operating in East Asia with at least 14 operational satellites in orbit, and Beijing plans to expand this constellation to as many as 35 by 2020.\textsuperscript{79} Additionally, China has at least two communication satellite constellations, a weather satellite constellation, and a number of reconnaissance and intelligence satellites.\textsuperscript{80} The Chinese have also engaged in numerous tests of anti-satellite capabilities without customary warnings to the international community.\textsuperscript{81}

Moreover, China is not the only one of America’s geopolitical rivals pushing forward with new satellite and space system technology. Russia, for example, has its GLONASS system composed of 24 operational satellites, giving it global coverage.\textsuperscript{82} Russia also maintains a series of communications and reconnaissance satellites.\textsuperscript{83} The secrecy surrounding space programs makes any full assessment of space capabilities difficult, but enough evidence exists to show that what was once a nearly exclusive advantage for the U.S. is increasingly less so.

As U.S. systems and operations increasingly use and rely on satellite support, satellites and the capabilities they provide will become more critical. Consequently, one would expect to see a prioritization of funding for satellites, but that has not been the case. Instead, spending on military space systems declined from around $15 billion in FY 2000 to approximately $8.5 billion in FY 2010.\textsuperscript{84} In 2012, President Obama requested an additional 22 percent cut in military space spending for his FY 2013 budget. Although Congress rejected this request, the overall pressure on defense spending is likely to stress funding for national security space systems at the same time that the U.S. is increasingly reliant on them.

In fact, it is estimated that some 80 percent or more of the satellite bandwidth currently used by the U.S. military is supplied by the private sector and full motion video.\textsuperscript{85} Data, especially imagery, from various reconnaissance systems including UAVs, ground systems, and other sources that use satellites as relays take up an enormous amount of bandwidth. As a result, the Department of Defense has had no choice but to move this information over commercial satellites.

While considered less secure than military-grade satellites, commercial satellites have the advantage of being more numerous and more frequently updated as private-sector companies compete with one another.\textsuperscript{86} Other nations, like the United Kingdom, have closer cooperation and partnerships between their military and commercial providers, but the U.S. has not yet established this sort of clear relationship, and this limits the effectiveness of the means by which draws on commercial satellites.\textsuperscript{87}

With regard to satellite systems, the needs of the U.S. military are currently being met. U.S. military forces are able to do what they need to do with such systems.\textsuperscript{88} However, as data transmission demands continue to increase, the military’s needs will soon exceed America’s existing satellite capacity. Constrained budgets are causing senior leaders to consider ways to manage constellation degradation, to include greater reliance on commercial systems. While this option works well in peacetime, it accepts significant risk in war, especially given the effort by competitors such as China to develop anti-satellite capabilities and the growing challenges to ground station control capability posed by cyber attacks.

In 2011, then-Secretary of the Air Force Michael Donley and then-Vice Chairman of the Joint Chiefs of Staff General James Cartwright suggested looking to partner nations in Europe and perhaps even
geostrategic competitors (like China) to supplement U.S. capabilities. Doing so would certainly account for shortfalls in U.S. proprietary capacity, but it also would accept significant risk in defense planning—a situation that is in no way conducive to protecting the United States’ vital national interests.

**Cyberspace: A New Domain with Unique Challenges and Opportunities**

Cyberspace could be said to have begun on October 29, 1969, when engineers 400 miles apart at the University of California in Los Angeles and the Stanford Research Institute (SRI) sent data over the “Arpanet,” a network whose name derived from the agency funding the undertaking, the Defense Department’s Advanced Research Projects Agency (ARPA). The network began when one scientist attempted to log in remotely to a computer at SRI. He first typed the letter “L,” then “O,” then “G.” Then the system crashed. Three hours later, it was up and running again, and the world has been “logging on” ever since.

In the 1970s, more computers, mostly at research institutions and military organizations, were added to “ARPANET,” and basic applications like e-mail were created. Upgrades to ARPANET’s protocols that enhanced “Internetting,” or the improvement of communication between networks, were developed throughout the decade. As the Internet grew, so did the potential for malware, and the first known virus, dubbed “Brain,” was discovered in 1986.

Important transitions of protocols occurred in the early 1980s, enabling a split between research organizations and military operational organizations. Other government agencies and communities saw the power of the early Internet and latched onto it as well. By the end of the 1980s, private companies were able to participate in the development and use of the Internet. In 1998, the U.S. government relinquished control of the Internet’s naming function to the Internet Corporation for Assigned Names and Numbers (ICANN) under contract to the Department of Commerce, leading to the recent dramatic expansion of Internet-based technologies.

With these advances, however, has come the potential for exploitation. An increase in the capability to break into computer systems for espionage, crime, political statements, cyber destruction, and even physical destruction has paralleled the expansion of cyberspace. Malware, malicious hardware, and other types of cyber attacks are inherent in cyberspace and have created the need for cybersecurity.

Due to the devastating impact that they could have on critical infrastructure and military systems, cyber weapons—as well as the cyber capabilities of geopolitical rivals—pose a serious threat to U.S. interests. Cyber attacks could be used in tandem with efforts to attack or coerce the U.S. or its allies such as Israel, Taiwan, Japan, Poland, or Estonia. Cyber weapons also could be employed at a sufficiently serious level by such belligerent actors as Iran, North Korea, or terrorists who are interested in a show of strength or simply destruction and terror.

While cyber-espionage, cyber-crime, and other cyber threats to U.S. interests and the freedom of the Internet are serious offenses, such actions are, by definition, not a use of hard power: defined as military might or the ability to project physical force. The *Tallinn Manual*, an effort by 20 respected legal experts to apply various laws of war to cyber conflict, provides perhaps the clearest definition of when to treat a cyber attack as an “armed attack,” or the clear use of hard power that justifies military self-defense.

The manual sees hard-power use of cyber capabilities (i.e., armed attack) as those cyber operations whose “effects ... were analogous to those that would result from an action otherwise qualifying as a kinetic armed attack.” Therefore, this *Index* will focus on cyber operations that are of sufficient scale and effect that they could be considered hard power and used as part of an “armed attack.” The experts of the manual were divided on whether an operation whose scope and magnitude causes “extensive negative effects,” including economic or physical disruptions, but without large-scale fatalities should be considered an armed attack. Given that such an attack could be considered an armed attack by different actors, it will also be examined in this *Index*.

**Cyberspace as an Operating Environment.** Cyberspace is a unique operating environment that challenges the U.S. in multiple ways. These challenges include the cyber domain’s reach, speed, anonymity, and offense-dominated nature. Being a relatively new field of warfare, the cyber environment is one within which the U.S. is learning to operate. Understanding the unique nature and challenges of this realm, as well as the U.S.’s policies and the capabilities of its allies, is important to an assessment of the U.S. military’s ability to conduct military operations in the 21st century.
Cyberspace can be defined as “the manmade domain and information environment we create when we connect together all computers, wires, switches, routers, wireless devices, satellites, and other components that allow us to move large amounts of data at very fast speeds.”\textsuperscript{97} Looking even closer, cyberspace is composed of four layers:

- **Physical systems.** These include computers, machines connected to or controlled by a remote source, wires and cables, routers, and other pieces of physical hardware that allow for the interconnectivity between and operation of devices.

- **Logical systems.** Beyond hardware lie the important logic and software that make up the current Internet and cyber domain. The current system is defined by certain protocols and rules that allow different programs to be compatible and communicate with each other. From this logic come various forms of software and applications, all of which build on each other and work together to complete certain tasks.

- **Information.** To some extent, each system in cyberspace stores, sends, and receives information. Before the interconnectivity of computers, this information was still stored digitally but was not easily accessible to other individuals or devices. Cyberspace is defined by the unlocking of this information from its physical location and allowing it to transit the world for analysis, use, and even theft or exploitation at a rapid pace.

- **People.** Ultimately, cyberspace serves the needs of individuals and groups by providing the ability to communicate or analyze information, start or stop a process, or engage in countless other activities across the world and in conjunction with others. The customs, needs, organization, and training of different peoples affects the way in which cyberspace is used.\textsuperscript{98}

Together, these four layers, interconnected around the world, form the foundations of cyberspace as it is known today. Flowing from this construct, cyberspace contains three unique features that not only support U.S. civilian and military activities, but can also be used against the U.S. Specifically, cyberspace is:

- Ubiquitous,
- Anonymous, and
- Offense-dominated.

**Ubiquitous.** Cyberspace is defined largely by its vast reach and the ability of an individual to communicate with any computer in the world and vice versa.\textsuperscript{99} According to various estimates, at the end of 2008, there were at least 1 billion personal computers in use around the world—a number that it is estimated will double to 2 billion by 2015. Additionally, there were an estimated 1.4 billion smartphones in use at the end of 2013 and countless other cyberspace-connected devices, both in the civilian world and in the military, known as the “Internet of things.”\textsuperscript{100}

Each of these devices has the ability to access information and send commands across the Internet, interacting with any number of other devices. In most cases, this capability is peaceful and productive. However, it also allows hackers or those who seek to exploit unauthorized access to a computer system or network, whatever their allegiance and wherever they are, to abuse cyberspace and use it for their own ends.

As the world’s most technologically advanced military, the U.S. military uses cyberspace in numerous ways. In some areas, cyberspace has not only enhanced, but profoundly changed the way in which the U.S. military operates. Several of the most critical areas include:

- Command and control systems;
- Communications;
- Guidance and navigation systems;
- Intelligence and information-gathering, information-analyzing, and information-sharing systems;
- Vehicle, aircraft, and ship operations;
- Offensive cyber operations;
- Logistics, or the sustainment of military operations; and
- Research.
Most of these areas affect critical warfighting capabilities spread across all four branches of the U.S. military. Additionally, the U.S. homeland depends on 16 sectors of interdependent critical infrastructure, most of which are reliant on cyberspace. The Department of Homeland Security, together with other government agencies, is responsible for protecting these sectors. The 16 critical infrastructure sectors are:

- Chemical;
- Commercial facilities;
- Communications;
- Critical manufacturing;
- Dams;
- Defense industrial base;
- Emergency services;
- Energy;
- Financial services;
- Food and agriculture;
- Government facilities;
- Health care and public health;
- Information technology;
- Nuclear reactors, materials, and waste;
- Transportation systems; and
- Water and wastewater systems.

Most of these sectors depend either directly or indirectly on cyberspace. For example, a grocery store depends on electricity to use cash registers, run refrigerators, and order more food. The supply chain depends on communications and logistics systems that rely on electricity and Internet-based communications. Even farm irrigation systems may require electricity.

Such interdependence within critical infrastructure and widespread reliance on cyberspace creates serious vulnerabilities that can be exploited. Compounding these vulnerabilities, much of the critical infrastructure in the U.S. is owned and operated by the private sector, meaning that the government does not control their operations—even if it is charged with their protection.

Anonymous. Perhaps the most often remarked feature of cyberspace is its anonymity.\(^{101}\) It is difficult to determine the origin of a cyber attack or probe. First, an attack or penetration must be noticed. Then, forensic analysis of the attack mechanism must be undertaken to pinpoint the source of the intrusion and trace it back to the attacker. Depending on the complexity or type of attack, this process could take a significant amount of time. Even if the geographic origin of the attack is confirmed, it may be difficult to determine who exactly is responsible.\(^{102}\)

This problem is exacerbated by the ability of hackers to redirect their attacks through other locations, making it difficult to pinpoint the true origin of the attack. For example, an attack by China could be routed through U.S. systems to appear as though the attack originated within the U.S.\(^{103}\) While not impossible to solve, misdirections require time and resources that might not be available during a period of crisis.

For all of the difficulty ascribed to attributing cyber attacks to the correct actor, the “attribution problem” may in some circumstances be overstated.\(^{104}\) The ability to break through the anonymity of cyber attacks is improving as defenders are using the vulnerabilities and mistakes of hackers to track them down faster and more effectively.\(^{105}\) (For example, in December 2014, the U.S. government determined within a number of days that a cyber-attack on Sony Pictures Entertainment originated with the government of North Korea.) In some cases, a devastating cyber attack could be sourced by placing the attack in the context of other global affairs. For example, if the West Coast power grid and U.S. military systems in the Asia–Pacific theater were disrupted, and if China at the same time began aggres-
sive or coercive action against Taiwan or Japan, such events could inform the U.S. attribution process.

Similar examples can be seen with other actors that might be expected to pair their cyber attack with physical attacks or coercion—for example, as seen during Russia’s invasion of Georgia in 2008. Additionally, while any one cyber attack may be difficult to attribute to an actor, a series or campaign of attacks gives more data points with which to identify an attacker. Nevertheless, the attribution challenge and anonymous nature of cyberspace do still complicate U.S. responses to cyber attacks.

**Offense-Dominated.** For multiple reasons, cyberspace is currently considered an offense-dominated domain. It is easier, cheaper, and generally more effective to engage in offense rather than in defense. Cyber action is both instantaneous and constantly changing, which makes defense difficult. The dissemination of interconnected systems means that millions of potential targets are vulnerable to exploitation. And because the attacker has to find just one hole to exploit, cyber aggression is an appealing and cheap form of asymmetric warfare. Each of these reasons deserves greater explanation.

**First,** a main feature of cyberspace that contributes to the superiority of offense is its speed and dynamic nature. Though it can take months to find and exploit a vulnerability, the actual cyber attack occurs instantly. Furthermore, danger in the cyber-sphere is constant. Of the weapons in the arsenals of potential enemies, cyber weapons are the fastest and often provide little or no warning, making it difficult for defenses to be prepared and reinforcements brought to bear.

Compounding these challenges, new types of cyber attacks and vulnerabilities are constantly being discovered and developed by hackers. As a result, cybersecurity defenders are constantly playing catch-up. Of course, this assumes that defenders are even aware of a potential intrusion. Incomplete security systems or brand-new types of threats could evade the watchful eye of cybersecurity professionals until well after significant damage has been done.

**Second,** the wide variety of targets means that defenders have a lot to defend. As noted, the military and critical infrastructure sectors of the U.S. and other nations are all largely dependent on cyberspace. Worse, cyber attacks have the capability to target important systems indirectly by instead assaulting different systems on which the original systems rely. For example, attacking the command and control system of a B-2 might be easier than attacking the B-2 itself. Given the constantly evolving nature of cyberspace, it is practically impossible to secure every system perfectly—especially since the vast majority of critical infrastructure belongs to the private sector, with companies all at different places in their cybersecurity development.

**Third,** cyberspace is filled with potential adversaries who either have or could relatively easily acquire significant offensive cyber capabilities. This is driven by the low cost of entry for cyber warfare and the great potential for damage, making it similar to other inexpensive forms of asymmetric warfare. An opponent may not be able to field a global navy or large squadrons of advanced fighter jets, but it can still wreak significant levels of destruction with a much less expensive cyber force.

Many militaries and nations around the world are therefore interested in developing cyber capabilities that can help them to level the playing field. This is certainly true of potential cyber adversaries such as North Korea, Iran, Russia, and China, not to mention terrorists. Thus, the U.S. should expect to see a continued buildup of cyber capabilities by actors around the world as an asymmetric challenge to U.S. capabilities.

**Cyber Attacks and Their Effects.** Given these features of the cyber environment, cyber attacks are a serious avenue through which attacks can be launched, affecting the confidentiality, integrity, and availability of information or systems. If information is not private, the commands flowing from a system are not trusted, or a system is unavailable, then capabilities are weakened.

Part of having a comprehensive grasp of the cyber-operational environment is an understanding of what cyber attacks are and what effects they can have. It is worth repeating that for purposes of this report, only cyber attacks that have severe consequences will be considered, as such attacks would threaten a critical national interest much as the large-scale use of conventional weapons would threaten them. While many military systems operate on their own closed networks, they are still vulnerable to attack. Similarly, attacks against critical infrastructure could overwhelm various systems since many sensitive control systems are insecurely connected to the Internet.
# World Cyber Threats

The most serious threats in cyberspace come from nation-state and associated actors. With more resources and greater ambitions and objectives than most criminal organizations, nation-state attacks and hacks are among the largest, most aggressive, and most noteworthy acts of cyber-aggression.

<table>
<thead>
<tr>
<th>Country</th>
<th>North Korea</th>
<th>Russia</th>
<th>Iran</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capability</td>
<td>Limited Capability</td>
<td>Very Capable</td>
<td>Moderate Capability</td>
<td>Very Capable</td>
</tr>
<tr>
<td>Overview</td>
<td>Aggressive, unpredictable, scattered across the world</td>
<td>Non-government and criminal “patriotic hackers,” technologically advanced</td>
<td>Social network savvy, regional economic destabilizer</td>
<td>Globally diverse campaign of economic and military espionage, strategic mindset</td>
</tr>
</tbody>
</table>

## International Attacks

- **E** 48,000 South Korean bank, media, and government computers and servers attacked in 2013
- **P** Various attacks on South Korean and U.S. institutions coinciding with July 4 events and annual U.S.-South Korea military exercises
- **M** 54 government, finance, and communication websites attacked during invasion of northern Georgia in 2008
- **P** Estonian banks and government websites attacked following the moving of a Soviet war memorial in 2007
- **E** Oil company Saudi Aramco attacked in 2012, destroying 30,000 computers
- **P** Qatari natural gas company Rasgas’s computer networks attacked in 2012
- **E** Theft of hundreds of billions of dollars in IP from numerous nations across the world
- **P** Hong Kong’s voter registration system attacked after protests of China’s involvement in selecting a new state leader in 2014

## Attacks on U.S. Systems

- **P** 2009 attacks on U.S. and South Korean government websites, including crashing the Federal Trade Commission site
- **E** 2012 data theft by “Energetic Bear,” targeting the international energy sector, manufacturers, and defense contractors
- **P** Crashing of major U.S. bank websites following the 2012 sanctions on Iran
- **E** Campaign of infiltration of U.S. energy and critical infrastructure networks by the “Black Energy” malware starting in 2011 and discovered in 2014
- **P** Since 2012, “Operation Cleaver” has been breaching U.S. military, airline, energy, and other companies’ networks, as well as a variety of other worldwide targets
- **E** U.S. Department of Justice charges Chinese military officials in 2014 with hacking and economic espionage against six U.S. energy, mining, and manufacturing companies from 2006 to 2014

**Source:** Heritage Foundation research and analysis provided elsewhere in this study. heritage.org
Malware. Malware stands for “malicious software” and includes viruses, worms, Trojans, rootkits, and many other types of attacks. Malware often has the ability to replicate and spread with little or no help from human users. While many forms of malware, such as spyware, act surreptitiously and try to avoid being seen, such malware are generally associated with cyber espionage or crime—activities that are not hard-power uses of cyber weapons—although they can be used to create backdoors or vulnerabilities in computer systems that can later be used for other purposes.

On the other hand, some malware can be highly destructive to the functioning of a system. Trojans can take over control of a computer, obviously a dangerous capability in the hands of an adversary. Viruses and worms are the most easily spread forms of malware as they can replicate on their own. Among their more malicious capabilities, viruses and worms can disable computers by deleting critical data and preventing correct operation.

For some, disabled military platforms are merely an annoyance; for others, successful operation depends entirely on a working computer system or program. Even systems that are “air gapped,” or not connected to the Internet, are at risk via the supply chain when infected devices are connected to the closed system during updating or just by accident, or through other clever forms of transmission. Malware’s ability to spread, permanently disable, or even control a system makes it a dangerous cyber weapon in the hands of a dedicated opponent.

Denial of Service. Billions of computers are connected to the Internet with access to millions of other computers and websites. When too many computers try to connect with a website or computer, the target will slow down or even fail as scarce resources are used up trying to process these requests.

Denial-of-service (DOS) attacks send a flood of partial or flawed communications to a target system or site, leaving the target unable to respond effectively. These requests build up and eventually cause the target to slow down or crash. DOS attacks can be strengthened when a hacker places malware on thousands of other computers, thereby allowing the hacker to control these computers or “bots.” These otherwise innocent computers will then do the hacker’s bidding, multiplying the faulty requests sent to a website or system in what is known as a distributed DOS or DDOS attack. While DOS attacks can blind and disrupt, they are generally temporary in nature and do not leave any permanent cyber damage, though some advanced techniques, known as “phlashing” or “bricking,” can render hardware inoperable. Prolonged DOS attacks have been used to great effect, notably in Russia’s campaign against Georgia in 2008, in which debilitating DOS attacks froze the websites of Georgian government and media organizations. These attacks, in addition to limiting Georgia’s ability to communicate with its citizens and the outside world, coincided with a Russian military incursion in different areas of Georgia. DOS attacks will likely be part of any coordinated cyber attack against the U.S. or its allies, but they are generally the least harmful.

Malicious Hardware. Military and some critical infrastructure systems are at least somewhat protected from cyber attack because they reside on closed systems. Hardware threats avoid this potential defense, however, by being physically built into a computer system so that, regardless of how connected a device is to cyberspace, malicious instructions can be carried out. Given the interconnected nature of the technology industry’s supply chain, a single device can be made of thousands of parts, each built by a different contractor in a different country, making it difficult to be assured of a device’s security and integrity.

Hardware threats are generally less known and can be difficult to identify because they often go unnoticed until activated. Finding malicious hardware can be extremely difficult, since computer systems are often created from a multitude of parts, all potentially originating from different countries and different companies, with multiple contractors and subcontractors. Furthermore, testing hardware to find potential flaws or malicious circuitry is extremely problematic because testing cannot be exhaustive enough to cover all potential inputs or commands that a computer or individual chip might be given.

If hardware contains malicious circuitry, it can be activated at certain times, in certain places, or on demand. Once activated, malicious hardware can fail outright or just operate in an impaired manner. Hardware can also serve as a backdoor for the introduction of malware. Malicious hardware can build up over time, waiting for a potential conflict, and serve as a strategic way for an adversary to compromise another nation’s cyber systems.
Insider Attacks and Social Engineering. It is worth mentioning that a potential attacker may use employees, contractors, or other people with inside access to an organization to provide the opportunity for an attack. This can occur directly, in the case of insider attacks where a mole creates a vulnerability through which attackers can unleash an attack, or indirectly, in the case of social engineering that tries to trick individuals into giving up sensitive information or unknowingly enable a larger attack to come through.

Targeted and Advanced Persistent Threats (APT). While not a type of attack itself, it should be noted that advanced bad actors could use a combination of sophisticated and specifically tailored attack mechanisms to attack a target or group of targets persistently. Such strategies are often the work of nation-states or large criminal-hacker enterprises with significant amounts of resources. Importantly, these attacks can often bypass security measures and exploit holes in cyber defenses known as “zero-day” vulnerabilities, or vulnerabilities that were not known until they were used by hackers to exploit a system.

Additionally, many APT attacks follow an attack sequence that includes initial reconnaissance, the initial attack that breaches a system, building additional backdoors into the compromised system, gaining privileges and command and control powers, finding information, and exfiltrating information, all while continuing to hide one’s presence and establishing additional backdoors and privileges. This process can continue for years as the victim is continually robbed or harmed.

Advanced attacks can even result in physical damage. One the first examples of such an attack occurred in 1982 when the U.S. introduced faulty software into the pipeline control program of a Soviet gas pipeline. The program caused excessively high pressures within the pipes, causing what The Washington Post called “the most monumental non-nuclear explosion and fire ever seen from space.”

More recently, Stuxnet, one of the most complex pieces of malware the world has ever seen, caused the centrifuges at the Iranian nuclear facilities to spin occasionally at speeds that would damage the sensitive machinery. Stuxnet did so subtly, thereby concealing its actions from the Iranians for over a year. Physical damage from advanced cyber attacks is likely to become more common as more and more physical items are connected to the Internet of things.

The military, like any other community, is reliant on the cyber domain in everything it does, from simple administrative tasks to conducting war. Every feature of cyber is dynamic, from the scope and breadth of the domain itself to the tools used to conduct legitimate business and for malicious purposes, as well as for offense and defense in military affairs.

It took armies 50 years to digest the implications of industrialized warfare, from the time high-volume firepower and nearly instantaneous communications were introduced to the battlefield in the U.S. Civil War to their slaughtering effects on Europe’s battlefields in the First World War, and 25 years to understand the implications of airpower and the mechanization of forces as they evolved from their first appearances in World War I to their full manifestation in World War II.

The U.S., its friends, and its competitors are likewise trying to understand the nature and implications of the cyber domain. There is no question, however, that competence in this field, both to defend one’s own cybersystems and to challenge enemy cybersystems in wartime, is critical. America’s investments in this field should be made accordingly.
Endnotes:

1. Israel likely possesses nuclear weapons capabilities, although it has never officially admitted to possessing them. Pakistan openly demonstrated its nuclear capabilities in 1998, with a series of six tests in response to testing by India. North Korea conducted tests in 2006, 2009, and 2013, and is thought to possess a few weapons.


3. Fallout is radioactive debris that results from a nuclear explosion, is carried aloft into the air at considerable distance from the detonation, and then returns to Earth and contaminates areas potentially far removed from the original blast site. Electromagnetic pulse (EMP) is also an effect created by a nuclear blast in which a massive burst of electromagnetic energy is generated and propagated through the atmosphere and possesses the ability to damage electronic equipment.


6. “Counterforce targets” refers to a set of targets that have a political and military value (e.g., bomber bases, army battalions, or leadership). Countervalue targets are economic and civilian centers (e.g., cities or food factories).


19. The Comprehensive Test Ban Treaty does not define what constitutes a nuclear weapons experiment.


25. These transparency measures remained in effect until START I’s expiration in 2009.


34. Ibid.


41. We must not forget that the newly armed nations are already “using” their nuclear weapons in a nonmilitary sense: for example, to prevent significant intrusions into their political structure despite massive human rights violations or to limit retaliation in response to their aggressive behaviors. See Paul Bracken, The Second Nuclear Age: Strategy, Danger, and the New Power Politics (New York: Henry Holt and Company, 2012).

42. Spring, “Congressional Commission Should Recommend a ‘Damage Limitation’ Strategy.”


45. Ibid.


51. Ibid.
52. Ibid.
65. GPS.gov, “Space Segment.”
71. Ibid.

73. GPS.gov, “Space Segment.”


78. Lockheed Martin, “Mobile User Objective System (MUOS).”


86. Ibid.


88. The phrase “able to do what they need to do” is a relative condition in that requests for support will likely always exceed available resources. Space-based platforms are limited in number, while the intelligence targets on which one might want to collect information or the global activities of the U.S. military for which one likely needs support are expansive. Thus, demands for satellite support are prioritized, and resources are allocated accordingly. If a higher-priority request arises, some ongoing task of lesser priority gets “bumped.” Still, in general terms, the U.S. military is able to execute the missions assigned to it. Whether the U.S. intelligence community is likewise able to do so is a matter of conjecture given the high levels of classification that accompany intelligence collection operations. It is also important to note that the role of warning/intelligence becomes even more critical when the size and capabilities of one’s armed forces shrinks.


93. The cyber community lacks a clear, agreed-upon definition of “cyber weapon.” That said, one prominent definition put forward by security researchers at London’s King’s College defines a cyber weapon as “computer code that is used, or designed to be used, with the aim of threatening or causing physical, functional, or mental harm to structures, systems, or living beings.” This definition allows for a range of cyber weapons, from the weak denial of service attack to the advanced attacks that cripple or destroy physical devices. Some have argued that such a definition remains too broad and ought to be limited to more severe attacks with physical effects. Be that as it may, this Index uses one broad definition so as to not miss a cyber attack that could be considered a cyber weapon. For more information, see Thomas Rid and Peter McBurney, “Cyber-Weapons,” The Rusi Journal, Vol. 157, Issue 1 (2012), pp. 6-13, http://www.tandfonline.com/doi/full/10.1080/03071847.2012.664354#tabModule (accessed August 8, 2014).


96. As illustrated by these experts’ division on the issue (see Tallinn Manual, p. 56), ascertaining where exactly hard power ends and softer forms of power such as espionage and sabotage begins is difficult. This index will not try to solve this definitional and legal problem but will merely consider a viable but not overbroad definition that could be used by the U.S. or other nations in determining their response to serious cyber attacks.


103. Belk and Noyes, On the Use of Offensive Cyber Capabilities, p. 16.

104. In the event of a serious attack, however, nations that are attacked might attach certain levels of responsibility to the nation that is the source of the attack, depending on the perceived complicity of the source country’s government in such attacks. For more information, see Jason Healey, “Beyond Attribution: Seeking National Responsibility for Cyber Attacks,” Atlantic Council Issue Brief, January 2012, https://www.fbic.gov/public/2012/2012/12/National_Responsibility_for_CyberAttacks_2012.pdf (accessed August 8, 2014).


115. Lynn, “Defending a New Domain.”


126. Hollis, “Cyberwar Case Study: Georgia 2008.”

129. Working in an impaired manner may be just as dangerous as or even more dangerous than causing a system to fail outright. For example, a bug that made every missile miss its target by several yards might not be immediately apparent as a cyber attack, even though it is dramatically affecting the effectiveness of U.S. weapons. Systems that are not working properly, on the other hand, might pose an immediate problem, but alternative systems and replacements can mitigate this difficulty.


135. One of the most notable examples of large-scale physical damage caused by a cyber attack is the “Aurora” experiment. In 2006, controlled hacking by the Idaho National Laboratory was able to cause a large electrical generator to break. For more information, see CNN, “Staged Cyber Attack Reveals Vulnerability in Power Grid,” September 27, 2007, https://www.youtube.com/watch?v=IjyWngDco3g (accessed August 8, 2014); Rid and McBurney, “Cyber-Weapons.”
Regions of Enduring Interest: Latin America, the Caribbean, and Africa
Ana R. Quintana and Charlotte M. Florance

The United States has an abiding geopolitical interest in both the Latin America/Caribbean region and Africa, an interest that derives from America’s close economic, cultural, and demographic ties with these two regions. Though their security challenges do not rise to a level at which they threaten the vital national interests of the U.S., numerous destabilizing forces still plague these regions, posing substantial hurdles to their economic development and political stability.

Challenges aside, these areas also present great opportunities. The U.S. certainly remains engaged with the governments and peoples of the states that comprise Africa and greater Latin America, but so too do competitors of the U.S.—rivals who seek to gain access to these regions’ markets and resources and, for good or ill, cultivate relationships that support competing security agendas. As the U.S. considers just how much it should invest in its defense, it should remain mindful of these regions and the role that they play in geostrategic affairs.

Latin America and the Caribbean

Due to geographic proximity, high levels of trade, persistently growing demographic and cultural ties, and a lengthy history of diplomatic connections, the U.S. has strong links to and strategic interests in Latin America. Although regional security threats of the type that plague the Middle East and Africa and major threat actors like China, Russia, Iran, and North Korea are absent from Latin America, the U.S. still has a vested interest in the region’s economic and political stability.

Transnational organized crime continues to proliferate throughout Latin America, fueling violence, eroding the rule of law, and hindering economic development. While overall homicide rates have decreased around the world, this region has experienced a very different trend: Excluding anomalies like Chile and Costa Rica, the Central American and South American subregions are among the most dangerous in the world.

Successes in eradicating Colombian cartels and increased counter-crime initiatives in Mexico have pushed drug trafficking organizations into Central America, where smaller and poorer governments are ill-equipped to deal with such violent entities. In addition, a resurgence of illicit smuggling routes in the Caribbean corridor has raised concerns about the future of U.S. maritime interdiction efforts.

Violence and associated criminality continue in Mexico’s ongoing drug war, affecting not only Mexico, but also the U.S. because of the cross-border trafficking of illicit drugs that links the Mexican cartels with U.S.-based gangs. In many regions where police have failed, vigilante and militia groups have emerged—an attempt to restore order that only highlights the deficiencies of the central government. Venezuela has emerged as a major regional and international drug trafficking hub, with established networks throughout Central and South America, the Caribbean, and West Africa.

U.S. instruments of foreign policy vary throughout the region. Free trade agreements and bilateral economic assistance play an important role
in expanding markets for U.S. exports as well as in building partner capacity. While security cooperation between the U.S. and regional partners plays a critical role in combating transnational criminal organizations, such arrangements are quite uneven across the region as a whole, with the bulk of assistance going to Colombia and Mexico.

**Current U.S. Military Presence in Latin America and the Caribbean**

The United States’ Northern and Southern Commands (USNORTHCOM and USSOUTHCOM) handle U.S. military engagement with the countries of Latin America and the Caribbean.

- **U.S. Northern Command.** NORTHCOM, headquartered at Peterson Air Force Base, Colorado, focuses on Mexico and much of the Caribbean: the U.S. Virgin Islands, British Virgin Islands, Bermuda, Puerto Rico, The Bahamas, and the Turks and Caicos Islands. NORTHCOR’s Joint Task Force North (JTF North), based at Biggs Army Airfield, Fort Bliss, Texas, provides support to federal law enforcement agencies interdicting potential transnational threats within and along approaches to the U.S. (e.g., narco-trafficking, alien smuggling, and international terrorism).

- **U.S. Southern Command.** USSOUTHCOM’s area of responsibility for U.S. security interests includes the continental landmass south of Mexico, its surrounding waters, and the Caribbean Sea. Headquartered in Doral, Florida, USSOUTHCOM oversees the coordination of U.S. military efforts with 31 countries and 15 territories. USSOUTHCOM focuses on supporting federal and foreign agencies countering transnational organized crime, working with the militaries of the region, contingency planning, and terrorist detention (Naval Station Guantanamo Bay).

**Trade and Energy in Latin America**

High levels of trade and integrated economies have created strong connections between Latin America and the United States. The region is America’s fastest-growing regional trade partner: The U.S. sells more goods to Latin America and the Caribbean than it sells to the entire European Union (EU). Out of the 20 free trade agreements (FTAs) that the U.S. has entered into force, 11 are with countries in Latin America.

Approaching its 20th anniversary, the North American Free Trade Agreement (NAFTA) with Canada and Mexico surpasses America’s trade with the EU and Japan combined—and even with China. The U.S. is also party to the Dominican Republic–Central America–United States Free Trade Agreement (CAFTA–DR) with Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and the Dominican Republic. Bilateral FTAs with Colombia, Chile, Peru, and Panama also have been implemented.

Aside from trade, the U.S. energy sector is heavily reliant on the Latin America/Caribbean region. The U.S. imports about 40 percent of the crude oil and petroleum that it consumes, and more than half of this 40 percent comes from the Western Hemisphere. The largest suppliers of these imports are Canada (28 percent); Mexico (10 percent); and Venezuela (9 percent). In comparison, Persian Gulf countries Bahrain, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates supply 29 percent.

Strategically, the region’s geographic proximity to the U.S. increases its importance to America’s national interests. The U.S. shares an almost 2,000-mile border with Mexico that spans Texas, New Mexico, Arizona, and California. In 2013, the U.S.–Mexico border was crossed by over 166 million people and nearly 72 million vehicles, making it the most heavily trafficked border in the world.

**Mexico: Transnational Criminal Organizations, Gangs, and Violence**

With the dismantling of Colombian cartels in the 1990s, the illicit drug trade in Latin America shifted northward. Mexico is a large producer, supplier, and transit zone for U.S.-bound cocaine, heroin, methamphetamine, and marijuana. Over 95 percent of the cocaine sold in the U.S. is transported through Mexico. At the helm of this destabilizing threat are transnational criminal organizations (TCOs) and gangs that operate throughout Mexico. Competing TCOs—in this case, Mexican cartels—vie for control of key smuggling routes into the U.S. and critical transshipment points within Mexico.

Mexican cartels operate as full-scale criminal enterprises, controlling vast systems of illicit networks throughout the U.S., Mexico, Central America, and the Caribbean. In addition to wholesale distribution of the majority of illicit drugs in the U.S., Mexican cartels also engage in human smuggling and trafficking, kidnapping, extortion, and arms trafficking.
The illegal drug trade alone accounts for roughly $30 billion in annual revenue for the cartels, an amount equal to the gross domestic products of Honduras and Nicaragua combined, thus enabling them to corrupt local authorities or overwhelm them by force. While noteworthy cartel-related violence has yet to spill over into the U.S., the corrosive effect that these criminal organizations have on the rule of law, citizen security, and good governance affects U.S. security and national interests.

High-level corruption within the Mexican government and security forces continues to undermine U.S.–Mexico cooperation. The United States has provided Mexico with counter-drug assistance since the 1970s, but after the assassination of a U.S. Drug Enforcement Agency agent in 1985, bilateral cooperation slowed. Following the signing of a Binational Drug Control Strategy in 1998, however, collaboration improved.

To date, the most significant cooperation between the U.S. and Mexico has come through the Mérida Initiative, which emphasized the shared responsibility of both countries to combat drug trafficking and organized crime. Between fiscal year 2008 and FY 2014, over $2.4 billion was allocated to Mexico for this security initiative, with additional supplements as needed.

Central America’s Northern Triangle

All three of Central America’s Northern Triangle countries—Guatemala, Honduras, and El Salvador—are facing a number of chronic crises. Rampant corruption and weak state institutions have rendered central governments incapable of combating threats posed by violent transnational gangs and organized criminal groups. These illicit groups have embedded themselves into these governments and are creating criminalized states. All three countries have been unable to respond effectively to their security problems.

Located along a critical trafficking route, Honduras alone is a layover spot for upwards of 79 percent of northward-bound drug flights. Much of the U.S.-bound methamphetamine supply is produced in Central America.

Historically, this region is also one of the most violent in the world. Honduras has the world’s highest annual homicide rate, averaging 91 deaths per 100,000 people. El Salvador is fourth with an average of 41 per 100,000, and Guatemala is fifth at 40 per 100,000. In comparison, the U.S. registers five homicides for every 100,000 people. A shaky gang truce in El Salvador reduced overall homicide rates from March 2012 to mid-2014, but these gangs still perpetrated other violent crimes. A multitude of transnational criminal organizations like the Mexican Zetas and Sinaloa drug cartels have capitalized on the weak governments of the Northern Triangle and are now fully operational within the region.

Much like the trend seen in Central America, islands like Puerto Rico and the Dominican Republic are increasingly becoming layover spots for U.S.-bound illicit drugs. Because it is a U.S. territory, shipments coming in from Puerto Rico are subject to less scrutiny than are international shipments, a fact that further undermines maritime interdiction.

Interference of Foreign Adversaries and Countering of U.S. Influence

America’s geopolitical foes have exploited and will continue to exploit the region’s proximity to the U.S. homeland by seeking relationships with willing regional partners to counter U.S. influence. Although these activities do not pose a direct security threat at the moment, these foreign adversaries are finding receptive hosts within countries that view the U.S. as an ideological opponent: specifically, the Bolivarian Alliance (ALBA) countries of Venezuela, Cuba, Ecuador, Nicaragua, and Bolivia.

One of America’s primary adversaries, Russia, is developing strategic regional partnerships in the form of military cooperation, arms sales, trade agreements, and even cooperation in counternarcotic operations. In addition to high-profile visits by the Russian Navy’s Interfleet Surface Action Group to Cuba, Nicaragua, and Venezuela, Russia used a regional exercise to deploy two long-range strategic bombers to Venezuela and Nicaragua and, following its annexation of Crimea, announced plans to build military bases in Nicaragua, Cuba, and Venezuela.

Activities like these have not been seen for over three decades. Venezuela has purchased a noteworthy amount of weapons from Russia, including tanks, “Sukhoi fighter jets, combat helicopters, and over 100,000 light weapons” as well as “a license to produce them in Venezuela.” Reports also indicate that in 2008, Russia sold a batch of Igla-S (SA-24) shoulder-fired antiaircraft missiles to Venezuela.

The People’s Republic of China (PRC) has been another active player in the region. Much of Chi-
na’s engagement has focused on expanding bilateral economic relations and major investments in infrastructure development projects. Currently, the PRC has proposed to invest $40 billion in constructing an interoceanic canal in Nicaragua that is set to rival the Panama Canal. Joint military exercises have largely been of a humanitarian nature, such as exercises with regional armed forces in which medical services are provided in rural villages.

In 2013, the Chinese People’s Liberation Army Navy (PLAN) conducted a three-country visit and had its first naval exercise with the Argentine Navy. Visits to the region by senior PLA leaders are common, and virtually every country in Latin America maintains a permanent defense attaché in the PRC. The bulk of defense sales have gone to ALBA countries, illustrating China’s intent to leverage relationships with Latin American countries that are explicitly anti-U.S.

Iran’s growing presence in Latin America has raised concerns in the U.S. Tehran has spent the past decade increasing its regional economic relations and diplomatic presence, particularly in the ALBA countries. Within Venezuela, Ecuador, Bolivia, and Argentina, it has found hospitable allies and has developed favorable relations.

Credible unclassified reporting indicates that Hezbollah’s presence in Latin America is limited to ideological or religious sympathizers and criminal facilitators who see opportunity in linking drug, contraband, and weapons trafficking to the illicit network and external market access managed by Hezbollah. Regional supporters of other international terrorist organizations engage in money laundering and, quite possibly, even recruiting.

Financed by Venezuela and initiated by late Venezuelan President Hugo Chávez, the socialist ALBA bloc has spearheaded a wave of anti-Americanism throughout Latin America. Uniting the countries of Latin America to reduce the U.S.’s regional power and presence has been the core tenet of the 21st century socialist movement. ALBA member countries Cuba, Nicaragua, Ecuador, and Bolivia have expelled some U.S. diplomats, shut down U.S.-led counternarcotic programs, and hampered bilateral trade negotiations. In 2011, the president of Ecuador revoked the U.S.’s access to its Manta military base—the only forward operating location in Latin America, from which U.S. forces have worked alongside the Ecuadorian military on Andean counternarcotic and surveillance programs.

The rise of regional groups that purposefully exclude the U.S. indicates the movement’s pervasiveness. Multilateral organizations like South American Nations (UNASUR) and the Community of Latin American and Caribbean States (CELAC) seek to circumvent the power of the Organization of American States (OAS), the only one to which the U.S. is a party.

The government of Venezuela continues to sustain the Castro regime in Cuba. Caracas annually provides Havana with an average of $10 billion in subsidized oil and currency—more than twice the amount that Cuba received from the Soviet Union at the height of the Cold War. In exchange, Cuba provides Venezuela with critical military and intelligence resources as well as civilian slave labor.

Of a more sinister nature are the government’s connections to regional and international terrorist groups. For example, the Colombian narco-terrorist organization, the FARC, has long enjoyed sanctuary within Venezuelan territory, reportedly with the support of Venezuelan officials. High-ranking members of the Venezuelan government have provided support to Hezbollah as well. Venezuela’s equivalents of the U.S. Attorney General, Secretary of Homeland Security, and FBI Director are considered to be “Significant Foreign Narcotics Traffickers.”

In 2008, the U.S. Treasury Department’s Office of Foreign Assets Control (OFAC) found that Venezuela’s most senior diplomat at its embassy in Syria facilitated the travel of two Hezbollah representatives who were attempting to raise funds and open a Hezbollah community center in Venezuela.

In terms of conventional military power, ALBA member countries do not pose a major threat to the U.S., but the radical form of socialist populism that they promote has undermined traditional U.S. foreign policy objectives. The regional bloc continuously seeks to create a hostile environment for the U.S., undermining America’s attempts at regional cooperation. In addition to using regional proxies to unite the Americas against the U.S., ALBA nations have consistently provided sanctuary to regional and global terrorist organizations, transnational criminal organizations, and international pariahs. Currently, Iran and Syria are observer states in ALBA.

**Africa**

The United States has strategic, economic, and historic interests in Africa. Although there is a high probability that regional security risks will not
directly threaten the territorial integrity of the U.S. homeland or result in a major regional war or significant loss of freedom of maneuverability of the commons, the U.S. continues to have a vested interest in countering threats on the African continent and maintaining regional stability. Small and local problems can quickly become large and regional in ways that would threaten U.S. vital national interests. One needs to look no further than Afghanistan in Central Asia or Syria in the Middle East to see the potential for states and violent non-state actors (terrorist groups) to pose such threats far beyond their local origins. Destabilized and ungoverned areas often serve as sanctuaries for organizing, planning, maturing, and training for activities that eventually reach far beyond these sanctuaries. Accordingly, religious extremism, ethnic conflicts, authoritarian regimes, ungoverned space, and insecure energy supply lines define the direct areas of concern for the United States and its partners within the region.

In 2013–2014, the African continent saw an uptick in violent conflict in the Central African Republic, Libya, Mali, and South Sudan, as well as the ongoing conflicts in Somalia, Nigeria, and the Democratic Republic of Congo. Additional areas of concern include the increase in maritime piracy in the Gulf of Guinea, illicit drugs, wildlife and arms trafficking, and terrorist groups linked to al-Qaeda. The threat of terrorism and the additional pressures from refugees on governments such as Niger and Cameroon also have added to an increasing potential for future conflict hot spots.

**Current U.S. Military Presence in Africa**

In October 2007, U.S. Africa Command (AFRICOM) was established to effect better coordination of all U.S. military engagements with the countries of Africa (except Egypt, for which the U.S. Central Command has responsibility), including the continent’s island nations and surrounding waters. AFRICOM is responsible for the Pentagon’s relations with African countries; the African Union (a regional union that consists of 53 African states but excludes Morocco); and African regional security organizations such as the Economic Commission of West African States’ Department of Defense. While its headquarters is not physically located in Africa, AFRICOM is the primary instrument by which the U.S. works with Africa’s various militaries.

AFRICOM is headquartered at Kelley Barracks in Stuttgart-Moerhringen, Germany. The newest geographic combatant command, AFRICOM, initially a sub-unified command under U.S. European Command, officially became a separate combatant command in October 2008. AFRICOM supports a broad range of U.S. agencies and supports the Department of State in outreach and relationship building.

AFRICOM addresses a multiplicity of threats emanating from Africa—challenges that require non-traditional military solutions and encouraging long-term partnerships aimed at addressing the root causes of problems that plague the region. During the initial rollout of AFRICOM, one U.S. official claimed that the command would be a success “if it keeps U.S. troops out of Africa for the next 50 years.”

AFRICOM currently serves as a test case for the Army’s program to develop regionally aligned brigades. Such brigades would focus on an assigned region and align their unit and personnel training accordingly to include language skills, cultural familiarity, exercise scheduling, and analysis of evolving security conditions. Missions assigned to these brigades would range from two-person teams working closely with local counterparts to accomplish sensitive tasks to more than 300 soldiers conducting airborne and humanitarian training with partner country forces. These units will have conducted more than 100 missions in 2014.

AFRICOM is supported by six subordinate commands:

- U.S. Army Africa (USARAF), operating out of Vicenza, Italy;
- U.S. Naval Forces Africa (NAVAF), headquartered in Naples, Italy, and with its staff shared with U.S. Naval Forces Europe;
- U.S. Air Forces Africa (AFAFRICA), located at Ramstein Air Base, Germany, with its staff shared with U.S. Air Forces in Europe;
- U.S. Marine Corps Forces Africa (MARFORAF), located in Stuttgart, Germany, with its staff shared with U.S. Marine Corps Forces Europe;
- Combined Joint Task Force–Horn of Africa (CJTF–HOA), headquartered at Camp Lemonier, Djibouti; and
U.S. Special Operations Command (SOCAFRICA), co-located with AFRICOM in Stuttgart, Germany.

Notably, CJTF–HOA serves as one of the most critical subordinate commands, both for AFRICOM and for U.S. military operations in Africa, because it is physically present in Africa. CJTF–HOA consists of approximately 2,000 military personnel from the U.S. and allied countries at its headquarters in Djibouti. Its assigned area of interest includes all of East Africa and the Horn of Africa, as well as operations in Mauritius, Comoros, Liberia, and Rwanda; its efforts are aimed at improving African countries’ capacity to sustain a stable environment, including effective governance systems that provide a degree of economic and social advancement to their citizens. Recent missions include the East Africa Response Force (EARF) that was deployed to Juba, South Sudan, for three months to secure the U.S. embassy after conflict broke out between government and rebel forces in December 2013.

Despite the creation of AFRICOM and the diverse set of tools and programs intended to support African-led solutions to African problems, serious challenges remain. U.S. military efforts in the region face a shortage of key capabilities, including persistent wide-area intelligence, surveillance, and reconnaissance (ISR), that result in a severely limited understanding of what is happening on the ground in such areas as Northern Nigeria, deep in Central Africa in the Democratic Republic of Congo, or on the open Indian Ocean well beyond the Seychelles.

The relatively small number of AFRICOM forces and engagement opportunities across the extraordinary expanse of Africa means that AFRICOM has to rely on platforms instead of people to collect intelligence and develop and maintain situational awareness of evolving security conditions. Consequently, the fewer high-endurance ISR platforms there are available to AFRICOM, the less awareness it has in high-interest areas of Africa.

While the U.S. has not involved itself with “boots on the ground” in many of Africa’s civil wars, the U.S. supports many international response efforts in places like Mali and the Central African Republic indirectly, usually with airlift, reconnaissance, and refueling support. AFRICOM continues to hold large exercises with African partner nations, including the annual “Flintlock” exercise. Flintlock has been conducted each year since 2005 and brings together about 6,000 African troops, 300 U.S. trainers, and another 200 Western partners. The 2013 exercise was conducted in Mauritania, and the exercise in 2014 was held in Niger. And the U.S. military provided logistical, construction, and medical support in the Ebola outbreak in West Africa that began in 2014.

The Arc of Instability in Africa

Africa is a global center of emerging threats. The dangerous mix of religious extremism, ethnic conflicts, authoritarian regimes, ungoverned space, and arms proliferation is driving modern-day conflict in the region. Furthermore, historical divisions manifest themselves to the benefit of global Islamist terrorists. Local grievances (whether perceived or real) that were previously believed to be locally contained conflicts in places such as northern Mali or northern Nigeria have been co-opted and exacerbated by terrorist groups and affiliates linked to al-Qaeda.

Terrorists threaten not only U.S. partners in Africa, but U.S. citizens and assets, as evidenced by the September 11, 2012, attack on the U.S. consulate in Benghazi. Al-Qaeda has a history of attacking U.S. interests in Africa, including the 1998 embassy bombings in Nairobi, Kenya, and Dar Es Salaam, Tanzania, where more than 230 people were killed, including 12 Americans.

For global terrorists, much of Africa is ripe for the picking. For example, poor governance, untrained and inexperienced militaries, and a disgruntled and growing youth population provide fertile ground for a group like al-Qaeda in the Islamic Maghreb (AQIM). Although such organizations have been frustrated in their operations as a result of the U.N.-backed French intervention in Mali (for which strategic airlift and refueling were provided by the U.S. in coordination with the United Kingdom, Canada, and Sweden), the threat from Islamist terrorists remains real and credible, particularly within the zone known as the “arc of instability” in Africa.

This arc extends from the coast of West Africa, across the Sahelian zone, along the northern reaches of the continent, and down through East Africa to include Ethiopia and Somalia. As a result of cross-border raids and kidnappings, Islamist terrorism is bleeding into Cameroon. The metamorphosis of the conflict in the Central African Republic for control of state resources and a vast
illicit economy into a conflict that is defined primarily in religious terms highlights the extent to which religious extremism and ethnic conflicts are mixing to create an even more dangerous threat to regional stability.

Given the proximity of the arc to NATO allies and the heavily trafficked waters of the Mediterranean, Red Sea, and Gulf of Aden, the region should continue to be monitored closely. Libya’s rapid descent into chaos is a special cause for concern given the country’s potential to become another global launching pad for terrorism akin to Yemen and Pakistan.

Of equal concern to the United States are countries that are contributing foreign fighters to the conflict in Syria, such as Libya and Tunisia, as well as countries that are serving as destination points for foreign fighters as seen in Somalia. Somalia is a notorious destination for American foreign fighters intent on joining the al-Qaeda-linked group al-Shabaab. Reports also indicate that the Nigerian-based terrorist group Boko Haram trained alongside AQIM and the Movement for Oneness and Jihad in West Africa (MUJAO). Such groups provide ample battle experience to committed fighters that either return home to the United States or move along to other fronts for global terrorism, thus posing significant threats to the United States at home and to its interests abroad.

Maritime Security

Africa has become a hotbed of maritime piracy and armed robbery at sea. Despite the gains made in recent years, piracy in the Gulf of Guinea has begun to draw considerable attention because it is heavily oriented around the oil sector. The theft of oil from the oil distribution infrastructure (the pipelines and storage facilities that connect drilling rigs with collection and refinery facilities), an activity known as “oil bunkering,” is widespread and often occurs within the territorial waters of Nigeria. While each regional situation varies significantly from the other, both of these activities are harmful to global commerce and freedom of the seas.

The expansion of maritime piracy in Africa is closely connected to poor governance and lackluster law enforcement on land—problems that are enabled by and in turn worsen the region’s widespread corruption and entrenched criminal and illicit networks. West African criminal networks are particularly well-organized and intelligence-driven and purportedly include high-powered political, business, and military participants.

The expansion of piracy in West Africa is linked not only to the expansion of the region’s illicit oil market, but also to the increase in international shipping to and through the region, which has led in turn to a “backlog” of ships waiting either to load or to unload. Growing numbers of ships waiting in territorial waters without adequate protection are vulnerable to corrupt law enforcement authorities who tip off criminal gangs.

The disruption of maritime transport and access to markets can have a direct impact not only on vital economic activity in the immediate region, but in distant markets as well. Piracy has a negative impact on economic investment in affected regions, disrupts energy flows, slows global trade, damages critical infrastructure, and hinders the protection of marine resources. Given that many of the countries in West Africa are economically dependent on energy revenues, the growing scope and effectiveness of maritime piracy directly affect overall economic security in the region and the main consumers of sub-Saharan African crude: Europe, China, and various U.S. partners in the region.

Arms Trafficking and the Illicit Economy

Several other illegal activities such as arms trafficking, drug trafficking, wildlife trafficking, and human trafficking also serve as cancers across the region, undermining governance and disrupting economic growth. Illicit trafficking networks, particularly in West Africa, Northwest Africa, and the Sahel, are funding criminal gangs and terrorists alike.

The region serves as a conduit for the transnational drug trade. Drugs are produced in Latin America, shipped to West Africa, trafficked through West and Northwest Africa, and consumed in Europe. According to the U.N. Office on Drugs and Crime (UNODC), “It is estimated that at least 50 tons of cocaine transit through West Africa annually, heading north to European cities, where they are worth almost $2 billion....” East Africa is also becoming an increasingly key transit route for heroin that is being trafficked to Europe from Asia.

Organized crime and the income generated from illicit activities help to fund extremist groups like Boko Haram in Nigeria and AQIM in North Africa. In April 2014, Boko Haram kidnapped nearly
300 girls and reportedly sold a number of the victims as slaves, exploiting the region’s porous and unpatrolled borders. The region’s terrorist heavyweights—Boko Haram, Ansar Dine, AQIM and the MUJAO—all have links to lucrative illicit activities including drugs and human trafficking.28

Al-Shabaab in Somalia also engages in the illegal charcoal trade,29 estimated to generate somewhere between an estimated $38 million and $56 million per year for the terrorist group.30 The black-market charcoal trade thrives on Somalia’s instability and feeds a vicious cycle that both deprives Somalia’s legitimate government of revenues and funds terrorism.

Additionally, wildlife is among the five most valuable illicit commodities, with poaching generating “an estimated value of $10 billion a year...”31 The illicit traffic in ivory finances al-Shabaab32 and supports other non-state actors such as Ugandan warlord Joseph Kony’s Lord’s Resistance Army (LRA),33 which operates in Uganda, South Sudan, the Democratic Republic of Congo, and the Central African Republic. Sudan’s Janjaweed militia also derives funding for its destabilizing activities in Darfur through illicit ivory sales.34

In addition to the revenue generated by the traffic in these various commodities and the logistical network that spans the entire continent of Africa, arms trafficking and sales make it possible for criminal gangs, militias, and terrorist groups to prolong conflicts that destabilize entire regions. For example, after the fall of Libya’s Muammar Qaddafi, a significant number of armory storage sites were looted, and their contents subsequently proliferated throughout the region. AQIM acquired anti-aircraft and anti-tank missiles and transferred arms to other groups in the region including Boko Haram and Ansar Dine. Arms proliferation, a strengthened AQIM, and the return of Tuareg mercenary fighters from Libya in 2011 led to the current conflict in Mali.

Arms trafficking in the Sahel and trans-Saharan region remains largely unmonitored by responsible governments and credible law enforcement entities due to a severe lack of ISR capabilities. Complicating matters is the fact that not all illicit activity occurs above ground. In Nigeria, for instance, Boko Haram uses a series of underground tunnels to traffic in weapons, drugs, and other commodities.35

The growth of illicit economies in Africa and their expansion across borders and entire regions under-
to the larger good of reducing piracy, participation in these partnerships and training opportunities ultimately provides the People’s Liberation Army Navy with “a platform to enhance its expeditionary capacity” in a region of significant interest to China.39

“African Solutions to African Problems”

Many of the challenges in Africa have global reach, and while they will not directly threaten the territorial integrity of the U.S. homeland, result in a major regional war, or result in the loss of freedom of movement in or access to the commons, the U.S. still has a vested interest in countering threats on the African continent and working to improve regional stability. “African solutions for African problems,” a mantra repeated regularly by U.S. officials since AFRICOM was established in 2008, remains far from being a reality.

Africa’s problems remain pervasive and continue to increase in virulence. Terrorism in Africa affects not only U.S. interests and citizens in Africa, but also the U.S. itself. Umar Farouk Abdulmutallab, known to many as the “Underwear Bomber,” was born and raised in Lagos, Nigeria. If America does not take Africa seriously both as a security threat and as an opportunity to be seized, individuals like Abdulmutallab will continue to represent a serious threat to the U.S.

Absent a serious U.S. investment in time, attention, and resources, governments such as China and Russia will continue to build influence with Africa’s authoritarian leaders—thugs who increase rather than eliminate grievances. Such oppressive regimes drive more individuals into the arms of extremists and illicit economic opportunists, ultimately downgrading the security environment of the entire continent.
Endnotes:


6. Kelly, statement before the House Committee on Armed Services.


10. Kelly, statement before the House Committee on Armed Services.


13. The African Union is made up of 53 member states that are generally recognized. Its membership roster also includes the Polisario Front’s “Sahrawi Arab Democratic Republic,” which is neither admitted as a state by the United Nations nor recognized as such by the United States or any other permanent member of the Security Council.


26. Ibid.


32. Ibid.


Assessing the Global Operating Environment

Measurement of the “strength” of a military force—the extent to which that force can accomplish missions—requires examination of the environments in which the force operates. Aspects of one environment may facilitate military operations while another may work against them. A favorable operating environment presents the U.S. military with obvious advantages; an unfavorable operating environment may limit the effect of U.S. military power. The capabilities and assets of U.S. allies, the strength of foes, the geopolitical environment of the region, and the availability of forward facilities and logistics infrastructure all factor into whether an operating environment is supportive of U.S. military operations.

When assessing an operating environment, particular attention must be paid to any treaty obligations the United States has with countries in the region. A treaty defense obligation ensures that the legal framework is in place for the U.S. to maintain and operate a military presence in a particular country. Furthermore, a treaty partner usually yields regular training exercises and interoperability as well as political and economic ties.

Additional factors also impact the operating environment, including military capabilities of allies that might be useful to U.S. military operations, the degree to which the U.S. and allied militaries in the region are interoperable (e.g., can use common means of command, communication, and other systems), and whether the U.S. maintains key bilateral alliances with nations in the region. Likewise, nations where the U.S. has already stationed assets or permanent bases, and countries from which the U.S. has launched military operations in the past, may provide needed support to future U.S. military operations. The relationships and knowledge gained through any of these factors would undoubtedly ease future U.S. military operations in a region and contribute greatly to a positive operating environment.

In addition to U.S. defense relations within a region, additional criteria should be considered, including the quality of the local infrastructure, the political stability of the area, whether or not a country is embroiled in any conflicts, and the degree to which a nation is economically free.

Each of these factors contributes to the judgment whether a particular operating environment is favorable or unfavorable toward future U.S. military operations. The operating environment assessment is meant to add critical context to complement the threat environment assessment and U.S. military assessment detailed in subsequent sections of the Index.

* This Index will refer to all disputed territories by the name employed by the United States Department of State, and should not be seen as reflecting a position on any of these disputes.
The geography of the U.S. European Command (EUCOM) area of responsibility demonstrates why the region matters. The 51 countries in that area include approximately one-fifth of the world’s population inside 10.7 million square miles of land and 13 million square miles of ocean. EUCOM’s area has physical borders with Russia, the Arctic, Iran, Asia Minor, the Caspian Sea, and North Africa. Most of these areas have long histories of instability and a potential for future instability that could directly affect the security interests and economic well-being of the United States.

This region matters to the United States. Some of America’s oldest and closest allies are found here. The U.S. shares with this region a strong commitment to the rule of law, human rights, free-markets, and democracy. Many of these ideas, the foundations upon which America was built, were brought over by the millions of immigrants from Europe in the 17th, 18th, and 19th centuries. During the course of the 20th century, millions of Americans have fought for a free and secure Europe.

The economic ties are important too. A stable, secure, and economically viable Europe is in America’s economic interest. Regional security means economic viability and prosperity. For more than 70 years, the U.S. military presence in Europe has contributed to European stability, which has economically benefited both Europeans and Americans. The economies of the 28 member states of the European Union, along with the United States, account for approximately half of the global economy. The U.S. and the members of the European Union (EU) are each other’s principal trading partners.

Geographical Proximity. One of the most obvious reasons why Europe is important to the U.S. is its geographical proximity to some of the most dangerous and contested regions of the world. To the south of Europe, from the eastern Atlantic Ocean to the Middle East and up to the Caucasus through Russia and into the Arctic, is an arc of instability. This region is experiencing increasing instability from demographic pressures, increased commodity prices, interstate and intrastate conflict, tribal politics, competition over water and other natural resources, religious tension, revolutionary tendencies, terrorism, nuclear proliferation, and “frozen conflicts” (i.e., conflicts in which active combat has ended, but disputes and hostile attitudes remain). This region also has some of the world’s most vital shipping lanes, energy resources, and trade choke points.

The basing of U.S. forces in Europe generates benefits outside of Europe, too. Recent instability in North Africa has shown the utility of basing robust U.S. military capabilities near potential global hot spots. For example, when ordered to intervene in Libya, U.S. commanders in Europe were able to act effectively and promptly because of the well-established and mature U.S. military footprint in southern Europe.

The same can be said of the Baltic region in light of the crisis in Ukraine. The 600 U.S. soldiers who rapidly deployed to the Baltics and Poland deployed from U.S. bases in Italy. The F-15s and F-16s (includ-
ing their crews, maintenance staff, fuel, spare parts, etc.) the U.S. Air Force sent to the region deployed to Eastern Europe from U.S. air bases in the United Kingdom and Italy, respectively. Without this forward presence in Europe, these deployments would have been costlier and slower.

In spite of generally peaceful conditions in Europe over the past decade, there remain latent security concerns that further highlight the utility of a strong and proximate U.S. military presence in the region. Consider that in addition to a resurgent Russia flexing its muscles on NATO’s eastern flank, the Balkans continue to be an area of potential instability for Europe. Although security has improved dramatically in this region since the 1990s, there is still potential for more violence resulting from sectarian division based on religious and ethnic differences. These tensions are exacerbated by sluggish economies, high unemployment, and political corruption. In 2014, Bosnia and Herzegovina experienced some of the most violent anti-government riots in 20 years. On a positive note, Albania and Croatia have joined NATO and Macedonia, Montenegro, and Bosnia and Herzegovina are official aspirant countries. The first two have made great progress toward joining the alliance. However, the situation in Kosovo remains fragile, even though there has been an EU-led rapprochement between Pristina and Belgrade that has seen modest success.

Perhaps one of the biggest political and security challenges in the region is found in Republika Srpska, one of two sub-state entities inside Bosnia and Herzegovina that emerged from that country’s civil war in the 1990s. The leader of Republika Srpska, Milorad Dodik, has long been an advocate of independence for Republika Srpska and has been courted by Moscow. Recent events in Crimea have inspired more separatist rhetoric in Republika Srpska. Added to this is a general dissatisfaction among huge swaths of the population. Unemployment, a dire economic situation, and perceived political corruption led to a number of public protests in early 2014. The EU has a skeleton force of 600 troops left in Bosnia. NATO still maintains a sizable force of more than 4,555 troops, including 734 Americans, in Kosovo. The security situation in the Balkans is far from settled.

The Arctic. Another area of focus for Europe is the Arctic. The Arctic region, commonly referred to as the High North, is becoming more contested than ever before. The Arctic region encompasses the lands and territorial waters of eight countries (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States) spread across three continents. Unlike in the Antarctic, there is no Arctic landmass covering the North Pole—just ocean. The region is home to some of the world’s roughest terrain and waters and some of its harshest weather. The Arctic region is rich in minerals, wildlife, fish, and other natural resources, and, according to some estimates, contains up to 13 percent of the world’s undiscovered oil reserves and almost one-third of the world’s undiscovered natural gas reserves.

The region represents one of the least populated areas in the world, with sparse nomadic communities and very few large cities and towns. Approximately half of the Arctic population lives in Russia, which is ranked 140th out of 178 countries in the 2014 Index of Economic Freedom.

The melting of Arctic ice during the summer months presents challenges for the U.S. in terms of Arctic security, but it also provides new opportunities for economic development. A decrease of ice will mean new shipping lanes, increased tourism, and further natural resource exploration. Many of the shipping lanes currently used in the Arctic are a considerable distance from search and rescue facilities, and natural resource exploration that would be considered routine in other locations in the world is complex, costly, and dangerous in the Arctic.

However, the economic incentives for exploiting these lanes are substantial and will drive Arctic nations to press their interests in the region. For example, using the Northeast Passage along the Russian coast shortens a trip from Hamburg to Shanghai by almost 4,000 miles, cuts a week off of delivery times, and saves approximately $650,000 in fuel costs per ship. Unlike in the Gulf of Aden, there are no pirates operating in the Arctic currently, and they are unlikely to be a problem in the future.

Of course, the U.S. has an interest in stability and security in the Arctic because the U.S. is an Arctic nation, too. The American commitment to NATO is also relevant because four of the five Arctic littoral powers are in NATO.

**Economic Turmoil.** In recent years, the economic situation in Europe has brought turmoil and instability. Taken as a whole, the European region is undergoing a tumultuous and uncertain period
epitomized by the ongoing sovereign debt crisis in Europe’s south. Europe’s overall economic freedom is undermined by excessive government spending in support of elaborate welfare-state policies that are hindering productivity, growth, and job creation, causing economic stagnation, encouraging low birth rates, and rapidly increasing levels of public debt. Many European countries have been slow to implement the austerity measures required to reduce public spending. Many among Europe’s elite appear to believe that European integration, not prudent economic policies, is the answer to Europe’s problem. However, there has been public backlash to deeper political and economic integration across much of Europe. As a result, nationalism is on the rise: In 2014, extreme left-wing and right-wing parties have done well in local and European parliamentary elections.

Cyprus, Greece, Ireland, Portugal, and Spain have received multi-billion euro aid packages financed by their eurozone partners and the International Monetary Fund (IMF). European leaders are desperately seeking a way to keep the eurozone together without addressing the root causes of the crisis. The aid recipients have adopted stringent austerity measures in exchange for the aid, but their populations are opposed to any spending cuts.

Although the eurozone grew enough to exit its recession by the second quarter of 2013, economic activity is still well below the 2008 peak. Nor has 2013’s meager economic growth translated into more jobs. Unemployment across the 18-country bloc stands at 12 percent. At nearly 27 percent, Greece has the highest unemployment rate in the EU, and youth unemployment is nearly 57 percent. Spain’s unemployment numbers are nearly identical to those of Greece. Cyprus—a major offshore banking center for Russian cash—is still reeling from the effects of its 2013 bank solvency crisis. Some members of the eurozone, such as Greece, are still on the verge of a sovereign default, while a few, such as the three Baltic States, have bucked the trend and are enjoying vibrant economic growth.

The potential impact of the current eurozone crisis on the U.S. makes European economic stability more important than ever. The eurozone crisis could turn into a security crisis. For example, any instability or civil unrest resulting from Greece defaulting or leaving the eurozone could spill over into the Balkans. While nobody can predict the security effects of the current eurozone crisis, the very real potential for such a scenario highlights the importance of regional security matters and the potential impact such crises would have on broader U.S. national interests.

The economic case also illustrates the importance of the greater European region to energy security and the free flow of trade. Some of the most important energy security and trade corridors are on the periphery of Europe—as are some of the world’s most dangerous and unstable regions. European economies depend on oil and gas transported through the volatile Caucasus and several maritime choke points.

Located in the southern Caucasus, Georgia sits at a crucial geographical and cultural crossroads that for centuries has proven strategically important for military and economic reasons. Today, Georgia’s strategic location is also important to the U.S.

In 2010, the deteriorating security situation in Pakistan forced the U.S. and NATO to look toward Russia for transit options to keep U.S. and NATO forces sustained in Afghanistan. As a result of Russia’s recent invasion of Ukraine and annexation of Crimea, Moscow might not be willing to maintain these transit routes. Georgia has offered its territory, infrastructure, and logistical capabilities for the transit of NATO forces and cargo as a substitute for the Russian route. Georgia is also modernizing key airports and port facilities, and a major railway project, Azerbaijan to Turkey via Georgia, is due to be completed later in 2015.5 The transit route through Georgia provides one of the shortest and potentially most cost-effective routes to Afghanistan and has the potential to play a crucial role in NATO’s eventual withdrawal from Afghanistan. Most important, it would reduce NATO’s dependence on Russia with regard to resource movement in and out of Afghanistan.

Important Alliances and Bilateral Relations in Europe

The United States has a number of important multilateral and bilateral relationships in Europe. First and foremost among these relationships is NATO, the most important, and arguably the most successful, defense alliance in the world. There are other relationships, however, that also have a strong impact on the U.S.’s ability to operate in and through the European region.
United Kingdom. America’s most important bilateral relationship in Europe is with the United Kingdom. Culturally, both countries value liberal democracy, a free-market economy, and human rights at a time when many nations around the world are rejecting those values. The U.S. and the U.K. also face the same global security challenges: a resurgent Russia, continued international terrorism, increasing cyber attacks, nuclear proliferation in Iran, and growing instability in the Middle East resulting from 2011’s popular uprisings throughout the region.

Winston Churchill, in his famous 1946 “Sinews of Peace” speech—now better known as his Iron Curtain speech—described the Anglo–American relationship as one that is based, first and foremost, on defense and military cooperation. From intelligence sharing to the transfer of nuclear technology, a high degree of military cooperation has helped make the Special Relationship between the U.S. and the U.K. unique.

The North Atlantic Treaty Organization. NATO is an intergovernmental, multilateral security organization originally designed to defend Western Europe from the Soviet Union. It is the organization that anchored the U.S. firmly in Europe, solidified Western resolve during the Cold War, and rallied European support following the terrorist attacks on 9/11. During the Cold War, the threat from the Soviet Union meant that NATO had a clearly defined mission. Today, NATO is still trying to determine its precise role in the post–Cold War world. The 1990s saw NATO launch security and peacekeeping operations in the Balkans when the European Union was unable to act. Since 2002, NATO has been engaged in Afghanistan, counter-piracy operations off the Horn of Africa, and an intervention in Libya that led to the toppling of Muammar Qadhafi.

Since its creation in 1949, NATO has remained the bedrock of transatlantic security cooperation, and it is likely to remain this way for the foreseeable future. As the NATO-led combat mission in Afghanistan winds down, there is a concern that the organization will lose its way. Despite this concern, there is growing recognition that NATO must return to its raison d’être: collective security.

Even with the Afghan mission ending, there is still plenty for NATO to do in order to defend against 21st-century threats in the North Atlantic region, including preventing nuclear proliferation, defending against cyber-attacks, ensuring energy security, and establishing a comprehensive missile defense system.

Then there is the continuing challenge of Russia. The Russian threat is discussed in more detail in the next chapter; however, it is worth noting that many in NATO view Moscow as a threat. In a way that seemed inconceivable to those in Western Europe in 2013, some Eastern European NATO members now face legitimate security concerns from their neighbor. For those NATO members who lived under the iron fist of the Warsaw Pact or who were outright absorbed into the Soviet Union after World War II, Russia’s bellicose behavior today is seen as a threat to their existence.

Given the broad threat that Russia poses to Europe’s common interests, military-to-military cooperation, interoperability, and overall preparedness for joint warfighting is not uniformly implemented in Europe. For example, day-to-day interaction between U.S. and allied officer corps as well as joint preparedness exercises is far more regular with Western European militaries than with frontier allies in Central Europe. In the event of a national security crisis in Europe, first contact with an adversary is likely to expose America’s lack of fluency with allied warfighting capabilities, doctrines, and operational methods.

Furthermore, NATO needs to shift training in Europe from counterinsurgency operations to collective security operations. For the past several years, training has focused on NATO’s counterinsurgency operations in Afghanistan—and rightly so. As the NATO-led combat mission in Afghanistan winds down, NATO should also get back to carrying out regular training exercises for its NATO Treaty Article 5 mission of collective self-defense against an attack on any NATO member. Regular training exercises are a key element of collective security and ensuring continued defense cooperation.

There are also threats to the territorial integrity of NATO countries of a non-military nature for which the alliance is completely unprepared. The biggest threat to the Baltic States, for example, may not come from Russian tanks rolling into the country but from Russian money, propaganda, establishment of NGOs, and other advocacy groups—all of which undermine the state. Russia’s aggressive actions in Ukraine have proven how effective these asymmetrical methods can be at creating insta-
bility, especially when coupled with conventional power projection.

Regular training exercises with allies in Europe are a vital component of bilateral military-to-military relations with key nations. Additionally, these exercises assure the interoperability and readiness of NATO forces. During the height of the operation in Afghanistan, from 2007–2011, the U.S. trained over 42,000 service members from allied nations using training facilities located in Europe. The contribution of European allies should not be understated. Between 2003 and 2013, more than 250,000 Europeans fought in Afghanistan, and since 2007, 90 percent of non-U.S. forces in the International Security Assistance Force (ISAF) have been European.

Today, the combat training center at Hohenfels, Germany, is one of a very few located outside of the continental United States, and more than 60,000 U.S. and allied personnel train there annually. U.S.–European training exercises further advance U.S. interests by developing links between U.S. allies in Europe and National Guard units back home. In a time when most American service members do not recall World War II or the Cold War, cementing bonds with America’s allies in Europe becomes a vital task. Currently, 21 nations in Europe have a state partner in the U.S. National Guard.

Yet, despite the importance of training with European partners, there is a concern that defense cuts are having a detrimental effect on such exercises. In early 2013, then-commander of European Command, Admiral James Stavridis, told Congress that he was cancelling about 140 security assistance programs with European allies due to sequestration. His successor, General Philip Breedlove, told The Army Times that the U.S. has canceled 45 percent of military-to-military training events with European partners.

In fall 2013, NATO held its Steadfast Jazz 2013 exercise. This was one of the largest NATO joint exercises since the end of the Cold War, and the largest live-fire exercise since 2006. It included over 6,000 personnel from NATO members and non-NATO partners. The U.S. only sent 200 soldiers.

These cuts to training come at a very inopportune time. General Breedlove has described NATO forces as being “at a pinnacle of interoperability.” He further states that sustaining these levels of interoperability requires that NATO “continue to build the capabilities and capacities to be a credible and effective Alliance and we need to sustain our interoperability through rigorous and sustained training, education and exercises.”

In June 2014, the U.S. announced a $1 billion European Reassurance Initiative that is meant to bolster transatlantic security. A portion of the funding will “increase exercises, training, and rotational presence across Europe but especially on the territory of our newer allies.” While the additional funding is a step in the right direction, it is not a long-term solution; the need to sufficiently fund training programs remains unresolved. In fact, funding for this initiative was included in the Overseas Contingency Operation (OCO) budget—generally considered to be a budget for temporary, not permanent, priorities—a fact that did not escape the attention of NATO allies, with the Poles referring to it as “insufficient.”

Quality of Allied Armed Forces in the Region: A Declining Europe Means a Declining NATO

Adequate funding by the U.S. for American forces, and in support of Allied training, is only part of the story. When it comes to effective combined operations, the investments of U.S. partners matter just as much, and it is clear that Europe is not pulling its weight. Spending and investment in defense across Europe has declined since the end of the Cold War. For most EU countries, the political will to deploy troops into harm’s way when doing so is in the national interest has all but evaporated. Indeed, during the recent Libya operation, European countries were running out of munitions. In Mali and the Central African Republic, European countries were having difficulty scraping together mere hundreds of soldiers for training missions and static security operations in a semi-permissive operating environment.

As an intergovernmental security alliance, NATO is only as strong as its member states. Of NATO’s 28 members, 26 are European. European countries collectively have more than two million men and women in uniform, yet by some estimates, only 100,000 of them—a mere 5 percent—have the capability to deploy outside national borders.

Russian actions in Ukraine have spurred a reassessment of spending priorities among some NATO member states. The Czech Republic announced plans to boost defense spending from the current 1.0 percent of gross domestic product (GDP) to 1.4 percent of GDP. Poland, which currently spends 1.95 per-
percent of GDP on defense, is undergoing a $42.7 billion military modernization program to be completed by 2022. In the wake of Russian aggression, Poland announced new spending to finance the purchase of unmanned aerial vehicles on an accelerated timetable for procurement (2016), which should boost the nation past the 2.0 percent benchmark. Norway’s defense budget grew in 2014 by $370 million.

The Baltic States have increased spending as well. Latvia’s Defense Minister Raimonds Vējonis has confirmed plans to boost defense spending from its current 0.9 percent to 2.0 percent by 2020. Lithuania, which currently spends 0.8 percent of GDP on defense, plans to increase defense spending by 0.1 percent a year until the 2.0 percent threshold is met. In Estonia, which already meets the 2.0 percent threshold for NATO member state defense spending, Parliament signed off on plans to increase the defense budget from $524 million in 2014 to $665 million in 2018.

Article 3 of the 1949 North Atlantic Treaty, NATO’s founding document, states that members will, at a minimum, “maintain and develop their individual and collective capacity to resist armed attack.” Only a handful of NATO members can say they are living up to their Article 3 commitment. Defense spending has been decreasing over the years to the point that New York City spends more on policing than 14 NATO members each spend on national defense. Since 2008, Russian defense spending has increased 31 percent while defense spending in Europe has decreased 15 percent.

In 2013, just four of the 28 NATO members—the United States, Estonia, Britain, and Greece—spent the NATO-required 2 percent of GDP on defense. France fell below the 2 percent mark in 2011. Poland is at 1.95 percent. The U.K. is meeting the 2 percent benchmark because of expenditures on combat operations in Afghanistan. However, the current government has committed to the 2 percent benchmark only through the end of the current Parliament, and it is possible that even America’s number one ally will not meet the NATO threshold in 2015.

The lack of defense investment by Europeans has had a direct impact on recent overseas operations. At the height of the combat operations in Afghanistan, many European NATO members were having difficulties deploying just dozens of troops at a time. Many non-NATO EU members barely deployed troops at all. Currently, Ireland has seven troops in Afghanistan, and Austria has three. When Europeans do send troops, many are often restricted by numerous “caveats,” such as no flying at night or no combat patrols beyond a certain distance from a base, that limit their usefulness to the NATO commander.

As a result of this lack of investment, even smaller campaigns like the 2011 operation in Libya floundered. Indeed, what began as a French–U.K.-inspired military operation had to be quickly absorbed into a NATO operation because the Europeans had neither the political will nor the military capability (without the U.S.) to complete the mission. Former Secretary of Defense Robert Gates summed up Europe’s contribution to the Libya operation:

However, while every alliance member voted for the Libya mission, less than half have participated at all, and fewer than a third have been willing to participate in the strike mission. Frankly, many of those allies sitting on the sidelines do so not because they do not want to participate, but simply because they can’t. The military capabilities simply aren’t there.

This lack of capability is mainly the result of a decrease in defense investment by the members of NATO since the end of the Cold War and a lack of political will to use military capability when and where it is needed.

**Germany.** German defense spending as a percentage of GDP rose from 1.2 percent to 1.3 percent in 2013, but an increase in personnel costs and building rents meant a real decline in money for capabilities. In 2013, Germany announced plans to cut its active duty military to 185,000, down from 205,000 in 2011. With the end of conscription in 2011, maintaining an active duty military of 185,000 may prove difficult moving forward. Furthermore, Germany lacks key capabilities such as tactical and strategic airlift. Germany will spend 240 million euros to keep dual-capable Tornado aircraft flying until 2024, an important piece of NATO’s nuclear deterrent. Germany plans to cut procurement and decommission certain specific capabilities, a reality that will fall primarily on its Army and Air Force. Tight defense procurement budgets will not allow for much flexibility in the redesign of existing projects.

The German Bundeswehr is being rebuilt to transform into a smaller, more flexible, and more
professional army from a conscription-based army meant to repulse any attack on the homeland. Former German Defense Minister Thomas de Maizière summed up the rationale behind the changes: “It is more likely the Bundeswehr will in the future be employed in areas of crisis and conflict around the world than in defending the country.”  

Notably, the German military did not participate in the mission in Libya, abstaining from a U.N. vote authorizing a no-fly zone over the country. Germany is reluctant to use its armed forces overseas and only does so after rigorous internal debate.

New German Defense Minister Ursula von der Leyen has called publicly for German participation in future peacekeeping missions and has suggested that she believes Germany’s 2011 vote on the Libya no-fly zone was wrong. Although Germany may enter into more military engagements abroad, it will do so gingerly, punching well below its weight as the economic powerhouse of Europe.

France. France has long been one of the most militarily able NATO members, spending an anticipated 1.9 percent of GDP on defense in 2013. France retains 211 troops in Afghanistan and has 1,600 troops in Mali as a residual force from operations there that began in January 2013. However, a sputtering economy and an enormous debt are having a large impact on French defense. French military spending from 2014–2019 is fixed at 31.5 billion euros a year or approximately 1.5 percent of GDP, according to a military budget law passed at the end of 2013. However, in January 2014, President François Hollande announced plans to cut an additional 50 billion euros from the national budget in 2015–2017. As a result, defense may take an additional 1–2 billion euro annual budget reduction, the threat of which led the chiefs of the French armed forces to jointly threaten to resign in May 2014.

While France remains politically and militarily dedicated to retaining an independent nuclear deterrent, cuts in military personnel and extension of aging equipment will be a reality. A 2013 French white paper on defense calls for reductions in forces, including the elimination of 24,000 jobs from the Ministry of Defense. However, the political and economic importance of the defense industry in France serves as a strong impediment to even deeper cuts though the government is finding ways to reduce defense spending. While the government has demurred from canceling key procurements, it has cut orders, delayed payments, and renegotiated contracts on equipment.

The United Kingdom. In 2010, the U.K. held its first defense review in 12 years. Due to the dire economic situation inherited by the conservative-led coalition government, the U.K. announced defense cuts of close to 7.5 percent. Consequently, the British are cutting the size of their regular Army by 20,000 personnel to 82,000, less than half the size of the U.S. Marine Corps. In addition the Royal Air Force (RAF) and Royal Navy are each cutting an additional 5,000 personnel from their rolls.

In spite of all these cuts, since the 9/11 terrorist attacks, the United Kingdom has, without a doubt, proven itself to be America’s number one military partner. For example, Britain provided 46,000 troops for the 2003 invasion of Iraq. At the height of their commitment, the U.K. deployed 10,000 troops to one of the deadliest parts of Afghanistan—an area that, at its peak, accounted for 20 percent of the country’s total violence—while many other NATO allies operated in the relative safety of the north.

Even with recent defense cuts, the U.K. still maintains the most effective armed forces in European NATO. In recent years, it increased its funding for its highly respected Special Forces. By 2020, the RAF will operate a fleet of F-35s and Typhoons—the latter being upgraded to carry out ground attacks. The RAF recently brought into service a new fleet of air-to-air refuelers, which is particularly noteworthy because of the severe shortage of this capability in Europe. With the U.K., the U.S. produced and jointly operated an intelligence gathering platform, the RC-135 Rivet Joint aircraft, which has already seen service in Mali, Nigeria, and Iraq and is now part of the RAF fleet. The U.K. recently purchased their seventh U.S.-built C-17, but the European A400M is still fraught with delays. It has been reported that the decision to cut C-130s from the force structure might be delayed due to the niche capability this rugged and combat-proven cargo aircraft brings to special operations. The Sentinel R1, an airborne battlefield and ground surveillance aircraft, was originally due to be removed from the force structure in 2015 but will see its service extended.

The Royal Navy’s surface fleet is based on the new Type-45 Destroyer and the older Type 23 Frigate.
The latter is expected to be replaced by the Global Combat Ship sometime in the 2020s. In total, the U.K. operates only 19 frigates and destroyers, which most experts agree is dangerously low for the commitment asked of the Royal Navy. Nevertheless, the Royal Navy still delivers a formidable capability.

The U.K. won’t have an aircraft carrier in service until around 2020 when the first Queen Elizabeth Class carrier enters service. This will be the largest carrier operated in Europe. In total, two of her class will be built, although there is a political debate in the U.K. as to whether the second one will be brought into service, placed into extended readiness, or sold upon completion. Additionally, the Royal Navy is introducing seven Astute-class attack submarines as it phases out its older Trafalgar-class. Crucially, the U.K. maintains a fleet of 13 Mine Counter Measure Vessels (MCMV) that deliver world-leading capability and play an important role in Persian Gulf security contingency planning.

Perhaps the Royal Navy’s most important contribution is its continuous-at-sea, submarine-based nuclear deterrent based on the Vanguard-class ballistic missile submarine and the Trident missile. Currently, there are plans to replace the aging Vanguard-class boats although the final decision will be made after the next general election in 2015.

Current U.S. Military Presence in Europe

At its peak in 1953, the U.S. had approximately 450,000 troops in Europe operating across 1,200 sites due to the Soviet threat to Western Europe. During the early 1990s, as part of the so-called peace dividend following the end of the Cold War, U.S. troop numbers in Europe were slashed. Between 1990 and 1993, the number of U.S. soldiers in Europe decreased from 213,000 to 122,000, but their use actually increased. During that same period, from 1990 to 1993, the U.S. Army in Europe supported 42 deployments that required 95,579 personnel.

Until 2013, the U.S. Army had two heavy BCTs (Brigade Combat Teams) in Europe, the 170th and 172nd BCTs in Germany; one airborne Infantry BCT, the 173rd Airborne Brigade in Italy; and, one Stryker BCT, the 2nd Armored Calvary Regiment in Germany, permanently based in Europe. The deactivation of the 170th BCT took place in October of 2013. In all, this meant that more than 10,000 soldiers were removed from Europe. These two heavy brigades constituted Europe’s primary armored force. Their deactivation left a significant capability gap not only in the U.S. ground forces committed to Europe but in NATO’s capabilities too, a concern noted by the 2005 Overseas Basing Commission, which warned against removing a heavy BCT from Europe.

When the decision was announced in 2012 to bring two brigade combat teams home, the Obama Administration said that the reduction in capability would be offset with a U.S.-based BCT that would, when necessary, rotate forces, normally at the battalion level, to Europe for training missions. This decision unsettled America’s allies because a rotational battalion does not offer the same capability as two BCTs permanently based in Europe. Today, only 67,000 U.S. troops remain permanently based in Europe.

The U.S. is on pace to have only 17 main operating bases left on the continent, primarily in Germany, Italy, the United Kingdom, Turkey, and Spain. The number of U.S. installations in Europe has declined steadily since the Cold War when, for example, in 1990, the U.S. Army alone had more than 850 sites in Europe. Today, the total number for all services is approximately 350. The U.S. has three different types of military installations in the EUCOM area of responsibility:

- **Main operating bases** are the large U.S. military installations with a relatively large number of permanently based troops and well-established infrastructure.
- **Forward-operating sites** are intended for rotational forces rather than permanently based forces. These installations tend to be scalable and adaptable depending on the circumstances.
- **Cooperative security locations** have little or no permanent U.S. military presence and are usually maintained by contractor or host-nation support.

EUCOM’s stated mission is to conduct military operations, international military partnering, and interagency partnering to enhance transatlantic security and defend the United States as part of a forward defensive posture. This mission statement
is supported by a number of focus area objectives. According to the 2014 EUCOM Posture Statement submitted to Congress, the seven focus areas strive to:

- Ensure high readiness and strategic access to execute EUCOM’s contingency plans;
- Preserve strategic partnerships and capabilities forged over the last decade of combat operations;
- Fully support and enable the NATO alliance;
- Work with the interagency partners to counter transnational threats;
- Further develop and strengthen key relationships in the Levant and Mediterranean;
- Rethink strategy decisions in light of recent Russia aggression; and
- Broaden relationships with Central and Eastern alliance members and partners.

EUCOM is supported by four service component commands and one subordinate unified command: U.S. Naval Forces Europe (NAVEUR), U.S. Army Europe (USAREUR), U.S. Air Forces in Europe (USAFE), U.S. Marine Forces Europe (MARFOREUR), and U.S. Special Operations Command Europe (SOCEUR).

- **U.S. Naval Forces Europe.** NAVEUR is responsible for providing overall command, operational control, and coordination for maritime assets in the EUCOM and AFRICOM areas of responsibility. This includes more than 20 million square nautical miles of ocean and more than 67 percent of the Earth’s coastline.

This command is currently provided by the U.S. Sixth Fleet based in Naples and brings critical U.S. maritime combat capability to an important region of the world. Some of the more notable U.S. naval bases in Europe include the Naval Air Station in Sigonella, Italy; the Naval Support Activity Base in Souda Bay, Greece; and the Naval Station at Rota, Spain. Naval Station Rota will soon be home to four capable Aegis-equipped destroyers. In addition, the USS Mount Whitney, a Blue Ridge-class command ship, is permanently based in the region. This ship provides a key command-and-control platform, which was successfully employed during the early days of the recent Libyan operation.

The U.S. Navy also keeps a number of submarines in the area, which contribute to EUCOM’s intelligence, surveillance, and reconnaissance (ISR) capacities. The British Overseas Territory of Gibraltar, for example, frequently hosts U.S. nuclear powered submarines. The U.S. cannot dock nuclear powered submarines in Spain making access to Gibraltar’s Z berths vital. Gibraltar is the best place in the Mediterranean to carry out repair work. Strong U.S.–U.K. military cooperation assists the U.S. in keeping submarine assets integrated into the European theater. Admiral Stavridis has pointed out, “These [submarine] capabilities are increasingly important as the Russian Federation Navy increases the pace, scope and sophistication of its submarine fleet.”

The U.S. Navy also has a fleet of P-3 Maritime Patrol Aircraft and EP-3 Reconnaissance Aircraft operating from U.S. bases in Italy, Greece, Spain, and Turkey. They complement the ISR capabilities of U.S. submarines.

- **U.S. Army Europe.** USAREUR was established in 1952. Then, like today, the U.S. Army formed the bulk of U.S. forces in Europe. At the height of the Cold War, 277,000 soldiers and thousands of tanks, armored personnel carriers, and tactical nuclear weapons were positioned at the Army’s European bases. USAREUR also contributed to U.S. operations in the broader region, such as the U.S. intervention in Lebanon in 1985, when it deployed 8,000 soldiers for four months from bases in Europe. In the 1990s, after the fall of the Berlin Wall, USAREUR continued to play a vital role in promoting U.S. interests in the region, especially in the Balkans.

USAREUR was headquartered in Heidelberg but completed the process of moving to Wiesbaden, Germany, in October 2014. The core of USAREUR is formed around two brigade combat teams and an aviation brigade located in Germany and Italy. In addition, the U.S. Army’s 21st Theater Sustainment Command has helped the U.S. military pres-
ence in Europe become an important logistics hub in support of Central Command. In 2012, 20 percent of USAREUR’s forces were deployed to support U.S. Central Command and ISAF.\textsuperscript{44}

- **U.S. Air Forces in Europe.** USAFE provides a forward-based air capability that can support a wide range of contingency operations ranging from direct combat operations in Afghanistan and Libya to humanitarian assistance in Tunisia and Israel. USAFE originated as the 8th Air Force in 1942 and flew strategic bombing missions over the European continent during World War II. In August 1945, the 8th Air Force was redesignated USAFE with 17,000 airplanes and 450,000 personnel. Today, USAFE has eight main operating bases along with 114 geographically separated locations. The main operating bases are the RAF bases Lakenheath, Mildenhall, and Alconbury in the U.K.; Ramstein and Spangdahlem Air Bases in Germany; Lajes Field in the Azores; Incirlik Air Base in Turkey; and Aviano Air Base in Italy. Approximately 39,000\textsuperscript{45} active-duty, reserve, and civilian personnel are assigned to USAFE.

USAFE supports operations around the world. In fiscal year 2012, elements of USAFE flew more than 37,500 hours in support of ongoing military operations in the European theater and globally.\textsuperscript{46} The airbases in Europe were particularly effective in enabling a timely response to the Libya crisis. The forward presence of U.S. Air Force assets in Europe also allows U.S. leaders to respond quickly to emerging humanitarian crises. For example, in 2011, USAFE delivered nine tons of aid to Tunisia within 48 hours and rapidly provided aid to Turkey after the devastating magnitude 7.2 earthquake in October 2011.

- **U.S. Marine Forces Europe.** MARFOREUR was established in 1980. It was originally a “designate” component command, meaning that it was only a shell during peacetime, but could bolster its forces during wartime. Its initial staff was 40 personnel based in London. By 1989, it had more than 180 Marines in 45 separate locations in 19 countries throughout the European theater. Today, the command is based in Boeblingen, Germany, and has approximately 1,500 Marines\textsuperscript{47} assigned to support EUCOM, NATO, and other operations, such as Operation Enduring Freedom. It was also dual-hatted as the Marine Corps Forces, Africa (MARFORAF) under Africa Command in 2008.

In the past, MARFOREUR has supported U.S. Marine units deployed in the Balkans and the Middle East. MARFOREUR also supports the Norway Air Landed Marine Air Ground Task Force, the Marine Corps’ only land-based pre-positioned stock. The Marine Corps has enough pre-positioned stock in Norway to support a force of 13,000 marines for 30 days, and the Norwegian government covers half of the costs of the pre-positioned storage. The pre-positioned stock’s proximity to the Arctic region makes it of particular geostrategic importance.

- **U.S. Special Operations Command Europe.** SOCEUR is the only subordinate unified command under EUCOM. Its origins are in the Support Operations Command Europe, and it was initially based in Paris. This headquarters provided peacetime planning and operational control of special operations forces during unconventional warfare in EUCOM’s area of responsibility. In 1955, the headquarters was reconfigured as a joint task force, and it was renamed Support Operations Task Force Europe (SOTFE) and later Special Operations Task Force Europe. When French President Charles de Gaulle forced American troops out of France in 1966, SOTFE relocated to its current headquarters in Panzer Kaserne near Stuttgart, Germany, in 1967. It also operates out of RAF Mildenhall. In 1982, it was redesignated for a fourth time as U.S. Special Operations Command Europe.

Due to the sensitive nature of special operations, publicly available information is scarce. However, it has been documented that SOCEUR elements participated in various capacity-building missions and civilian evacuation operations in Africa; took an active role in the Balkans in the mid-1990s and in combat operations in the Iraq and Afghanistan wars; and, most recently, supported AFRICOM’s Operation Odyssey Dawn in Libya. SOCEUR also plays an important role in joint training with European allies. In 2011, during the height of operations in Afghanistan, SOCEUR
carried out 67 training events with European allies on various degrees and scales. This scale of training with European allies could not be replicated by rotational forces.

Perhaps resulting more from geography than its shared history, EUCOM has played an important role in supporting other combatant commands, such as CENTCOM and AFRICOM. Admiral James Stavridis, then EUCOM’s commander, recently told the Senate:

I think there is still good value in a presence in Europe because of the geographic importance. It’s not just Europe. It supports Carter Ham in Africa. It supports Jim Mattis in CENTCOM. It’s a strategic platform that allows us access in and around the region.48

In addition to CENTCOM and AFRICOM, U.S. troops in Europe have also worked closely with U.S. Cyber Command (CYBERCOM) to implement Department of Defense cyber policy in Europe and to bolster the cyber defense capabilities of America’s European partners. This work has included hosting a number of cyber-related conferences and joint exercises with European partners. Furthermore, EUCOM has supported CYBERCOM’s work inside NATO by becoming a full member in the NATO Cooperative Cyber Defense Center of Excellence in Tallinn, Estonia.

NATO’s cyber defense capability is only as strong as its weakest member state. Considering that NATO members Estonia, Latvia, Lithuania, and NATO ally Georgia have been targeted by cyber attacks, U.S. interests are best served by ensuring that EUCOM and CYBERCOM work closely with NATO on this issue.

U.S. Nuclear Weapons in Europe

In addition to the French and British nuclear capabilities, the U.S. maintains tactical nuclear weapons in Europe. Until the end of the Cold War, the U.S. is believed to have maintained around 2,500 nuclear warheads in Europe. Unofficial estimates put the current figure at between 150 and 200 warheads, based in Italy, Turkey, Germany, Belgium, and the Netherlands.49 All of these weapons are free-fall gravity bombs designed for use with U.S. and allied dual-capable aircraft.

Russia remains a potent nuclear weapons power, which should concern both the U.S. and Europe. Encouraged by the Obama Administration’s policy of reducing the U.S. nuclear weapons inventory, some in NATO have suggested that American tactical nuclear weapons in Europe are a Cold War anachronism and should be removed from the continent. Inside the alliance, there has been an ongoing debate on the future of these weapons. This debate has been carried out under the auspices of NATO’s Deterrence and Defense Posture Review (DDPR).

The U.S. needs to ensure that tactical nuclear weapons remain part of the alliance’s nuclear strategy—an important and often overlooked part of alliance burden sharing. NATO’s 2010 Strategic Concept stated that “the supreme guarantee of the security of the Allies is provided by the strategic nuclear forces of the Alliance.”50 NATO should remain a nuclear alliance.

Most U.S. equipment and bases in Europe remain in Western Europe. This historical legacy is problematic, as American military assets in Europe would have a greater deterrence impact if they were stationed further east. Furthermore, moving U.S. military assets east in any potential future altercation in NATO’s east will present logistical challenges.

Key Infrastructure and Warfighting Capabilities

Perhaps one of the major advantages to having U.S. forces in Europe is the access it provides to logistical infrastructure. For example, EUCOM supports the U.S. Transportation Command (TRANSCOM) with its array of airbases and access to ports throughout Europe.

EUCOM supports TRANSCOM with work on the Northern Distribution Network (NDN), which supplies U.S. troops in Afghanistan. In 2011, when the security situation in Pakistan did not allow passage for NATO supplies, EUCOM’s Deployment and Distribution Operations Center moved 21,574 containers and 32,206 tons of equipment through Europe to Afghanistan over the NDN. The NDN’s success was a game changer in Afghanistan. EUCOM could not support these TRANSCOM initiatives without the infrastructure and relationships established by the permanent U.S. military presence in Europe.

Europe is a mature and advanced operating environment. America’s decades-long presence in Europe means that the U.S. has tried and tested sys-
tems that involve moving large numbers of materiel and personnel into, inside, and out of the continent. This offers an operating environment second to none in terms of logistical capability. For example, there are more than 166,000 miles of rail line in Europe (not including Russia) and an estimated 90 percent of roads in Europe are paved. The U.S. enjoys access to a wide array of airfields and ports. Major ports the U.S. military uses in Europe include Rotterdam, The Netherlands; Bremerhaven, Germany; and Livorno, Italy. The Rhine River also offers access into the heartland of Europe. As mentioned earlier, the U.S. also operates, or has access to, a number of key airfields across the continent.

Europe is now more important than ever for U.S. operations in Afghanistan. More than 95 percent of U.S.-based units moving to Iraq and Afghanistan transit the U.S. EUCOM area of responsibility (AOR). In 2013, the government in Kyrgyzstan decided not to renew a U.S. lease on Manas Air Force base, which served as a logistical hub for the war in Afghanistan. The U.S. found a replacement with Mihail Kogălniceanu Air Base in Romania, which is now the primary hub for U.S. forces entering and exiting the Afghan theater.

More often than not, the security interests of the United States will coincide with that of its European allies. This means that access to bases and logistical infrastructure is usually guaranteed. However, there were times when certain European countries did not allow access to their territory for U.S. military operations.

In 1986, U.S. intelligence connected the terrorist bombing of a nightclub in West Germany to the Libyan government and responded with an air strike. Consequently, on April 15, 1986, the U.S. Air Force in Europe struck a number of Libyan military assets in retaliation. Because France, Spain, and Italy prohibited use of their airspace due to domestic political concerns, the U.S. aircraft flew around the Iberian Peninsula, which required multiple in-flight refuelings.

In 2003, on the eve of the U.S. invasion of Iraq, the Turkish Parliament voted to prevent the U.S. from using Turkish territory to open a northern front. Thankfully, the U.S. had access to excellent logistical infrastructure in Italy. The 173rd Airborne Brigade had moved all its equipment by rail to the port of Livorno for movement to Kuwait by sea. Despite the Turkish decision to refuse use of its country for offensive operations, the brigade was still able to rapidly move it all back by rail to Aviano Air Base so that it could be parachuted into Northern Iraq.

Some of the world’s most important shipping lanes are also in the region. In fact, the world’s busiest shipping lane is the English Channel, which sees 500 ships a day transit through, not including small boats and pleasure craft. Approximately 90 percent of the world’s trade travels by sea. With the high volume of maritime traffic in the European region, no U.S. or NATO military operation can be undertaken without consideration of how these shipping lanes offer opportunity—and risk—to America and her allies. In addition to the English Channel, other important shipping routes in Europe include the Strait of Gibraltar, the Turkish Straits (including the Dardanelles and the Bosphorus), the Northern Sea Route, and the Danish Straits.

**Strait of Gibraltar.** The Strait of Gibraltar connects the Mediterranean Sea with the Atlantic Ocean and separates North Africa from Gibraltar and Spain on the southernmost point of the Iberian Peninsula. The strait is about 40 miles long and at its narrowest point approximately 8 miles wide. More than 200 cargo vessels pass through the Strait of Gibraltar every day carrying cargoes between Asia, Europe, Africa, and the Americas. Its proximity to North Africa, combined with the narrowness of the strait, has presented security challenges for U.S. and allied warships. In 2002, Moroccan security forces foiled a plot by al-Qaeda to attack U.S. and U.K. naval ships in the Strait of Gibraltar using the same tactics that had been used in the USS Cole attack.

**The Turkish Straits (including the Dardanelles and the Bosphorus).** These straits are long and narrow, 40 and 16 miles long, respectively, with the narrowest point in the Bosphorus, which connects the Black Sea with the Sea of Marmara, only 765 yards in width. Approximately 46,000 ships each year transit the strait, including more than 5,600 tankers. The 1936 Montreux Convention gave Turkey control over the Bosphorus and placed limitations on the number, transit time, and tonnage of naval ships from non-Black Sea countries that can use the strait and operate in the Black Sea. This places limitations on U.S. Navy operation in the Black Sea.

**The Northern Sea Route.** As ice dissipates during the summer months, new shipping lanes offer additional trade opportunities in the Arctic. As mentioned earlier, the Northern Sea Route along the Russian coast reduces a trip from Hamburg to Shanghai.
by almost 4,000 miles, cuts a week off delivery times, and saves approximately $650,000 in fuel costs per ship. However, the full potential of the Northern Sea Route is far into the future. In 2013, only 71 ships made the journey.57

The Danish Straits. Consisting of three channels connecting the Baltic Sea to the North Sea via the Kattegat and Skagerrak seas the Danish Straits are particularly important to the Baltic Sea nations as a way to import and export goods. This is especially true for Russia, which has increasingly been shifting its crude oil exports to Europe through its Baltic ports.58 Approximately 125,000 ships per year transit these straits.59

The biggest danger to infrastructure assets in Europe pertains to any potential NATO conflict with Russia in one or more of NATO’s eastern states. In such a scenario, infrastructure would be heavily targeted in order to deny or delay the alliance’s ability to move significant manpower, materiel, and equipment necessary to retake any territory lost during an initial attack. In such a scenario, the shortcomings of NATO’s force posture would become obvious.

Conclusion

For the most part the European region is a stable, mature, and friendly operating environment. The main security and political challenges in the region lay with the unfinished business in the Balkans or on Europe’s periphery in the Southern Caucasus and Russia. The Arctic remains peaceful and the threat of armed conflict is low, but Russian designs on the region might someday threaten its stability.

America’s closest and oldest allies are located in Europe. The region is incredibly important to the U.S. for economic reasons. Perhaps most important, the U.S. has treaty obligations, through NATO, to defend the 26 European members of that alliance. This is especially important as Russia becomes more assertive in Central and Eastern Europe.

The biggest challenges facing the U.S. in the European region do not come from inside Europe but from around Europe. From North Africa, across the Levant, through the Caucasus and Russia, and into the Arctic, there is a region of unpredictability if not instability. If the U.S. needs to act in the region, or use the region to act nearby, there is a history of interoperability with allies and access to key logistical infrastructure that places the operating environment in Europe in more favorable terms than other regions in which U.S. forces might have to operate. However, the European nations’ diminishment of their military forces poses a substantial threat to all of this. The U.S. must continue to press its partners in Europe to invest properly in defense. Although there is nothing the U.S. can say or do to force Europeans to spend more on defense, silence from Washington, D.C., on this issue might be perceived as tacit approval to decrease defense spending.

Scoring the European Operating Environment

As noted at the beginning of this section, there are various aspects of regions within which the U.S. may have to conduct military operations to defend its vital national interests against threats. Our assessment of the operating environment utilized a five-point scale, ranging from “very poor” to “excellent” conditions and covering four regional characteristics of greatest relevance to the conduct of military operations:

1. Very Poor: Significant hurdles exist for military operations. Physical infrastructure is insufficient or nonexistent, and the region is politically unstable. In addition, the U.S. military is poorly placed or absent, and alliances are nonexistent or diffuse.

2. Unfavorable: A challenging operating environment is marked by inadequate infrastructure, weak alliances, and recurring political instability. The U.S. military is inadequately placed in the region.

3. Moderate: The operating environment is neutral to moderately favorable, with adequate infrastructure, a moderate alliance structure, and acceptable levels of political stability in the region. The U.S. military is adequately placed.

4. Favorable: The operating environment includes good infrastructure, strong alliances, and a stable political environment. The U.S. military is well placed in the region for future operations.
5. **Excellent:** The region has a well-established and well-maintained infrastructure, strong and capable allies, and a stable political environment. The U.S. military is exceptionally well placed to defend U.S. interests.

The key regional characteristics consist of:

a. **Alliances.** Alliances are important for interoperability and collective defense as allies would be more likely to lend support to U.S. military operations. There are various indicators that give insight into the strength or health of an alliance. These include whether the U.S. trains regularly with countries in the region and has good interoperability with the forces of an ally, and whether the U.S. shares intelligence with nations in the region.

b. **Political Stability.** Political stability brings predictability for military planners when considering transit, basing, and overflight rights for U.S. military operations. Relevant considerations include whether overall political stability indicates that U.S. military actions would be hindered or enabled, whether transfers of power in the region generally are peaceful, and whether there have been any recent instances of political instability in the region.

c. **U.S. Military Positioning.** Having military forces based or equipment and supplies staged in a region greatly facilitates the United States’ ability to respond to crises and, presumably, achieve successes in critical “first battles” more quickly. Being routinely present in a region also assists in maintaining familiarity with its characteristics and the various actors who might try to assist or thwart U.S. actions. With this in mind, we assessed whether or not the U.S. military was well-positioned in the region. Again, indicators included bases, troop presence, pre-positioned equipment, and recent examples of military operations (including training and humanitarian) launched from the region.

d. **Infrastructure.** Modern, reliable, and suitable infrastructure is essential to military operations. Airfields, ports, rail lines, canals, and paved roads enable the U.S. to stage and launch operations and logistically sustain combat operations. We combined expert knowledge of regions with publicly available information on critical infrastructure to arrive at our overall assessment of this metric. For Europe, we arrived at these average scores (rounded to the nearest whole number):

   - Alliances: 3.6 (4) – Favorable
   - Political Stability: 4.2 (4) – Favorable
   - U.S. Military Positioning: 2.8 (3) – Moderate
   - Infrastructure: 4.2 (4) – Favorable

Leading to a regional score of: **Favorable**

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### Operating Environment: Europe

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Middle East

The Middle East—strategically situated at the intersection of Europe, Asia, and Africa—has been an important focus for U.S. foreign policy for the past four decades. U.S. security relationships in the region are built on pragmatism, shared security concerns, and armament deals worth billions of dollars annually. The U.S. also maintains a long-term interest in the Middle East related to the region’s economic importance as the world’s primary source of oil and gas.

The region is home to a wide array of cultures, religions, and ethnic groups, including sizable populations of Arabs, Jews, Kurds, Persians, and Turks, among others. The region is home to the three Abrahamic religions of Judaism, Christianity, and Islam, in addition to many smaller religions like the Bahá’í, Druze, Yazidi, and Zoroastrian faiths. It contains many predominantly Muslim countries as well as the world’s only Jewish state.

The Middle East is a deeply sectarian region. These longstanding sectarian divisions, exacerbated by religious extremists vying for power, are important aspects of many of the challenges faced today in the region. In some cases, these sectarian divides go back centuries. Contemporary conflicts, however, have less to do with these histories than with modern extremist ideologies and the fact that modern-day borders in the region often do not reflect the cultural, ethnic, or religious realities. The borders in the region today are the results of decisions taken by the British, French, and other powers during and soon after World War I as they dismantled the Ottoman Empire.61

In a way not understood by many in the West, religion remains a prominent, if not predominant, fact of life for the modern Middle East. At the heart of many of the region’s conflicts is the struggle within Islam between Sunnis and Shias. This struggle dates back to the death of the prophet Muhammad in 632 AD.62 The Sunni Muslims, who form the majority of the world’s Muslim population, hold power in most of the Arab countries in the Middle East.

But to see the current instability in the Middle East through the lens of a Sunni–Shia conflict does not show the full picture. The cultural and historical division between Persians and Arabs has reinforced the Sunni–Shia split. This Sunni Arab distrust of Persian/Shia Iran, compounded by clashing national and ideological interests, has fueled instability in Bahrain, Iraq, Lebanon, and Syria.

In addition to cultural and religious differences, current regional demographic trends also are destabilizing factors. The Middle East contains one of the world’s youngest and fastest-growing populations. In most of the West, this would be viewed as an advantage, but not in the Middle East. Known as “youth bulges,” these demographic tsunamis have overwhelmed the inadequate political, economic, and educational infrastructures in many countries in the region. The lack of access to education, jobs, and meaningful political participation fuels discontent. As over 40 percent of regional inhabitants are between the ages of 15 and 29, this demographic bulge will continue to have a substantial effect on political stability across the region.63
The Middle East contains more than half the world’s global oil reserves and is the chief oil-exporting region in the world. As the biggest oil consumer in the world, the U.S. has a vested interest in maintaining the free flow of oil and gas from the region. This is true even though the U.S. actually imports relatively little of its oil from the region. Oil is a fungible commodity, and the U.S. economy remains vulnerable to sudden spikes in world oil prices.

Also, many U.S. allies are dependent on Middle East oil and gas so there is a second-order effect to the U.S. if supply from the Middle East is reduced or compromised. For example, U.S. ally Japan (the world’s 3rd largest economy) is the world’s largest liquefied natural gas (LNG) importer and, on average, an LNG ship enters Tokyo harbor every 20 hours. Qatar is the second largest supplier of LNG to Japan. Another U.S. ally in Asia, South Korea (the world’s 14th largest economy), is dependent on the Middle East for 87 percent of its crude oil imports (as of 2013). The U.S. might not be dependent on Middle East oil or LNG but the economic consequences arising from a major disruption to supplies would ripple across the globe.

The Middle East is also growing financial and logistics hubs along some of the busiest transcontinental trade routes in the world. One of the region’s economic bright spots in terms of trade and commerce is found in the Persian Gulf. The emirates of Dubai and Abu Dhabi in the United Arab Emirates (UAE), along with Qatar, are competing to become the top financial center in the region. Like the rest of the world, the Middle East was hit by the global financial crisis of 2008 and subsequent recession, but many oil-exporting countries have made an economic recovery due to high oil prices. Even so, the Middle East is full of economic extremes, for example:

- Qatar is the world’s wealthiest country in terms of GDP per capita while Yemen, a mere 700 miles away (roughly the distance between New York City and Atlanta) ranks 151st in the world.

- Saudi Arabia has 265 billion barrels of proven oil reserves. It shares a nearly 500-mile-long border with Jordan, but Jordan has just 1 million barrels of proven oil reserves.

- According to the 2014 Index of Economic Freedom, published by The Heritage Foundation and The Wall Street Journal, Bahrain ranks 13th in the world in terms of economic freedom while Iran ranks 173rd.

These disparities are worsened by government corruption across most of the region, which not only squanders economic resources, but also restricts economic competition and hinders the development of free enterprise.

The economic situation, in part, drives the political environment in the region. The lack of economic freedom was an important factor leading to the Arab Spring uprisings. The uprisings have disrupted economic activity, depressed foreign and domestic investment, and slowed economic growth. This was the case when international investors started to shun unstable Bahrain, rocked hard by the Arab Spring protests, for the stability of the UAE in 2011.

The political environment has a direct bearing on how easily the U.S. military can operate in a region. In many Middle Eastern countries, the political situation remains fraught with uncertainty. The Arab Spring uprisings that began in early 2011 have formed a regional sandstorm that has eroded the foundations of many authoritarian regimes, erased borders, and destabilized many countries in the region. Even so, the popular uprisings in Tunisia, Libya, Egypt, Bahrain, Syria, and Yemen have not ushered in a new era of democracy and liberal rule, as many in the West were hoping. At best, these uprisings made slow progress toward democratic reform. At worst, these uprisings boosted political instability, exacerbated economic problems, and contributed to the rise of Islamist extremists.

The region is not short of security challenges for the U.S. and its allies. Iran uses Shia-Sunni sectarian divisions to exploit instability in neighboring Arab states and in Afghanistan. Tehran has exacerbated Shia-Sunni tensions to increase its influence over embattled regimes in the region. Tehran attempts to run an unconventional empire by exerting great influence over sub-state entities like Hamas (Palestinian territories), Hezbollah (Lebanon), Mahdi movement (Iraq), Asa’ib Ahl al-Haq, and the Houthi insurgents (Yemen). In Afghanistan, Tehran exerts influence over the Shiite Hazara population, which was persecuted under the Taliban. Iran also provided arms to the Taliban after it was ousted from
power by a U.S.-led coalition. The Afghan city of Herat, near the Iranian border, has long been considered by Tehran to be part of its sphere of influence.

Iran has continued its military buildup, including ballistic missiles that pose a growing threat to Israel and at least four NATO allies in southwestern Europe—not to mention the tens of thousands of U.S. troops based in the region. Tehran also has threatened to disrupt the flow of oil and LNG from the Persian Gulf if it becomes embroiled in a war against the U.S. or Israel.

In Syria, the Assad regime’s brutal repression of the peaceful demonstrations in early 2011 ignited a fierce civil war that has led to the deaths of more than 190,000 people and displaced about 2.5 million refugees in neighboring Turkey, Lebanon, Jordan, and Iraq. Another 6.5 million are internally displaced within Syria. The destabilizing spillover effect of this civil war in the region is obvious. In Jordan, where King Abdullah’s regime has been buffeted by Arab Spring protests and adverse economic trends, almost 10 percent of the population is now Syrian. This has placed even more strain on Jordan’s small economy, scarce water resources, and limited social services, creating rising resentment among the local population.

Thanks to the power vacuum created by the ongoing civil war in Syria, Islamist extremist groups, including the al-Qaeda affiliated al-Nusra Front and the self-styled Islamic State (IS), formerly known as ISIS or ISIL and prior to that as al-Qaeda in Iraq, have carved out extensive sanctuaries where they are training militants from a wide variety of other Arab countries, Europe, and even the United States.

In late 2013, the IS exploited the Shia-dominated government’s heavy-handed alienation, marginalization, and repression of the Sunni Arab minority in Iraq to move back across the border to seize territory in Iraq. By June 2014, the IS spearheaded a broad Sunni uprising against Baghdad that expelled Iraqi security forces from areas predominantly populated by Sunni Arabs in northwestern Iraq, including Mosul, Iraq’s second largest city. In Syria and Iraq, the IS now controls an area the size of Maryland. The peshmerga militia of the Kurdistan Regional Government, an autonomous area in northeastern Iraq, took advantage of the chaos caused by the collapse of the Iraqi security forces and occupied the city of Kirkuk—long considered by Kurds to be rightfully theirs—a claim long denied by the central government in Baghdad. The IS continues to attack the Shia-dominated government in Baghdad, massacre Shia civilians and Sunnis that disagree with it, and terrorize religious and ethnic minorities in northern Iraq including the Christian community, ethnic Turkmen, and Yazidis.

Arab–Israeli tensions are another source of instability in the Middle East region. The repeated breakdown of Israeli–Palestinian peace negotiations and the ascension of the Hamas regime in Gaza in a 2007 coup have created an even more antagonistic situation. Hamas, the Palestinian branch of the Muslim Brotherhood, seeks to transform the conflict from a national struggle over sovereignty and territory into a religious conflict in which compromise is denounced as blasphemy. Hamas invokes jihad in its struggle against Israel and seeks to destroy the Jewish state and reject it with an Islamic state.

Although elected to power with 44 percent of the vote in the 2006 elections, Hamas has since forced its radical agenda on the people of Gaza, which, in turn, has eroded its public support and led to a high degree of needless suffering. Hamas has provoked wars with Israel in 2008, 2009, 2012, and 2014. It continues to pose threats to Israel and to Arab leaders who have signed peace agreements with Israel (Egypt, Jordan, and the Palestinian Authority). As long as Hamas remains imbued with its Islamist extremist ideology, which advocates the destruction of Israel, and retains a stranglehold over Gaza, a sustainable Israeli–Palestinian peace agreement is impossible.

**Important Alliances and Bilateral Relations in the Middle East**

The U.S. has strong military, security, intelligence, and diplomatic ties with multiple Middle Eastern nations, including Israel, Egypt, Jordan, and the members of the Gulf Cooperation Council (GCC). Since the historical and political circumstances that led to the creation of NATO have largely been absent in the Middle East, the region lacks a similar collective security organization. Middle Eastern countries have traditionally preferred to have bilateral relationships with the U.S. and have shunned multilateral arrangements due to the lack of trust between Arab States.

Often, bilateral relationships between Arab Middle Eastern countries and Western countries, including the U.S., are secretive. The opaqueness of
these relationships sometimes creates problems for the U.S. when trying to coordinate defense and security cooperation with European allies active in the region (mainly the U.K. and France).

Military training is an important part of these relationships. In 2013 alone, USCENTCOM has conducted 52 multilateral and bilateral training exercises with many of these allies and partners.79 The main motivation behind these exercises is to ensure close and effective coordination with key partners in the region and to train Arab armed forces so they can take a larger share of responsibility for regional security. The U.S. has had mixed results in this area.

Kuwait, Bahrain, the UAE, Saudi Arabia, and Qatar have participated in Combined Task Force-152, formed in 2004 to maintain maritime security in the Persian Gulf—with Bahrain having commanded the task force on two separate occasions.78 Middle Eastern countries have also participated further afield in Afghanistan. Since 2001, Jordan, Egypt, Bahrain, and the UAE have supplied troops to the U.S.-led mission there. During the 2011 NATO-led operation in Libya, U.S. allies Qatar, Jordan, and the UAE participated to varying degrees.

However, there is still a high degree of reluctance in many Arab countries to tackle one of the region’s biggest security problems: the rise of the Islamic State in Syria and Iraq. It is a major source of frustration for U.S. and Western policymakers that these countries often prefer that the U.S. and other Western powers deal with these matters on their behalf.

In addition to military training, U.S. defense relations are underpinned by huge defense equipment deals. Because much of it has been combat tested, U.S. military hardware (and to a lesser extent British and French hardware) is preferred across the region. For example, Kuwait, the UAE, Jordan, and Saudi Arabia have over 400 F-15, F-16, and F-18 jet fighter aircraft combined. In light of the Iranian missile threat, the UAE and Qatar have invested billions of dollars in the Terminal High Altitude Area Defense system. In 2010, the U.S. signed a $60 billion armaments deal—its biggest ever—with Saudi Arabia.75 The use of U.S.-made hardware helps with interoperability and lays the foundation for longer-term engagement and cooperation in the region.

One source of strain in the relationship between the U.S. and its partners in the Middle East is over how best to halt Iran’s nuclear program. There is a concern in Israel and many Arab states that any deal with Tehran will fail to halt its drive for nuclear weapons, instead paving the way for a détente between the U.S. and Iran that will expose U.S. allies to greater threats.76 Many U.S. allies in the region look at the U.S. treatment of Poland and the Czech Republic in 2009 after the abrupt cancellation of Phase-3 of the ballistic missile defense program in Europe—an ill-conceived effort to placate Russia ahead of the so-called Russian reset. Leaders in the Middle East, especially the Gulf, are concerned that they may receive similar treatment if the Administration seeks an accommodation with Iran over its nuclear program.

Israel. America’s most important bilateral relationship in the Middle East is with Israel. Both countries are democracies, value free-market economies, and believe in human rights at a time when many countries in the Middle East reject those values. Israel has been designated as a Major Non-NATO ally (MNNA)77 because of its close ties to the U.S. A sign of Israel’s importance to the United States is the fact that, since 1948, Washington has provided it with approximately $121 billion in foreign aid.78 With support from the United States, Israel has developed one of the world’s most sophisticated air and missile defense networks.79 No significant progress is possible on peace negotiations with the Palestinians or on stabilizing Israel’s volatile neighborhood, without a strong and effective Israeli–American partnership.80

Saudi Arabia. After Israel, the U.S. military relationship is deepest with the Gulf States, including Saudi Arabia, which serves as de facto leader of the GCC. The United States started to play a more active role in the Persian Gulf after the United Kingdom completed the withdrawal of its military presence from bases “east of Suez” in 1971.

The United States’ relationship with Saudi Arabia is based on pragmatism and is important for both security and economic reasons. The Saudis enjoy huge influence across the Muslim world. Roughly two million Muslims participate in the annual Hajj pilgrimage to the holy city of Mecca. Saudi Arabia owns the world’s largest oil reserves and is the world’s foremost oil exporter. The uninterrupted flow of Saudi oil exports is crucial for fueling the global economy.

Riyadh is a key partner in containing Iran, safeguarding the security of its GCC allies, removing Syria’s Assad regime from power, and stabilizing Egypt and Yemen. Saudi Arabia also has played a growing
role in fighting the al-Qaeda terrorist network. Until 2003, Riyadh was in denial about Saudi connections to the 9/11 attacks. However, after Saudi Arabia was targeted by al-Qaeda terrorist attacks on its own soil, the government began to cooperate more extensively in defeating the Islamist terrorists.\textsuperscript{81}

**Gulf Cooperation Council.** The countries of the GCC (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE) are at the epicenter of the Arab–Persian fault line, making them strategically important to the U.S.\textsuperscript{82} The root of the Arab–Iranian tensions in the Gulf is Tehran's ideological drive to export its Islamist revolution and overthrow the traditional rulers of the Arab kingdoms. This ideological clash has further amplified the longstanding sectarian struggle between Shia and Sunni Islam. Tehran has sought to radicalize Shia Arab minority groups to undermine Sunni Arab regimes in Saudi Arabia, Kuwait, and Yemen. It also sought to incite revolts by the Shia majorities in Saddam Hussein's Iraq and in Bahrain, a constitutional monarchy ruled by the Sunni al-Khalifa dynasty.

Culturally, many Iranians look down on the Gulf States, many of which they see as artificial states carved out of the former Persian Empire and propped up by Western powers. Longstanding Iranian territorial claims in the Gulf add to the Arab–Persian tensions in the region.\textsuperscript{83} For example, Iran has long considered Bahrain to be part of its territory. Iran also occupies the small but strategically important islands of Abu Musa, Greater Tunb, and Lesser Tunb near the Strait of Hormuz, which is claimed by the UAE.

The GCC often has problems agreeing on a common policy on matters of security. This reflects the organization's intergovernmental nature and the desire of its members to place national interests above those of the GCC. Perhaps this is best demonstrated in the debates over Iran. On one end of the spectrum, Saudi Arabia, Bahrain, and to a lesser extent, the UAE are hawkish in how they see the threat from Iran. Oman and Qatar, both of which share natural gas fields with Iran, view Iran's activities in the region as being less of a threat and maintain good relations with Tehran. Kuwait tends to fall somewhere in the middle. Inter-GCC relations can also be problematic. The UAE, Bahrain, and Saudi Arabia have been at loggerheads with Qatar regarding the latter's support for the Muslim Brotherhood, which they see as a threat to internal security.

Apart from Bahrain, the countries of the GCC have weathered the political turbulence of the Arab Spring quite well. The citizens in this region enjoy a high standard of living (made possible by millions of foreign workers and the export of oil and LNG), which helps the locals tolerate authoritarian rule. In fact, during the early days of the Arab Spring, the then-Emir of Qatar, Hamad bin Khalifa al-Thani, quickly sided with opposition forces aligned with the Muslim Brotherhood in Libya, Egypt, and Syria to demonstrate he was “on the side of the people.” This helped to ensure that Qatar's ruling elite could be seen as supporting the oppressed masses across the region. Whether true or not, it has helped to stave off public protests in his emirate and boosted the popularity of the monarchy. Bahrain fared the worst of all the GCC states during the 2011 popular uprisings due to persistent Sunni-Shia sectarian tensions worsened by Iranian antagonism and the slow pace of social reform by the al-Khalifa monarchy.

**Egypt.** Egypt is also an important U.S. military ally. Egypt, as one of only two Arab countries (the other being Jordan) that have diplomatic relations with Israel, is closely enmeshed in the Israeli–Palestinian conflict and remains a leading political, diplomatic, and military power in the region.

Relations between the U.S. and Egypt have been made problematic thanks in part to the 2011 downfall of President Hosni Mubarak after 30 years of rule. The Muslim Brotherhood's Mohamed Morsi was elected president in 2012 and used his Islamist-dominated parliament to pass a constitution that advanced an Islamist agenda. Morsi's authoritarian rule, combined with rising popular dissatisfaction with falling living standards, rampant crime, and high unemployment, led to another massive wave of protests in June 2013 that prompted another military coup in July.

The leader of the coup, Field Marshal Abdel Fattah al-Sisi, pledged to restore democracy and, in 2014, was elected president. Egypt's new government faces major political, economic, and security challenges. Egypt's limping economy has been badly damaged by three years of political turbulence and violence that has choked off tourism revenues, deterred foreign investment, and boosted the national debt.

The July 2013 coup against the Muslim Brotherhood-backed Morsi regime strained relations with the Obama Administration and resulted in a temporary hold on U.S. military assistance to Egypt. Cairo
made its displeasure known by buying Russian arms financed by Saudi Arabia in late 2013, but bilateral relations have since improved after Egypt’s military made good on its promises to hold elections and return Egypt to a democratic path.

**Lebanon and Yemen.** The United States also has developed cooperative defense arrangements with the armed forces of Lebanon and Yemen, two states that face substantial threats from Iranian-supported terrorist groups as well as al-Qaeda. The United States has provided arms, equipment, and training for the Lebanese Armed Forces (LAF). Washington’s security relationship with Yemen has grown since the 9/11 attacks. Yemen, Osama bin Laden’s ancestral homeland, faces major security threats from al-Qaeda in the Arabian Peninsula (AQAP), one of the most dangerous al-Qaeda franchises. In recent years, the Pentagon and CIA have worked closely with the Yemeni Ministry of Defense and intelligence services to defeat this mutual threat.

**Quality of Allied Armed Forces in the Middle East**

The quality and capabilities of the allied armed forces in the region is mixed. While some countries spend billions of dollars each year on advanced Western military hardware, others spend very little. Defense spending in the Middle East overall increased by 4 percent in 2013 to an estimated $150 billion. Bahrain’s defense spending increased by 26 percent, while Iraq’s expenditure increased by 27 percent. In 2013, Saudi Arabia spent $67 billion on defense, pushing it ahead of the U.K. and France and placing it fourth in the world in terms of defense spending. Accurate defense spending figures for the Middle East have traditionally been very uncertain, but the lack of data has worsened recently. In 2013, there was no available data for Iran, Qatar, Syria, the United Arab Emirates, and Yemen, according to a report by Stockholm International Peace Research Institute.

Different security factors drive the degree to which Middle Eastern countries train and arm their militaries. For Israel, which defeated Arab coalitions in wars in 1948, 1956, 1967, 1973, and 1982, it now is the threat to Israel’s existence posed by an Iranian regime that has called for Israel to be “wiped from the map.” As a result of Israel’s military buildup, states and non-state actors in the region have invested in asymmetric and unconventional capabilities to offset the imbalance created by Israel’s military superiority. For the Gulf States, the main driver is the military threat coming from Iran, and for Iraq, it is the internal threat posed by insurgents and terrorists that drives defense policy.

The Israel Defense Forces (IDF) are widely considered the most capable military force in the Middle East. On a conventional level, the IDF consistently surpasses other regional military forces; however, other countries, such as Iran, have closed the gap in recent years. Nevertheless, the IDF’s quality and effectiveness are unparalleled with regard to both technical capacity and personnel. This has been recently demonstrated by Israel’s military operations in the Gaza strip: after weeks of conflict, the IDF mobilized over 80,000 reservists, a fact that demonstrates the depth of the Israeli armed forces.

Israel heavily funds its military sector and has a strong national industrial capacity, supported by significant funding from the U.S.; combined, these factors give Israel a regional advantage despite limitations of manpower and size. In particular, the IDF has focused on maintaining its technical superiority in missile defense, intelligence collection, precision weapons, and cyber technologies. The emerging cyber capabilities of Israel are especially important to the state. Cyber technologies are used for a number of purposes, including defending Israeli cyberspace, gathering intelligence, and carrying out attacks. Israel maintains its qualitative superiority in medium and long-range missile capabilities. Israel also fields effective missile defense systems called the Iron Dome and Arrow, both of which the U.S. helped to finance.

Additionally, Israel has a nuclear weapons capability, which it does not publicly acknowledge, that increases its strength relative to other powers in the region. Israel’s nuclear weapons capability has helped to deter adversaries as the conventional capabilities gap has been reduced.

After Israel, the most technologically advanced and militarily capable armed forces are found in the GCC. The export of oil and gas means that there is no shortage of resources to devote to defense spending and the ever-present threat of Iran means there is no shortage of political will to invest in defense. Most staff officers are U.K. or U.S.-educated. Generally speaking, these are the best funded and trained forces in the region after Israel.
Although the GCC has a military arm called the Peninsula Shield Force (PSF), it has had only modest operational success. It has never met its stated ambition of deploying tens of thousands of soldiers. Created in 1984, its main purpose today is to counter Iran’s military buildup and to help maintain security in light of the political turbulence resulting from the Arab Spring. The PSF first deployed a modest force of 3,000 troops to help liberate Kuwait during the first Gulf War. Its most recent deployment was to Bahrain in 2011 to help restore order after Iranian-backed Shiite protests brought the country to a standoff and threatened the monarchy there.99 Internal divisions inside the GCC, especially among Qatar, UAE, and Saudi Arabia, prevented the PSF from playing a more active role in the region.

As with all intergovernmental organizations, the strength of the PSF is derived from the individual members. All GCC members boast advanced defense hardware with a preference for U.S., U.K., and French equipment. Saudi Arabia maintains the most capable military force in the GCC. It has an army force of 75,000 soldiers and a National Guard of 100,000 ground soldiers reporting directly to the King. The army operates 600 main battle tanks including 200 U.S.-made M1A1s. Its air force is built around American and British platforms and consists of more than 300 combat capable aircraft including F-15s, Tornados, and Typhoons.100 These were put to use with limited success in northern Yemen against Houthi rebels in 2009–2010.101 Both Saudi Arabia102 and the UAE103 also keep hundreds of Storm Shadow air-launched cruise missiles (known as Black Shaheen in the UAE) in their inventories. These weapons proved highly effective when the British and French used them during the air campaign over Libya in 2011.

In fact, air power is the strong suit of most GCC members. Oman operates F-15s and is planning to purchase British Typhoons. The UAE operates the F-16E/F “Desert Falcon” which is even more advanced than any variant of the F-16 the U.S. operates.104 Qatar operates French-made Mirage fighters. Both deployed fighters to participate in NATO-led operations in Libya in 2011—although they did not participate in strike operations. The navies of the GCC members rarely deploy beyond their Exclusive Economic Zones, but all members, other than Oman, have participated in regional combined task forces led by the U.S.105

Even with the billions of dollars invested each year by members of the GCC, most are quite happy to continue their dependence on the U.S. for their main security needs. As former U.S. Defense Secretary Robert Gates once noted, the Saudis will “fight the Iranians to the last American.”106

Egypt’s military is the largest force in the Middle East at about 450,000 total personnel.107 It possesses a fully operational military with an army, air force, air defense, navy, and multiple Special Forces units. Until 1979, when the U.S. began to supply Egypt with military equipment, Cairo relied primarily on less capable Soviet military technology.108 Since then, its army and air force have been significantly upgraded with U.S. military weapons, equipment, and warplanes.

Obsolete platforms and poor systems integration constrain Egypt’s Air Force, and although it has large inventories few platforms are advanced or state-of-the-art.109 Additionally, Egypt boasts substantial manpower, but its quality is limited by conscription and an absence of recent combat experience.110

The make-up and authority of the Egyptian Armed Forces are significantly different from those of the Hosni Mubarak era. Instead of a centralized government with substantial control over the various aspects of power, the government became fractured under President Morsi and the military, police, and judiciary predominantly acted independently.111 After the ouster of former President Morsi, the Egyptian Armed Forces reclaimed primary control over the country.112

U.S. influence over Egypt is primarily derived through military aid, which was withheld in some areas after the 2013 military coup.113 This indefinite hold applies to Apache attack helicopters; F-16s, Harpoon ship-to-ship missile systems, and M1A1 tank kits.114 Furthermore, since Egypt relies upon U.S. assistance to combat Islamist militants and terrorists, the ability of the military to effectively contain Islamist terrorists will be undermined without American aid.115 Washington’s withholding of some U.S. military assistance in 2013 prompted Cairo to diversify its sources of arms. In February 2014, Egypt signed a deal to purchase weapons from Russia, including attack helicopters and air-defense systems.116

Jordan is a close U.S. ally with a small but highly effective military force. The force drivers for the Jordanian military are the spillover from fighting...
in Syria and Iraq. While it faces few conventional threats from its neighbors, Jordan’s internal security is being undermined by Islamist extremists returning from fighting in the region who have been emboldened by the growing influence there of al-Qaeda and other Islamist militants. As a result, Jordan’s highly professional armed forces have been focused almost exclusively in recent years on border and internal security. Even so, Jordan’s conventional capability is significant considering its size. The land forces total 75,000 soldiers and include 390 British made Challenger I tanks. The backbone of its air force is the F-16. The Jordanian Special Forces are very capable, having benefitted from extensive U.S. and U.K. training. Jordanian forces have served in Afghanistan and participate in numerous U.N.-led peacekeeping operations.

Current U.S. Military Presence in the Middle East

The United States maintained a minimal military presence in the Middle East before 1980, chiefly a small naval force based in Bahrain since 1958. The U.S. “twin pillar” strategy relied on pre-revolutionary Iran and Saudi Arabia to take the lead in defending the Persian Gulf from the Soviet Union and its allies in Iraq, Syria, and South Yemen. But the 1979 Iranian revolution demolished one pillar, and the 1979 Soviet invasion of Afghanistan boosted the Soviet threat to the Gulf. President Jimmy Carter proclaimed in January 1980 that the United States would take military action to defend oil-rich Persian Gulf States from external aggression, a commitment known as the Carter Doctrine. In 1980, he ordered the creation of the Rapid Deployment Joint Task Force (RDJTF), the precursor to USCENTCOM. In January 1983, USCENTCOM formally succeeded the RDJTF.

Up until the late 1980s, a possible Soviet invasion of Iran was the most significant threat facing the U.S. in the Middle East. After the collapse of the Soviet Union, Saddam Hussein’s Iraqi regime became the chief threat to regional stability, and Iraq invaded Kuwait in August 1990.

The United States responded by assembling an international coalition of more than 30 nations to expel Iraqi forces from Kuwait in January 1991. CENTCOM commanded the U.S. contribution of more than 532,000 military personnel to the coalition armed forces, which totaled at least 737,000. This time period represents the peak of U.S. force deployment in the Middle East region.

Confrontations with Iraq continued throughout the 1990s due to Iraqi violations of the 1991 Gulf War ceasefire. Baghdad’s failure to cooperate with U.N. arms inspectors to verify the destruction of its weapons of mass destruction and its consistent support of terrorism led to the 2003 U.S. invasion of Iraq. During the initial invasion, U.S. forces reached nearly 150,000, joined by military personnel from coalition forces. Apart from the “surge” in 2007, when President Bush sent in an additional 30,000 troops to Baghdad, American combat forces in Iraq fluctuated between 100,000 and 150,000. In December 2011, the U.S. officially completed its withdrawal of troops, leaving only 150 personnel attached to the U.S. embassy in Iraq.

After the withdrawal from Iraq, the U.S. has continued to maintain a limited number of forces in the Middle East. The bulk of these troops are based in GCC countries. In 2014, there were approximately 35,000 U.S. military personnel operating in the Middle East, but the exact disposition is not made public due to political sensitivities in the region.

Information gleaned from open sources shows the following:

- **Kuwait.** There are approximately 15,000 U.S. troops based in Kuwait. These troops are spread among Camp Arifjan, Ahmed Al Jaber Air Base, and Ali Al Salem Air Base.

- **UAE.** According to UAE and U.S. officials, there are about 5,000 U.S. troops, mainly Air Force personnel, stationed at Al Dhafra Air Base. The main mission for U.S. troops in the UAE is to operate refueling and surveillance aircraft. In April 2012, the United States reportedly deployed several F-22 Raptor combat aircraft to Al Dhafra.

- **Oman.** Since 2004, Omani facilities reportedly have not been used for air support operations in either Afghanistan or Iraq, and the numbers of U.S. military personnel in Oman have fallen to about 200, mostly from the U.S. Air Force. The United States reportedly can use—with advance notice and for specified purposes—Oman’s military airfields in Muscat (the capital), Thumrait, and Masirah Island.
Bahrain. The longest serving permanent U.S. military presence in the Middle East is found in Bahrain, and today some 7,000 U.S. military personnel are based there. Bahrain is home to the Naval Support Activity Bahrain and the U.S. Fifth Fleet so the majority of U.S. military personnel are predominantly from the U.S. Navy. In addition, there are a significant number of U.S. Air Force personnel operating out of Shaykh Isa Air Base, where F-16s, F-18s, and P-3 surveillance aircraft are stationed.\textsuperscript{129} The deep-water port of Khalifa bin Salman is one of the few facilities in the Gulf that can accommodate U.S. aircraft carriers.

Saudi Arabia. The U.S. withdrew the bulk of its troops from Saudi Arabia in 2003. Little information on the number of U.S. military personnel currently based there is available. However, elements of the U.S. 379th Air Expeditionary Wing, along with the six-decade-old United States Military Training Mission to the Kingdom of Saudi Arabia, the four-decade-old Office of the Program Manager of the Saudi Arabian National Guard Modernization Program, and the five-year-old Office of the Program Manager–Facilities Security Force are all based in Eskan Village Air Base, approximately 13 miles south of the capital city, Riyadh.\textsuperscript{130}

Qatar. It is thought that thousands of U.S. troops are based in Qatar, mainly from the U.S. Air Force. The U.S. operates its Combined Air Operations Center out of Al Udeid Air Base, which is one of the most important U.S. airbases in the world. Al Udeid Air Base also serves as the forward headquarters of CENTCOM. In addition, the base houses significant pre-positioned equipment for the U.S. military.

Jordan. Although there are no permanent U.S. military bases in Jordan, the U.S. has a long history of conducting training exercises in the country. Due to recent events in neighboring Syria, 1,500 American soldiers, a squadron of F-16s, and a Patriot Missile Battery have been temporarily based in Jordan.\textsuperscript{131}

Iraq. In December 2011, the number of U.S. troops in Iraq was reduced to 150 personnel to protect the U.S. embassy. However, since the invasion of northwestern Iraq by the Islamic State, U.S. troop numbers in the country have gradually been increasing. As of September 2014, there were about 1,600 U.S. troops committed to train, support, and advise Iraqi security forces.\textsuperscript{132}

In addition to permanently based U.S. troops in the Middle East, there have been media reports that the U.S. government operates a secret UAV base in Saudi Arabia from which drone attacks against militants in Yemen are launched.\textsuperscript{133} There are reports of an American base on Socotra Island, which is off the coast of Somalia and belongs to Yemen, being used for counter-terrorism operations off the Horn of Africa and Yemen.\textsuperscript{134}

CENTCOM’s stated mission is to promote cooperation among nations, respond to crises, deter or defeat state and non-state aggression, support economic development, and, when necessary, perform reconstruction in order to establish the conditions for regional security, stability, and prosperity. This mission statement is supported by several focus area objectives. According to the 2014 CENTCOM Posture Statement submitted to Congress, the 10 focus areas are: \textsuperscript{135}

- Responsibly transition Operation Enduring Freedom and support Afghanistan as a regionally integrated, secure, stable, and developing country;
- Prevent the proliferation of weapons of mass destruction and, as directed, disrupt their development and prevent their use;
- Counter negative Iranian influence, while reducing and mitigating the negative impact of proxies;
- Manage and contain the potential consequences of the Syrian civil war and other “fault line” confrontations across the Middle East to prevent the spread of sectarian-fueled radicalism threatening moderates;
- Defeat al-Qaeda, deny violent extremists safe havens and freedom of movement, and limit the reach of terrorists;
- Protect lines of communication, ensure free use of the global commons, and secure unimpeded global access for legal commerce;
• Develop and execute security cooperation programs, leveraging military-to-military relationships that improve bilateral and multilateral partnerships, and build interdependent collective partnered “capacities”;

• Lead and enable the continued development of bilateral and multilateral collective security frameworks that improve information sharing, integrated planning, security, and stability;

• Shape, support, and encourage cross-combatant command, interagency, and partner/coalition programs and approaches, while making the best use of military resources; and,

• Maintain and improve our ready and flexible headquarters, capabilities, protected networks, and forces enabled by required freedom of movement, access, and basing to support crisis response.

CENTCOM is supported by four service component commands and one subordinate unified command: U.S. Naval Forces Middle East (USNAVCENT), U.S. Army Forces Middle East (USARCENT), U.S. Air Forces Middle East (USAFCENT), U.S. Marine Forces Middle East (MARCENT), and U.S. Special Operations Command Middle East (SOCCENT).

• **U.S. Naval Forces Central Command.** USNAVCENT is the maritime component of USCENTCOM. Based in Bahrain, it is responsible for commanding the afloat units that rotationally deploy or surge from the United States, in addition to other ships that are based in the Gulf for longer periods. USNAVCENT conducts persistent maritime operations to advance U.S. interests, deter and counter disruptive countries, defeat violent extremism, and strengthen partner nations’ maritime capabilities in order to promote a secure maritime environment in an area encompassing about 2.5 million square miles of water area.

• **U.S. Army Forces Central Command.** USARCENT is the land component of USCENTCOM. Based in Kuwait, it is responsible for land operations in an area encompassing 4.6 million square miles (0.5 times larger than the continental U.S.).

• **U.S. Air Forces Central.** USAFCENT is the air component of USCENTCOM. Based in Qatar, it is responsible for air operations and working with the air forces of partner countries in the region. Additionally, USAFCENT manages an extensive supply and equipment pre-positioning program at several regional sites.

• **U.S. Marine Forces Central Command.** USMARCENT is designated as the Marine Corps service component for USCENTCOM. Based in Bahrain, it is responsible for all Marine Corps forces in the region.

• **U.S. Special Operations Command Central.** SOCCENT is a subordinate unified command of USCENTCOM. Based in Qatar, it is responsible for planning special operations throughout the USCENTCOM region, planning and conducting peacetime joint/combined special operations training exercises, and orchestrating command and control of peacetime and wartime special operations.

In addition to the American military presence in the region, U.S. allies the United Kingdom and France play an important role in the region that should not be overlooked.

The U.K.’s presence in the Middle East is a legacy of its imperial rule. It has maintained close ties with many countries over which it once had heavy influence and has conducted military operations in the region almost regularly for decades. There are approximately 1,200 British service personnel based throughout the Gulf. The British presence in the region is dominated by the Royal Navy. In terms of permanently based naval assets in the region, there are four mine hunters and one Royal Fleet Auxiliary supply ship. Generally, there are two frigates or destroyers in the Gulf performing maritime security duties. Although such matters are not the subject of public discussion, one can only reasonably assume that U.K. attack-submarines also operate in the area. As a sign of the U.K.’s long-term maritime presence in the region, it recently broke ground on an $11 million new headquarters for its Maritime Component Command at Bahrain’s Salman Naval Base.136

The U.K. also has a sizeable Royal Air Force presence in the region—mainly in the UAE and Oman. A
short drive from Dubai, Al-Minhad Air Base is home to a small contingent of U.K. personnel. An Expeditionary Air Wing recently stood up to support air transport links between the U.K. and deployed operations in the region and to provide logistical support to RAF assets visiting the region. The U.K. also operates small RAF detachments in Oman that support U.K. and coalition operations in the region. Although considered to be in Europe, the U.K.’s Sovereign Base Areas of Akrotiri and Dhekelia that are located in Cyprus have supported U.S. military and intelligence operations in the past and will continue to do so in the future.

The British presence in the region extends beyond soldiers, ships, and planes. In Qatar, a British-run staff college recently opened, and Kuwait recently chose the U.K. to help run its own equivalent of the Royal Military Academy at Sandhurst. The U.K. also plays a very active role in training the Saudi Arabian and Jordanian militaries.

The French presence in the Gulf is smaller than the U.K.’s but still significant. France opened its first military base in the Gulf in 2009 in Abu Dhabi in the UAE. This was the first foreign military installation built by the French in 50 years. In total, the French have 700 troops based in the country along with six Rafale jets. French ships have access to the Zayed Port, which is big enough to handle every ship in the French Navy except the aircraft carrier Charles De Gaulle.

**Key Infrastructure and Warfighting Capabilities**

The Middle East is geographically situated in a critical location. Two-thirds of the world’s population live within an eight-hour flight from the Gulf region, making it easily accessible from most of the globe. The Middle East also contains some of the world’s most critical maritime chokepoints, like the Suez Canal and the Strait of Hormuz.

While infrastructure in the Middle East is not as developed as in North America or Europe, a decades-long presence in the Middle East means that the U.S. has tried and tested systems that involve moving large numbers of materiel and personnel into and out of the region. For example, according to the Department of Defense, at the height of U.S. combat operations in Iraq in the second Gulf War, there were 165,000 service members and 505 bases. Moving troops and equipment out of the country was an enormous undertaking, the largest logistical draw-down since the end of the World War II, which included the redeployment of more than four million pieces of equipment, 60,000 containers, and nearly 50,000 vehicles.

While 60 percent of roads in the Middle East region are paved, wide variation exists between countries. For example, Israel, Jordan, and United Arab Emirates have 100 percent of their roads paved. Other nations, such as Oman (46 percent), Saudi Arabia (21.5 percent), and Yemen (8.7 percent), have poor paved road coverage. For nations where data are available, rail coverage is poor. For instance, Saudi Arabia only has 700 miles of rail. By comparison, Maryland, which is roughly 1.5 percent the size of Saudi Arabia, has about the same amount of rail.

In Syria, three years of civil war have wreaked havoc on the nation’s rail system.

Though only 45 percent of runways of the 1,135 airports in the region are paved, air traffic in the region is set to grow and, eventually, outpace world growth statistics. In an attempt to diversify their economies, some nations in the region have been upgrading their air transportation infrastructure to take advantage of their location for connecting flights, thus opening up a pseudo airport arms race. Qatar opened a brand new $15 billion airport in May 2014. Abu Dhabi International Airport is undergoing an expansion program expected to be completed in 2017, and Dubai’s International Airport is currently the seventh busiest airport in the world.

The U.S. has access to several airfields in the region. The primary air hub for U.S. forces in the region is at Al Udeid Air Base in Qatar. Other airfields include: Ali Al Salem Air Base, Kuwait; Al Dhafra, UAE; Al Minhad, UAE; Sheikh Issa, Bahrain; Eksan Village Air Base, Saudi Arabia; Muscat, Oman; Thumrait, Oman; Masirah Island, Oman, and use of the commercial airport at Seeb, Oman. In the past, the U.S. has used major airfields in Iraq, including the Baghdad International Airport and Joint Base Balad, as well as Prince Sultan Air Base in Saudi Arabia. Just because the U.S. has access to a particular airbase today does not mean it will be made available for a particular operation in the future. For example, is highly likely that Qatar and Oman would not allow the U.S. to use air bases in their territory for strikes against Iran.

The U.S. has excellent access to ports in the region, perhaps most importantly in Bahrain. In December
2013, the U.S. embarked upon a $580 million expansion project at Naval Support Activity Bahrain, to be completed in 2015. The U.S. also has access to a deep-water port, Khalifa bin Salman, in Bahrain, and reportedly to naval facilities at Fujairah, UAE. UAE’s commercial port of Jebel Ali is open for visits from U.S. warships and pre-positioning of equipment for operations in the theater.

Approximately 90 percent of the world’s trade travels by sea, and some of the most important and busiest shipping lanes are located in the Middle East. For example, the Strait of Hormuz and the Bab el-Mandeb Strait combined have over 65,000 cargo ships travelling through them each year. With the high volume of maritime traffic in the Middle East region, no U.S. military operation can be undertaken without consideration of how these shipping lanes offer opportunity and risk to America and her allies. The major shipping routes include:

**The Suez Canal.** In 2013, 915.5 million tons of cargo transited the canal, averaging 45.5 ships transiting each day in 2013. Considering the canal itself is 120 miles long but only 670 feet wide, this is an impressive amount of traffic. The Suez Canal is increasingly important for Europe in terms of oil transportation. In 2013 (the year for which data are available), the Suez Canal saw an increase of 13.4 percent in terms of oil transportation from the prior year. The Canal also serves as an important strategic asset, as it is routinely used by the U.S. Navy to transition surface combatants between the Mediterranean Sea and the Red Sea. Thanks to a bilateral arrangement between Egypt and the United States, the U.S. Navy enjoys priority access to the canal. However, the journey through the narrow waterway is no easy task for large surface combatants. The canal was not constructed with the aim of accommodating 90,000-ton aircraft carriers and, therefore, exposes a larger ship to attack. For this reason, a variety of security protocols are followed—including the provision of air support by the Egyptian military.

**Strait of Hormuz.** The Strait of Hormuz is a critical oil-supply bottleneck that represents the busiest passageway for oil tankers in the world. The strait links the Persian Gulf with the Arabian Sea and the Gulf of Oman. Nearly 17 million barrels of oil per day, nearly 20 percent of the world’s traded oil, pass through the strait, for an annual total of more than six billion barrels of oil. Most of these crude oil exports go to Asian markets, with Japan, India, South Korea, and China representing the primary destinations.

The shipping routes through the Strait of Hormuz are particularly vulnerable to disruption, given the extremely narrow passage and its proximity to Iran. Tehran has repeatedly threatened to close the strategic strait in the event of a conflict. While attacking shipping in the strait would drive up the oil prices, Iran would also lose—both because it is dependent on the Strait of Hormuz to export its own crude oil and because it would undermine Tehran’s relations with oil importers such as China, Japan, and India.

**Bab el-Mandeb Strait.** The Bab el-Mandeb strait is a strategic waterway located between the Horn of Africa and Yemen that links the Red Sea to the Indian Ocean. Exports from the Persian Gulf and Asia destined for Western markets must pass through the strait en route to the Suez Canal. The Bab al-Mandeb Strait is 18 miles wide at its narrowest point, limiting passage to two channels for inbound and outbound shipments. Over the past decade, piracy off the coast of Somalia dominated the focus of international maritime security efforts. Recently, however, the frequency of pirate attacks in the region has dropped off—reaching the lowest point since 2006, according to the International Maritime Bureau’s (IMB’s) global piracy report. Pirate activity, however, continues to threaten international trade and the safety of the international commons.

**Maritime Prepositioning of Equipment and Supplies.** The U.S. military has non-combatant maritime prepositioning ships (MPS), containing large amounts of military equipment and supplies, in strategic locations from which they can reach areas of conflict relatively quickly, as associated U.S. Army or Marine Corps units located elsewhere arrive in the areas. The British Indian Ocean Territory of Diego Garcia, an island atoll, hosts the U.S. Naval Support Facility Diego Garcia, which supports prepositioning ships that can supply Army or Marine Corps units deployed for contingency operations in the Middle East.

**Conclusion**

For the foreseeable future, the Middle East region will remain a key focus for U.S. military planners. An area that was once considered relatively stable, mainly due to the ironfisted rule of authoritarian regimes, is now highly unstable and a breeding ground for terrorism.
Many of the borders created after World War I are disappearing. In places like Syria and Iraq, the supremacy of the nation-state is being challenged by non-state actors that wield influence, power, and resources comparable to small states. The main security and political challenges in the region are inextricably linked to the unfinished business of the Arab Spring, surging transnational terrorism, and the potential threat of a nuclear Iran. The aforementioned is made worse by the Arab–Israeli conflict, Sunni–Shia sectarian divides, and the rise of Persian nationalism.

Thanks to decades of U.S. military operations in the Middle East, the U.S. has tried and tested procedures for operating in the region. Bases and infrastructure are well established. The logistical processes to maintain a large force forward deployed thousands of miles away from the homeland are well in place. Unlike in Europe, all of these processes have been recently tested in combat. The personal links between allied armed forces are also present. Joint training exercises in the region improve interoperability, and U.S. military educational courses, which officers (and often royals) from the Middle East regularly attend, allow the U.S. to influence the future leaders of the region.

America’s relationships in the region fall narrowly, and pragmatically, along shared security and economic concerns. As long as these issues remain relevant to both sides, the U.S. is likely to have an open door to operate in the region when its national interests require it to do so.

Scoring the Middle East Operating Environment

As noted at the beginning of this section, various aspects of the region facilitate or inhibit the ability of the U.S. to conduct military operations to defend its vital national interests against threats. Our assessment of the operating environment utilized a five-point scale, ranging from “very poor” to “excellent” conditions and covering four regional characteristics of greatest relevance to the conduct of military operations:

1. **Very Poor.** Significant hurdles exist for military operations. Physical infrastructure is insufficient or nonexistent, and the region is politically unstable. In addition, the U.S. military is poorly placed, or absent, and alliances are nonexistent or diffuse.

2. **Unfavorable.** A challenging operating environment is marked by inadequate infrastructure, weak alliances, and recurring political instability. The U.S. military is inadequately placed in the region.

3. **Moderate.** The operating environment is neutral to moderately favorable, with adequate infrastructure, a moderate alliance structure, and acceptable levels of political stability in the region. The U.S. military is adequately placed.

4. **Favorable.** The operating environment includes good infrastructure, strong alliances, and a stable political environment. The U.S. military is well placed in the region for future operations.

5. **Excellent.** The region has a well-established and well-maintained infrastructure, strong capable allies, and a stable political environment. U.S. military exceptionally well placed to defend U.S. interests.

The key regional characteristics consisted of:

a. **Alliances.** Alliances are important for interoperability and collective defense as allies would be more likely to lend support to U.S. military operations. There are various indicators that give insight into the strength or health of an alliance. These include whether the U.S. trains regularly with countries in the region and has good interoperability with the forces of an ally, and whether the U.S. shares intelligence with nations in the region.

b. **Political Stability.** Political stability brings predictability for military planners when considering transit, basing and overflight rights, etc. for U.S. military operations. Overall degree of political stability indicates whether U.S. military
actions would be hindered or enabled, and considers, for example, whether transfers of power in the region have been generally peaceful and whether there have been any recent instances of political instability in the region.

c. **U.S. Military Positioning.** Having military forces based or equipment and supplies staged in a region greatly facilitates the United States’ ability to respond to crises and, presumably, achieve successes in critical “first battles” more quickly. Being routinely present in a region also assists in maintaining familiarity with its characteristics and the various actors who might try to assist or thwart U.S. actions. With this in mind we assessed whether or not the U.S. military was well-positioned in the region. Again, indicators included bases, troop presence, pre-positioned equipment, and recent examples of military operations (including training and humanitarian) launched from the region.

With this in mind, we arrived at these average scores for the Middle East (rounded to the nearest whole number):

- Alliances: 3.33 (3) — **Moderate**
- Political Stability: 1.66 (2) — **Unfavorable**
- U.S. Military Positioning: 3.33 (3) — **Moderate**
- Infrastructure: 2.66 (3) — **Moderate**

Leading to a regional score of: **Moderate**

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### Operating Environment: Middle East

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Asia

Since the founding of the American republic, Asia has been a key area of interest for the United States for both economic and security reasons. One of the first ships to sail under an American flag was the aptly named Empress of China, inaugurating the American role in the lucrative China trade. In the subsequent 200 years, the United States has worked under the strategic assumption that it was inimical to American interests to allow any single nation to dominate Asia. Asia constituted too important a market and was too great a source of key resources for the United States to be denied access. Thus, beginning with John Hay’s “Open Door” policy toward China in the 19th Century, the United States has worked to prevent the rise of a regional hegemon, whether it was imperial Japan or the Soviet Union.

In the 21st Century, the importance of Asia to the United States will continue to grow. Already, Asian markets absorb over a quarter of American exports in goods and services and, combined, support one-third of all American export-related jobs. This number is likely to grow, especially if the Trans-Pacific Partnership (TPP) regional free trade agreement comes into effect.

Not only is Asia still a major market with two of the world’s most populous countries, it is also a key source of vital resources such as electronic components. Over 40 percent of the world’s hard drives, for example, are made in Thailand. The March 2011 earthquake that devastated Japan had global repercussions, as supply chains for a variety of products from cars to computers were disrupted worldwide.

Asia is a matter of more than just economic concern, however. Several of the world’s largest militaries are in Asia, including those of China, India, North and South Korea, Pakistan, Russia, and Vietnam. The United States also maintains a significant military presence in Asia. Five Asian states possess nuclear weapons (China, North Korea, India, Pakistan, and Russia).

The region is a focus of American security concerns not only because of the presence of substantial military forces, but also because of the legacy of conflict. The two major “hot” wars the United States fought during the Cold War were both in Asia—Korea and Vietnam. Moreover, the Asian security environment is unstable. To begin with, the Cold War has not ended in Asia. Of the states divided between communism and democracy by the Cold War, three of the four were in Asia (China, Korea, and Vietnam). Neither the Korean nor the China–Taiwan situation was resolved despite the fall of the Berlin Wall and the collapse of the Soviet Union.

The Cold War itself was an ideological conflict layered atop longstanding—and still lingering—historical animosities. Asia is riven by a variety of border disputes, including:

- Northern Territories/Southern Kuriles (Japan and Russia);
- Senkakus/Diaoyutai/Diaoyu Dao (Japan, China, and Taiwan);
• Dok-do/Takeshima (Korea and Japan);
• Paracels/Xisha Islands (Vietnam and China);
• Nansha/Spratlys (China, Taiwan, Vietnam, Brunei, Malaysia, and the Philippines); and
• Preah Vihear temple complex (Cambodia and Thailand)

Indeed, the various names applied to the disputed territories reflect the fundamental differences in point of view, as each state refers to the disputed areas under a different name. Similarly, there are various names applied to the various major bodies of water, such as “East Sea” and “Sea of Japan,” and “West Sea” and “South China Sea.”

These disputes over names also are indicative of the broader tensions rooted in historical animosities—enmities that still that scar the region. Most notably, Japan’s actions in World War II continue to be a major source of controversy, particularly in China and South Korea, where debates over issues such as what is incorporated in textbooks and governmental statements prevents old wounds from completely healing.

Similarly, a Chinese claim that much of the Korean peninsula was once Chinese territory aroused reactions in both Koreas. Indeed, the Cold War merely applied an additional, ideological layer atop a roiling mass of unresolved issues across Asia; the end of the Cold War did little to resolve any of these underlying disagreements.

It is in this light that one should consider the lack of a political-security infrastructure, or even much of an economic one, undergirding East Asia. While there is substantial trade among the various Asian states, as well as with the rest of the world, there is only limited economic integration. There is no counterpart to the European Union, or even the European Economic Community, as there is no parallel to the European Coal and Steel Community, the precursor to European economic integration. The Association of Southeast Asian Nations (ASEAN) is a far looser agglomeration of disparate states, although they have succeeded in expanding economic linkages among themselves over the past 47 years. And despite attempts, there is still no Asia-wide free trade agreement (although the Trans-Pacific Partnership, if passed, and the Regional Comprehensive Economic Partnership would help remedy this gap to some extent).

Similarly, there is no equivalent of NATO, despite a mid-20th-century effort, ultimately failed, to forge a parallel, multilateral security architecture through the Southeast Asia Treaty Organization (SEATO). Regional security entities, such as the Five Power Defence Arrangement (involving the U.K., Australia, New Zealand, Malaysia, and Singapore in an “arrangement,” not an alliance), or discussion forums such as the ASEAN Regional Forum and the ASEAN Defense Ministers’ Meeting, have been far weaker. Nor did an Asian equivalent of the Warsaw Pact organization arise. Instead, Asian security has been marked by a combination of bilateral alliances, mostly centered on the United States, and individual nations’ efforts at affecting their own security.

**Important Alliances and Bilateral Relations in Asia**

For the United States, the keys to its position in the Western Pacific are its five alliances (with Japan, the Republic of Korea, the Philippines, Thailand, and Australia), as well as its special relationship with Taiwan. These alliances are supplemented by a very close security relationship with Singapore, and evolving relationships with other nations in the region like Vietnam, Malaysia, and Indonesia.

The United States enjoys the benefit of sharing common weapons and systems with many of its allies, facilitating interoperability. Many nations, for example, have equipped their infantry with M-16/M-4-based infantry weapons (and share the 5.56mm caliber), F-15 and F-16 combat aircraft, and LINK-16 naval data links. Consequently, in event of conflict, the various air, naval, and even land forces will be capable of sharing information in such key areas as air defense and maritime domain awareness. This advantage is further expanded by the constant ongoing range of both bilateral and multilateral exercises, which acclimates various forces to operating together and familiarizes both American and local commanders with each other’s standard operating procedures (SOPs), as well as training and tactics.

**Japan.** The U.S.–Japan defense relationship is one of the centerpiece of the American network of relations in the Western Pacific. The U.S.–Japan Treaty of Mutual Cooperation and Security, initialed in 1960, has provided for a deep alliance between two of the world’s largest economies and most sophisticated military establishments.
Since the end of World War II, Japan's defense policy has been distinguished by Article IX of its constitution. This article states in part, “the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as a means of settling international disputes,” in effect prohibiting the use of force by Japan's governments as an instrument of national policy. This article, in turn, led to several other associated policies.

For example, one such policy was a prohibition on “collective self-defense.” Japan recognized that nations have a right to employ their armed forces to help other states defend themselves (i.e., to engage in collective defensive operations), but rejected that policy for itself—Japan would employ its forces only in defense of Japan. While new official interpretations, once fully realized, will make important exceptions for the United States, its only treaty ally, the terms of the U.S.–Japan mutual security treaty had the practical effect of committing the U.S. to defend Japan, but not committing Japan to defending the U.S.

A similar policy decision was made regarding Japanese arms exports. Tokyo, for a variety of economic and political reasons, has chosen to rely on domestic production to meet most of its military requirements. At the same time, until very recently, it chose to limit arms exports, banning them entirely to:

- Communist bloc countries
- Countries that are placed by the U.N. Security Council under arms exports embargoes; and
- Countries involved in, or likely to be involved in, international conflicts.

One factor driving this decision was the desire not to have Japanese weapons identified with foreign wars. Consequently, Japanese weapons are some of the most expensive in the world, since they cannot amortize the costs across a larger export base.

As a result of these decisions, Tokyo relies heavily upon the United States for its security. In particular, it is dependent on the United States for deterring nuclear attacks on the home islands. The combination of the pacifist constitution and Japan's past (i.e., the atomic bombings of Hiroshima and Nagasaki) have forestalled much public interest in obtaining an independent nuclear deterrent. Similarly, throughout the Cold War, Japan relied on the American conventional and nuclear commitment to deter Soviet (and Chinese) aggression.

As part of the U.S. relationship with Japan, the United States maintains some 38,000 military personnel and another 5,000 Department of Defense civilian employees in Japan, under the rubric of U.S. Forces Japan (USFJ). These forces include a forward-deployed carrier battle group (centered on the USS George Washington), submarine tender, an amphibious assault ship at Yokosuka, and the bulk of the Third Marine Expeditionary Force (III MEF) on Okinawa. U.S. forces regularly exercise with their Japanese counterparts; in recent years, these have expanded from air and naval exercises to practicing amphibious operations together.

Supporting the American presence is a substantial American defense infrastructure established throughout Japan, including Okinawa. The array of major bases provide key logistical and communications support for U.S. operations throughout the Western Pacific, cutting travel time substantially (compared with deployments from Hawaii or the American West Coast). They also provide key listening posts on Russian, Chinese, and North Korean military operations. This is likely to be supplemented by Japan's growing array of space systems, including new reconnaissance satellites.

The Japanese government defrays a substantial portion of the cost of the American presence. At present, the government of Japan provides some $2 billion annually to support the cost of USFJ. These funds cover a variety of expenses, including utility and labor costs at U.S. bases, improvements to U.S. facilities in Japan, as well as the cost of relocating training exercises away from populated areas in Japan.

U.S.–Japanese defense cooperation is undergirded not only by the mutual security treaty, but also by the U.S.–Japan Defense Guidelines. Revised in October 2013, the new guidelines allow for the rotational deployment of American Global Hawk unmanned aerial vehicles from Japan, as well as expanded cooperation between the two countries in outer space and in cyber-defense. A final, revised set of guidelines was expected by the end of 2014.

Since at least the 1990 Gulf War, the United States has sought to obtain expanded Japanese participation in international security affairs. This effort has generally been resisted by Japan's political system, based on the view that Japan's constitution, legal
decisions, and popular attitudes all forbid such a shift. Attempts to expand Japan’s range of defense activities, especially away from the home islands, have often been met by vehement opposition from Japan’s neighbors, especially China and South Korea, due to unresolved differences on issues ranging from territorial claims and boundaries to historical grievances and Japanese visits to Yasukuni Shrine.

These issues have been sufficient to torpedo efforts at improving defense cooperation between Seoul and Tokyo—a fact highlighted in 2012 by South Korea’s last-minute decision not to sign an agreement to share sensitive military data, including details about the North Korean threat to both countries.\(^{166}\) Consequently, both countries still rely on the United States as a de facto go-between and share data with Washington, which has ties to both. Despite a trilateral agreement among Washington, Tokyo, and Seoul that a more straightforward, direct relationship needs to be established, no formal agreement has yet been reached.\(^{167}\) Similar controversies, rooted in history as well as contemporary politics, have also affected Sino–Japanese relations and, to a lesser extent, Japanese ties to some Southeast Asian states.

Nonetheless, Prime Minister Shinzō Abe has pushed through a reinterpretation of the legality of Japanese participation in “collective defense” situations, as well as loosening restrictions on arms sales. The combination of reforms provides the legal foundation for much greater Japanese interaction with other states in defense arenas, including joint production of weapons and components, as well as the potential for interaction with foreign military forces. It also provides for the possibility of Japanese assistance to friendly nations that are under attack.\(^{168}\)

**Republic of Korea.** The United States and the Republic of Korea (ROK) signed the Mutual Defense Treaty in 1953. That treaty codified the relationship that had grown from the Korean War, when the United States dispatched troops to help South Korea fend off North Korea’s invasion. Since then, the two states have forged an enduring alliance that supplements a substantial trade and economic relationship, including a free trade agreement.

The United States currently maintains some 28,500 troops in Korea, the largest concentration of American forces on the Asian mainland. This is mainly centered on the U.S. 2nd Infantry Division, as well as a significant number of combat aircraft. The U.S.–ROK defense relationship involves one of the more integrated and complex command and control structures. A United Nations Command (UNC) was established in 1950, which was the basis for the American intervention, and it remained in place after the armistice was signed in 1953. UNC maintains a number of bases in Japan in order to support U.N. forces in Korea. In concrete terms, however, the UNC only oversaw South Korean and American forces, as other nations’ contributions were gradually withdrawn or reduced to token elements.

In 1978, operational control of frontline South Korean and American military forces transitioned from UNC to Combined Forces Command (CFC). Headed by an American officer (who is also the Commander-in-Chief U.N. Command), CFC reflects an unparalleled degree of U.S.–South Korean military integration. Similarly, the system of Korean Augmentees to the United States Army (KATUSA), which places South Korean soldiers into American units assigned to Korea, allows for a degree of tactical-level integration and cooperation that is atypical.

Current command arrangements for the U.S. and ROK militaries are for CFC to exercise operational control (OPCON) of all forces on the peninsula in time of war, while peacetime control rests with respective national authorities (although the U.S. exercises peacetime OPCON over non-U.S., non-ROK forces located on the peninsula). In 2003, South Korean president Roh Moo-hyun began the process of transferring wartime operational control (OPCON) from CFC to South Korean commanders, thereby establishing the ROK military as fully independent of the United States. This decision engendered significant opposition within the South Korean polity, however, and raised serious military questions about the impact on unity of command. Coupled with various North Korean provocations (including a spate of missile tests as well as attacks on South Korean military forces and territory in 2010), the transition has been pushed back to 2015 and is likely to be further delayed.\(^{169}\)

Unlike Japan, South Korea’s military does not operate under the same level of domestic political constraints. Thus, South Korea rotated several divisions to fight alongside Americans in Vietnam. In the first Gulf War and the Iraq War, South Korea limited its contributions to non-combatant forces and monetary aid. The focus of South Korean
defense planning remains on North Korea, however, especially as Pyongyang has deployed its forces in ways that optimize a southward advance. Concerns about North Korea have been heightened in recent years in the wake of the sinking of the South Korean frigate Cheonan, and the shelling of Yongpyeong-do Island, perhaps the most serious incident in decades. Moreover, in the last several conflicts (e.g., Operation Iraqi Freedom), Seoul has not provided combat forces, preferring instead to send humanitarian and non-combatant assistance.

Over the past several decades, the American presence on the peninsula has slowly declined. In the early 1970s, President Nixon withdrew the 7th Infantry Division, leaving only the 2nd Infantry Division on the peninsula. Those forces have been positioned farther back, so that there are few Americans deployed on the Demilitarized Zone (DMZ). U.S. forces regularly engage in major exercises with their ROK counterparts, however, including the Key Resolve and Foal Eagle series. Both of these series involve the actual deployment of a substantial number of forces and are partly intended to signal and deter Pyongyang, as well as to give U.S. and ROK forces a chance to practice operating together.

The ROK government also provides substantial resources to defray the costs of U.S. Forces-Korea. It provides some $730 million annually in either direct funding or in-kind support, covering cost-sharing for labor and logistics, as well as facilities improvements.170

The Philippines. The longest defense relationship the United States has in Asia is with the Philippines. The United States seized the Philippines from the Spanish over a century ago, in the wake of the Spanish-American War. But, unlike other colonial states, the United States put in place a mechanism for the Philippines to gain its independence, transitioning through a period as a commonwealth, until the archipelago was granted independence in 1946. Just as important, substantial numbers of Filipinos fought alongside the United States against Japan in World War II, establishing a bond between the two peoples. In the wake of the World War II and after assisting the newly independent Filipino government against the Communist Hukbalahap movement in the 1940s, the United States and the Philippines signed a mutual security treaty.

For much of the period between 1898 and the end of the Cold War, the largest American bases in the Pacific were in the Philippines, centered around the U.S. Navy base in Subic Bay and the complex of airfields that developed around Clark Field (later Clark Air Base). While the Philippines have never had the ability to provide substantial financial support for the American presence, the base infrastructure was unparalleled, providing replenishment and repair facilities, and substantially extending deployment periods throughout the East Asian littoral. The bases were often centers of controversy, however, as they were reminders of the colonial era. In 1991, a successor to the Military Bases Agreement between the U.S. and the Philippines was submitted to the Philippine Senate for ratification. The Philippines, after a lengthy debate, rejected the treaty, which compelled American withdrawal from Philippine bases. Coupled with the effects of the 1991 eruption of Mount Pinatubo (which devastated Clark Air Base and damaged many Subic Bay facilities) and in the wake of the end of the Cold War, the closure of the bases was not seen as fundamentally damaging America’s posture in the region.

Moreover, despite the closing of the American bases, U.S.–Philippine military relations remained extensive, as U.S. forces continued to train the Armed Forces of the Philippines (AFP). Furthermore, the U.S. government provided military aid and assistance—both of which increased in the wake of 9/11, as U.S. forces assisted the Philippines in countering Islamic terrorist groups, including Abu Sayyaf, in the south of the archipelago. The U.S. currently rotates some 500 troops regularly to the Philippines, mostly to assist in counter-terrorism operations, while another 6,500 participate in combined exercises with Filipino troops.171

In 2014, the United States and the Philippines announced a new Enhanced Defense Cooperation Agreement (EDCA), which allows for an expanded American presence in the archipelago.172 Under the agreement, U.S. forces would rotate through on an expanded basis, allowing a more regular presence in the islands (but would not have new, permanent bases there), and also engage in more joint training with AFP forces. It also facilitates the provision of humanitarian assistance and disaster relief (HA/DR). Under the EDCA, the United States also agreed to transfer and sell more military equipment to the AFP, in order to help it modernize. This latter is an important step, as the Philippine military has long been one of the weakest in the region, despite the
need to defend an incredibly large expanse of ocean, shoreline, and territory.

One longstanding difference between the U.S. and Philippines has been the application of the U.S.–Philippine Mutual Defense Treaty to disputed islands in the South China Sea. While Philippine government officials have long argued that the treaty does not explicitly extend American obligations to disputed areas and territories, official American interpretations of the treaty conclude otherwise. While the EDCA does not change that, the growing tensions in the South China Sea, including in recent years at Scarborough Shoal, have highlighted Manila's need for greater support from, and cooperation with, Washington. Moreover, the U.S. government has been explicit that any attack upon the Philippines' government ships or aircraft, or Philippine armed forces, would be covered under the Treaty, “thus separating the issue of territorial sovereignty from attack on Philippine military and public vessels.”

**Thailand.** The U.S.–Thai security relationship is built on the 1954 Manila Pact, which established the now-defunct Southeast Asia Treaty Organization, and the 1962 Thanat–Busk agreement. These were supplemented by the 2012 Joint Vision statement for U.S.–Thai relations. Moreover, in 2003, Thailand was designated a “major, non-NATO ally,” providing it with improved access to American arms sales.

Thailand’s central location has made it an important component in the network of U.S. alliances in Asia. During the Vietnam War, a variety of American aircraft were based in Thailand, ranging from fighter-bombers and B-52s to reconnaissance aircraft. In the first Gulf War, and again in the Iraq War, some of those same airbases were essential for the rapid deployment of American forces to the Persian Gulf.

U.S. and Thai forces regularly exercise together, most notably in the annual Cobra Gold exercises, first begun in 1982. This builds on a partnership that began with the dispatch of Thai forces to the Korean War, where over 1,200 Thai troops died (out of some 6,000 deployed). The Cobra Gold exercises are one of the world’s largest multilateral military exercises.

U.S.–Thai relations have been strained in recent years, due to Thai domestic unrest and several coups. This strife has limited the extent of U.S.–Thai military cooperation, per the provisions of Section 508 of the Foreign Assistance Act of 1961. Nonetheless, the two states continue to cooperate, including in the vital area of intelligence sharing to prevent terrorism. The Counter Terrorism Information Center (CTIC) continues to allow the two states to share vital information about terrorist activities in Asia. CTIC is alleged to have played a key role in the capture of the leader of Jemaah Islamiyah, Hambali, in 2003.

Thailand, meanwhile, has also been drawing closer to the People’s Republic of China (PRC)—a process underway since the end of the Vietnam War, but that is accelerating due to expanding economic relations between the two states. Between 2005 and 2010, the value of trade between the two states doubled. By 2012, China was Thailand’s second largest trading partner, while Thailand was China’s 14th largest.

Thai and Chinese military intelligence officers began formal meetings in 1988. Since 2007, Thai and Chinese military forces have engaged in joint counter-terrorism exercises, and since 2010, the two nations’ marines have also jointly exercised together. Thai–Chinese military relations may have accelerated as a result of the U.S. restrictions imposed in the wake of Thai political instability.

**Australia.** Australia is one of the most important American allies in the Asia–Pacific. U.S.–Australia security ties date back to World War I, when U.S. forces fought under Australian command on the Western Front. These ties deepened during World War II when, after Japan commenced hostilities in the Western Pacific, Australian forces committed to the North Africa campaign were not returned to defend the continent—despite British promises to do so. Consequently, as Japanese forces attacked the East Indies and secured Singapore, Australia turned to the United States to bolster its defenses. American and Australian forces subsequently closely cooperated in the Pacific War. Those ties, and America’s role as the main external supporter for Australian security, were codified in the Australia–New Zealand–U.S. (ANZUS) pact of 1951, which tied the three states together.

A key part of the Obama Administration’s “Asia pivot” was to deploy additional United States Marines to Australia. Eventually expected to total some 2,500 troops, the initial contingent of forces are based near the northern city of Darwin. Meanwhile, the two nations engage in a variety of security cooperation efforts, including joint space surveillance activities. These were codified in 2014, with an agreement that allows sharing of space information data among the U.S., Australia, U.K., and Canada.
The two nations’ chief defense and foreign policy officials meet annually in the Australia–United States Ministerial (AUSMIN) process, addressing issues of mutual concern. These have typically included security developments in the Asia–Pacific region, global security and development concerns, and bilateral security cooperation. Australia has also granted the United States access to a number of joint facilities, including space surveillance facilities at Pine Gap, naval communications facilities on the North West Cape of Australia, and Marines in the Northern Territory.

Australia and the U.K. are two of America’s closest partners in the defense industrial sector. In 2010, the United States approved Defense Trade Cooperation Treaties with Australia and the U.K. These treaties allow for the expedited and simplified export or transfer of certain defense services and items between the U.S. and its two key partners, without the need for export licenses or other approvals under the International Traffic in Arms Regulations. This also allows for much greater integration among the American, Australian, and British defense industrial establishments.

New Zealand. For much of the Cold War, U.S. defense ties with New Zealand were similar to those between America and Australia. However, the controversies over U.S. Navy employment of nuclear power and the possibility of deployment of U.S. naval vessels with nuclear weapons led to a fissure in U.S.–New Zealand security ties in the mid-1980s. In the early 21st century, however, defense relations improved, as New Zealand committed forces to Afghanistan and also dispatched an engineering detachment to Iraq. The 2010 Wellington Declaration and the 2012 Washington Declaration, while not restoring full security ties, allowed the two nations to resume high-level defense dialogues. In 2013, U.S. Secretary of Defense Hagel and New Zealand Defense Minister Jonathan Coleman announced the resumption of military-to-military cooperation.

Taiwan. When the United States shifted its recognition of the government of China from the Republic of China (on Taiwan) to the People’s Republic of China (the mainland), it nonetheless retained an implicit, if purposely ambiguous, commitment to help Taiwan resist any use of force by the PRC. This commitment is embodied in the Taiwan Relations Act (TRA), and the subsequent “Six Assurances.”

The TRA is an American law, rather than a treaty, as the United States does not recognize the governing authorities in Taipei as a state. Nonetheless, under the TRA, the United States maintains de facto diplomatic relations with Taipei, including diplomatic-level contacts run through the American Institute in Taiwan (AIT), the de facto American embassy on the island. Furthermore, except for the U.S.–China Mutual Defense Treaty (which had governed U.S. security relations with Taiwan), all other treaties and international agreements made between the Republic of China and the United States remain in force. (The Sino–U.S. Mutual Defense Treaty was terminated by President Carter following the shift in recognition to the PRC.)

Under the TRA, it is the policy of the United States “to make available to Taiwan such defense articles and services in such quantity as may be necessary to enable Taiwan to maintain a sufficient self-defense capability.” Neither the articles nor services are specifically defined, however. But this clause, as well as another clause stating that it is U.S. policy “to provide Taiwan with arms of a defensive character,” have justified the continued sale of weapons to Taiwan under the TRA.

The act also states that it is U.S. policy to “consider any effort to determine the future of Taiwan by other than peaceful means, including by boycotts or embargoes, a threat to the peace and security of the Western Pacific area and of grave concern to the United States.” Furthermore, the act also states that it is U.S. policy to “maintain the capacity of the United States to resist any resort to force or other forms of coercion that would jeopardize the security, or the social or economic system, of the people on Taiwan.”

The TRA requires the President to inform Congress of “any threat to the security or the social or economic system of the people on Taiwan and any danger to the interests of the United States arising therefrom.” Then follows in the TRA its only security commitment: “The President and the Congress shall determine, in accordance with constitutional processes, appropriate action by the United States in response to any such danger.”

Supplementing the TRA are the “Six Assurances” issued by President Reagan in a secret July 1982 memo, subsequently publicly released and the subject of a Senate hearing. These six assurances were intended to moderate the third Sino–American communique, itself generally seen as one of the “Three Communiques” that form the foundation of
U.S.–PRC relations. These reassurances were that the United States

● Had not agreed to set a date for ending arms sales to the Republic of China;

● Had not agreed to hold prior consultations with the PRC regarding arms sales to the Republic of China;

● Would not play a mediation role between the PRC and the Republic of China;

● Would not revise the Taiwan Relations Act;

● Had not altered its position regarding sovereignty over Taiwan; and

● Would not exert pressure on the Republic of China to enter into negotiations with the PRC. 185

Although the United States sells Taiwan a variety of military equipment, unlike its alliance relationships, the United States does not engage in joint exercises with the Taiwan armed forces. Some Taiwan military officers, however, do receive training in the United States, attending American professional military education institutions. There are also regular high-level meetings between senior U.S. and Taiwan defense officials, both uniformed and civilian. The United States does not maintain any bases in Taiwan or its territories.

Quality of Allied Armed Forces in Asia

Because of the lack of an integrated, regional security architecture, the United States partners with most of the nations in the region on a bilateral basis. This, in turn, means that there is no single standard to which all the local militaries aspire; instead, there is a wide range of capabilities, influenced by local threat perceptions, physical conditions, historical factors, and budgetary considerations. Moreover, assessing the quality of Asian armed forces is difficult due to the lack of recent major conflicts in the region. Most Asian militaries have limited combat experience; some have never fought an external war since gaining independence in the immediate aftermath of World War II (e.g., Malaysia). The Indochina wars, the most recent high intensity conflicts, are now over 30 years in the past. Consequently, it is unclear how well Asian militaries have trained for future warfare and whether their doctrine will meet the exigencies of wartime realities.

Based on examinations of equipment, however, it is assessed that several Asian allies and friends have substantial military capabilities supported by robust defense industries and significant defense spending. Japan, South Korea, and Australia are all estimated to be among the largest 15 defense budgets in the world. Each of their military forces field some of the most advanced weapons in the world, including F-15s in the Japan Air Self Defense Force and ROK Air Force, airborne early warning (AEW) platforms, AEGIS-capable surface combatants and modern diesel-electric submarines, and third-generation main battle tanks. All three nations are currently committed to purchasing F-35 fighters.

Indeed, at this point, both the Japanese and Korean militaries are arguably more capable than most European militaries, at least in terms of conventional forces. Japan’s Self Defense Forces, for example, fields more tanks (777), principal surface combatants (47), and fighter/ground attack aircraft (340) than their British opposite numbers (227, 18, and 230, respectively). 186 Similarly, South Korea’s military fields a larger military of tanks, principal surface combatants, submarines, and fighter/ground attack aircraft (over 1000, 28, 23, and 468, respectively) than their German counterparts (322, 19, 4, and 209, respectively). 187

Both the ROK and Japan are also increasingly interested in developing missile defense capabilities. Notably, South Korea is concerned that participation with the United States might antagonize Beijing or Moscow. 188 Rather than abandoning missile defense plans, however, South Korea is pursuing an indigenous capability, devoting some 14 percent of its defense budget to that end. 189

Although Singapore is not formally allied with the United States, it is a key partner with the United States, already hosting two new Littoral Combat Ships (LCS) and offering to host two more, as well as a rotating squadron of F-16 fighter aircraft. 190 Singapore’s small population and physical borders limit the size of its military, and therefore its defense budget, but, in terms of equipment, it nonetheless fields some of the highest quality forces in the region. For example, Singapore’s ground forces can deploy third-generation Leopard II main battle tanks; its fleet includes five conventional subma-
Marines (including one with air-independent propulsion systems), six frigates, and six missile-armed corvettes; and the Singapore air force not only has F-15E Strike Eagles and F-16s, it also has one of the largest fleets of airborne early warning and control aircraft in Southeast Asia (six G550 aircraft) and a tanker fleet of KC-130s that can help extend range or time on station.

At the other extreme, the Armed Forces of the Philippines (AFP) are among the weakest military forces in the region. Having long focused on waging counter-insurgency campaigns while being reliant on the United States for its external security, the AFP has one of the lowest budgets in the region—and one of the most extensive coastlines to defend. With a defense budget of only $2.5 billion, and confronted with a number of insurgencies, including the Islamist Abu Sayyaf and New People’s Army, Philippine defense resources have long been stretched thin. The last squadron of fighter aircraft (1960s
vintage F-5 fighters) was retired several years ago; the Philippine Air Force (PAF) has had to employ its S-211 trainers as fighters and ground attack aircraft. The most modern ships in the Philippine navy are two former U.S. Hamilton-class Coast Guard cutters; its other main combatant is a World War II destroyer escort, one of the oldest serving warships in the world.

Current U.S. Presence in Asia

The U.S. Pacific Command (PACOM) is the oldest and largest of American unified commands. Established on January 1, 1947, PACOM, “together with other U.S. government agencies, protects and defends the United States, its territories, allies, and interests,” according to its mission statement. To this end, the U.S. seeks to preserve a “geographically distributed, operationally resilient, and politically sustainable” regional force posture within the PACOM area of responsibility, which can effectively deter any potential adversaries.

PACOM includes not only the expanses of the Pacific, but also Alaska and portions of the Arctic, South Asia, and the Indian Ocean. It includes 36 nations holding more than 50 percent of the world’s population, two of the three largest economies, and nine of the 10 smallest; the most populous nation; the largest democracy; the largest Muslim-majority nation; and the smallest republic in the world. The region is a vital driver of the global economy and includes the world’s busiest international sea lanes and nine of the 10 largest ports. By any meaningful measure, the Asia-Pacific is also the most militarized region in the world, with seven of the world’s 10 largest standing militaries, as well as five of the world’s declared nuclear nations.

Under PACOM are a number of subcomponents, including:

- **U.S. Army Pacific.** USARPAC is the Army’s component command in the Pacific. It supplies Army forces as necessary for various contingencies. It administers one infantry division, the 25th Infantry Division, which has two of its brigades based in Hawaii and two in Alaska (U.S. Army Alaska), as well as various other elements in Japan and Hawaii.

- **U.S. Pacific Air Force.** PACAF is responsible for planning and conducting defensive and offensive air operations in the Asia-Pacific region. It has four numbered air forces under its command, 5th Air Force (in Japan), 7th Air Force (in Korea), 11th Air Force (headquartered in Alaska), and 13th Air Force (on Guam). These field two squadrons of F-15s, two squadrons of F-22s, five squadrons of F-16s, and a single squadron of A-10 ground attack aircraft, as well as several squadrons of E-3 early-warning aircraft, tankers, transports, and electronic warfare aircraft. Other forces that regularly come under PACAF command include B-52s, B-1, and B-2 bombers.

- **U.S. Pacific Fleet.** PACFLT controls all U.S. naval forces committed to the Pacific. These currently include 41 nuclear-powered attack submarines (including cruise missile subs), five carrier groups, and at least one amphibious group, plus various support ships. PACFLT is organized into Seventh Fleet headquartered in Japan, and Third Fleet headquartered in California. Seventh Fleet comprises the forward-deployed element of PACFLT, and includes some 60–70 ships and 200–300 sea-based and land-based aircraft at any time. This includes the only American carrier strike group (CTF-70) and amphibious group (CTF-76) home-ported abroad, at Yokosuka and Sasebo, Japan, respectively. The Third Fleet’s area of responsibility spans the West Coast of the United States to the International Date Line, and includes the Alaskan coastline and parts of the Arctic.

Since the announcement of the “Asia pivot,” it has been reported that the United States will shift more naval and air force assets to the Pacific. It is expected that, eventually, some 60 percent of U.S. Navy assets will be deployed to the Pacific (although it remains unclear whether they will be permanently based there). That percentage, however, will be drawn from a fleet that is shrinking in overall size, so the net effect may actually be fewer forces deployed than before.

- **U.S. Marine Forces Pacific.** MARFORPAC controls elements of the U.S. Marine Corps operating in the Asia-Pacific region. MARFORPAC’s headquarters are in Hawaii. Because of the extensive responsibilities and physical span, it controls two-thirds of Marine Corps forces: the I Marine
Expeditionary Force (MEF), centered on the 1st Marine Division, 1st Marine Air Wing, and 1st Marine Logistics Group, and the III Marine Expeditionary Force, centered on the 3rd Marine Division, 3rd Marine Air Wing, and 3rd Marine Logistics Group. The I MEF is headquartered at Camp Pendleton, CA, and III MEF is headquartered on Okinawa, although each has various subordinate elements deployed at any time throughout the Pacific on exercises, maintaining presence, or engaged in other activities. MARFORPAC is responsible for supporting three different commands. It is the U.S. Marine Corps component to PACOM. It provides the Fleet Marine Forces to PACFLT. And it also provides Marine forces for U.S. Forces Korea (USFK).

- **U.S. Special Operations Command Pacific.**
  SOCPAC has operational control of various special operations forces, including Navy SEALs, Naval Special Warfare units, Army Special Forces (Green Berets), and Special Operations Aviation units in the Pacific region, including elements in Japan and South Korea. It supports the Pacific Command’s Theater Security Cooperation Program, as well as other plans and contingency responses. This includes extensive activities in the Philippines, assisting Manila in countering Islamic fundamentalist elements such as Abu Sayyaf. SOCPAC forces are also supporting various operations in the region other than warfighting, such as counterdrug operations, counter-terrorism training, humanitarian assistance, and demining activities.

- **U.S. Forces Korea and U.S. Eighth Army.**
  Because of the unique situation on the Korean peninsula, two subcomponents of PACOM are U.S. Forces Korea (USFK) and U.S. Eighth Army. USFK is a joint headquarters, led by a four-star U.S. general. It is in charge of the various U.S. military elements on the Korean peninsula. U.S. Eighth Army operates in conjunction with USFK, as well as the United Nations presence (in the form of United Nations Command).

  Other forces, including space capabilities, cyber capabilities, air and sealift assets, and additional combat forces may be made available to PACOM depending on requirements and availability.

**Key Infrastructure That Enables Expeditionary Warfighting Capabilities**

Any planning for operations in the Pacific will be dominated by the “tyranny of distance.” The extensive distances that must be traversed in order to deploy forces mean that even air force units will take one or more days to deploy, while ships measure steaming time in weeks. For instance, ships require four days to get from the West Coast of the United States to Hawaii. From there, it takes a further seven days to get to Guam, six days to Japan, eight days to Okinawa or Australia—if ships move at top speed, undertake no evasive measures, and encounter no interference.

China’s growing anti-access/area denial (A2/AD) capabilities, ranging from an expanding fleet of modern submarines to anti-ship ballistic and cruise missiles, raise doubts about future ease of travel in the Pacific for U.S. warships and U.S. commercial vessels supporting U.S. forces. China’s capabilities not only jeopardize American combat forces that would flow into the theater for initial combat, but would continue to threaten the logistical support that would sustain American combat power for the subsequent days, weeks, and months.

American basing structure in the Asia-Pacific region, including access to key allied facilities, is therefore both necessary and increasingly at risk.

**American Facilities**

Much as in the 20th century, Hawaii remains the linchpin to American ability to support its position in the Western Pacific. If the United States cannot preserve the facilities in Hawaii, then both combat power and sustainability become moot. The United States maintains air and naval bases, communications infrastructure, and logistical support on Oahu and elsewhere in the Hawaiian Islands. Hawaii is also a key site for undersea cables that carry much of the world’s communications and data, as well as satellite ground stations.

The American territory of Guam is located 4,600 miles farther west. Obtained from Spain as a result of the Spanish–American War, Guam became a key coaling station for U.S. Navy ships. Seized by Japan in World War II, it was liberated by U.S. forces in 1944, and after the war became an unincorporated, organized territory of the United States. Key U.S. military facilities on Guam include U.S. Naval Base Guam, which houses several attack submarines and
which may add an aircraft carrier berth, and Andersen Air Force Base, one of a handful of facilities that can house B-2 bombers. U.S. task forces, meanwhile, can stage out of Apra Harbor, drawing weapons from the Ordnance Annex in the island’s South Central Highlands. There is also a communications and data relay facility on the island.

Over the past 20 years, Guam’s facilities have steadily improved. B-2 bombers, for example, began operating from Andersen Air Force Base in 2005. These improvements have been accelerated and expanded, as China’s A2/AD capabilities have raised doubts about the ability to sustain operations in the Western Pacific. The concentration of air and naval assets as well as logistical infrastructure, however, makes the island a lucrative potential target in event of conflict.

The U.S. military has non-combatant maritime prepositioning ships (MPS), containing large amounts of military equipment and supplies, in strategic locations from which they can reach areas of conflict relatively quickly, as associated U.S. Army or Marine Corps units located elsewhere arrive in the areas. The U.S. Navy has units on Guam and in Saipan, Commonwealth of the Northern Marianas, which support prepositioning ships that can supply Army or Marine Corps units deployed for contingency operations in Asia.

**Allied and Friendly Facilities**

For the United States, access to bases in Asia has long been a prerequisite for supporting any American military operations in the region. Even with the extensive aerial refueling and underway replenishment skills of the U.S. Air Force and U.S. Navy, it is still essential for the United States to retain access to resupply and replenishment facilities, at least in peacetime. The ability of those facilities to not only survive but function will directly influence the course of any conflict in the Western Pacific region. Moreover, there are a variety of support functions, including communications, intelligence, and space support that cannot be accomplished without facilities in the region. At the present time, it would be extraordinarily difficult to maintain maritime domain awareness or space situational awareness without access to facilities in the Asia-Pacific region. The American alliance network outlined previously therefore is not only a matter of political partnership, but access to key facilities on allied soil.

**Japan.** In Japan, the United States has access to over 100 different facilities, including communications stations, military and dependent housing, fuel and ammunition depots, weapons and training ranges. This access comes in addition to major bases such as air bases at Misawa, Yokota, and Kadena, and naval facilities at Yokosuka, Atsugi, and Sasebo. The naval facilities support the USS George Washington carrier strike group (CSG), which is home-ported in Japan at Yokosuka, as well as a Marine Expeditionary Strike Group (ESG) centered on the USS Bonhomme Richard, home-ported at Sasebo. Moreover, the skilled work force at places like Yokosuka is an integral part of maintaining American forces—and repairing equipment in time of conflict. Replacing them would take years.

This combination of facilities and work force, in addition to physical location and political support, makes Japan an essential part of any American military response to contingencies in the Western Pacific. Japanese financial support for the American presence also makes these facilities some of the most cost-effective in the world.

**South Korea.** In South Korea, the United States also maintains an array of facilities, with a larger Army footprint than in Japan, as the United States and South Korea remain focused on deterring North Korean aggression and preparing for any possible North Korean contingencies. The Army maintains four major facilities (which in turn control a number of smaller sites) at Daegu, Yongsan (in Seoul), and Camps Red Cloud/Casey and Humphreys. These facilities support the U.S. 2nd Infantry Division, which is based in South Korea. Other key facilities include air bases at Osan and Kunsan, as well as a naval facility at Chinhae near Pusan.

**The Philippines.** In 1992, The United States ended nearly a century-long presence in the Philippines, when it withdrew from its base in Subic Bay as its lease there ended. Clark Air Force base had been closed earlier, due to the eruption of Mount Pinatubo; the costs of repairing the facility were deemed too high to be worthwhile. With growing Chinese assertiveness in the South China Sea, however, including against Philippine claims such as Mischief Reef and Scarborough Shoal, the two states negotiated the EDCA in 2014, which will allow for the rotation of American forces through Philippine military bases.

While no specific facilities have thus far been announced, it is expected that, at a minimum, Subic Bay (one of the world’s finest harbors) and the runways at Clark Field will be utilized. The naval air
station at Subic, Cubi Point, may also be reopened. Additional locations that have been reported in the press include Oyster Bay and Brooke’s Point in Palawan, both of which are near the disputed Spratly Islands. It remains unclear what forces would be rotated through the Philippines as a part of this agreement, which in turn affects the kinds of facilities that would be most needed. Some have suggested, for example, that in the face of China’s A2/AD capabilities, access to a number of suitable airfields might complicate Chinese targeting of American airpower.

**Singapore.** The United States does not have bases in Singapore, but is allowed access to several key facilities that are essential for supporting American forward presence. The United States has been allowed to operate the principal logistics command for the Seventh Fleet out of the Port of Singapore Authority’s (PSA) Sembawang Terminal since the closure of its facilities at Subic. The U.S. Navy also has access to Changi Naval Base. Singapore maintains one of the few drydocks in the world that can handle a 100,000 ton American aircraft carrier. Meanwhile, a small U.S. Air Force contingent operates out of Paya Lebar Air Base, to support U.S. Air Force combat units visiting Singapore and Southeast Asia.

**Australia.** A much-discussed element of the “Asia pivot” has been the 2011 agreement to deploy U.S. Marines to Darwin, in northern Australia. While nominally amounting to 2500 Marines, the actual daily presence fluctuates. It is expected, however, that the USMC contingent will eventually also include fixed-wing aircraft and associated ground-support personnel. The Marines do not constitute a permanent presence in Australia, in keeping with Australian sensitivities about permanent American bases on Australian soil. Similarly, the United States jointly staffs the Joint Defence Facility Pine Gap and the Joint Geological and Geophysical Research Station at Alice Springs, and has access to the Naval Communication Station Harold E. Holt in Western Australia, including the space surveillance radar system there.

Finally, the United States is granted access to a number of facilities in Asian states on a contingency or crisis basis. Thus, U.S. Air Force units transited Thailand’s U-Tapao Air Base during the first Gulf War and in the Iraq War, but does not maintain a permanent presence there. Similarly, the U.S. Navy has conducted port visits to Vietnam.

**Conclusion**

The Asian strategic environment is extremely expansive, as it spans half the globe, with a variety of political relationships among states that have wildly varying capabilities. The region includes longstanding American allies with relationships dating back to the beginning of the Cold War, as well as recently established states and some longstanding adversaries (e.g., North Korea).

American conceptions of the region must therefore start from the physical limitations imposed by the tyranny of distance. Moving forces within the region, never mind to it, will take time and require extensive strategic lift assets, as well as sufficient infrastructure (such as sea and aerial ports of debarkation that can handle American strategic lift assets) and political support. At the same time, the complicated nature of intra-Asian relations, especially unresolved historical and territorial issues, means that, unlike Europe, the United States cannot necessarily count on support from all its regional allies in event of any given contingency.

**Scoring the Asia Operating Environment**

As with the operating environments of Europe and the Middle East, we assessed the characteristics of Asia as they would pertain to support U.S. military operations. Various aspects of the region facilitate or inhibit the ability of the U.S. to conduct military operations to defend its vital national interests against threats. Our assessment of the operating environment utilized a five-point scale, ranging from “very poor” to “excellent” conditions and covering four regional characteristics of greatest relevance to the conduct of military operations:

1. **Very Poor.** Significant hurdles exist for military operations. Physical infrastructure is insufficient or nonexistent and the region is politically unstable. In addition, the U.S. military is poorly placed, or absent, and alliances are nonexistent or diffuse.
2. **Unfavorable.** A challenging operating environment for military operations marked by inadequate infrastructure, weak alliances and recurring political instability. The U.S. military is inadequately placed in the region.

3. **Moderate.** A neutral to moderately favorable operating environment. Adequate infrastructure exists as does a moderate alliance structure and acceptable levels of political stability in the region. The U.S. military is adequately placed.

4. **Favorable.** A favorable operating environment. Good infrastructure, strong alliances, and a stable political environment. The U.S. military is well placed in the region for future operations.

5. **Excellent.** An extremely favorable operating environment. Well-established and -maintained infrastructure, strong capable allies, and a stable political environment in the region. The U.S. military is exceptionally well placed to defend U.S. interests.

The key regional characteristics consisted of:

a. **Alliances:** Alliances are important for interoperability and collective defense as allies would be more likely to lend support to U.S. military operations. There are various indicators that give insight into the strength or health of an alliance. These include whether the U.S. trains regularly with countries in the region, has good interoperability with the forces of an ally, and shares intelligence with nations in the region.

b. **Political Stability:** Political stability brings predictability for military planners when considering such things as transit, basing, and overflight rights for U.S. military operations. The overall degree of political stability indicates whether U.S. military actions would be hindered or enabled and considers, for example, whether transfers of power in the region are generally peaceful and whether there been any recent instances of political instability in the region.

c. **U.S. Military Positioning:** Having military forces based or equipment and supplies staged in a region greatly facilitates the United States’ ability to respond to crises and, presumably, more quickly achieve successes in critical “first battles.” Being routinely present in a region also assists in maintaining familiarity with its characteristics and the various actors who might act to assist or thwart U.S. actions. With this in mind we assessed whether or not the U.S. military was well-positioned in the region. Again, indicators included bases, troop presence, pre-positioned equipment, and recent examples of military operations (including training and humanitarian) launched from the region.

d. **Infrastructure:** Modern, reliable, and suitable infrastructure is essential to military operations. Airfields, ports, rail lines, canals, and paved roads enable the U.S. to stage, launch operations from, and logistically sustain combat operations. We combined expert knowledge of regions with publicly available information on critical infrastructure to arrive at our overall assessment of this metric. For Asia, we arrived at these average scores (rounded to the nearest whole number):

- **Alliances:** 4 — **Favorable**
- **Political Stability:** 3.33 (3) — **Moderate**
- **U.S. Military Positioning:** 3.33 (3) — **Moderate**
- **Infrastructure:** 3 — **Moderate**

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- **U.S. Military Positioning:** 3.33 (3) — **Moderate**
- **Infrastructure:** 3 — **Moderate**

Aggregating to a regional score of: **Moderate**
## Operating Environment: Asia

<table>
<thead>
<tr>
<th></th>
<th>VERY POOR</th>
<th>UNFAVORABLE</th>
<th>MODERATE</th>
<th>FAVORABLE</th>
<th>EXCELLENT</th>
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Conclusion: Scoring the Global Operating Environment

The U.S. is a global power. Its security interests are global and threats to those interests could emerge from any region. Consequently, the U.S. military must be ready to operate in any region when called upon to do so, and it must account for the range of conditions it might encounter when planning for potential military operations. This informs its decisions on the type and amount of equipment it purchases (especially to transport and sustain the force), where it might operate from, and how easy (or not) it will be to project and sustain combat power when engaged with the enemy.

Aggregating the three regional scores provides a Global Operating Environment score.

Global Operating Environment

<table>
<thead>
<tr>
<th>Region</th>
<th>VERY POOR</th>
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<tr>
<td>OVERALL</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
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</tbody>
</table>

Global Operating Environment: **Moderate**
Endnotes:

1. The Republic of Macedonia completed its membership action plan to join the alliance in 2008, but Greece has repeatedly vetoed its membership over a dispute regarding Macedonia’s constitutional name.


4. U.S., Canada, Norway, and Denmark (Greenland). The non-NATO Arctic sea power is Russia.


14. Ibid.

15. Ibid.


17. O’Dwyer and Adamowski, “Ukraine Crisis Revives Spending.”


19. Furthermore, NATO uses a very generous definition to calculate the 2 percent benchmark. It includes the core defense budget, extra expenditures on operations, and expenditures on military pensions. Even so, only a handful of countries meet the benchmark.


26. Ibid.
36. Tran, “French Minister Asked to Clarify Budget-Cut Reports.”
39. Ibid.


61. For example, Sir Mark Sykes, Britain’s lead negotiator with the French on carving up the Ottoman Empire in the Middle-East, during a 1916 meeting in Downing Street, pointed to the map and told the Prime Minister that for Britain’s sphere of influence in the Middle-East: “I should like to draw a line from the e in Acre [modern day Israel] to the last k in Kirkuk [modern day Iraq].” For more information see: James Barr, A Line in the Sand: Britain, France, and the Struggle that Shaped the Middle East (Great Britain: Simon and Schuster UK Ltd, 2011), pp. 7-20. See also, Margaret McMillan, Paris 1919: Six Months That Changed the World (New York: Random House, 2003).


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71. Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.


77. The MNNA designation was established during the dying days of the Cold War in 1989 to acknowledge American partners that contribute to U.S. security, defense, and broader geopolitical goals but are not members of NATO. The first tranche of countries to become MNNA included South Korea, Israel, Egypt, Australia, and Japan. The most recent country to be awarded this title is Afghanistan, which was so designated in 2012 by President Barack Obama.


82. Created in 1981, the GCC was mainly founded to promote economic and cultural matters between the Gulf States. Security, at the time, was also a reason but a minor one. Along with its role as an intergovernmental political organization, there are aspirations to someday create an economic union based on a common currency. The GCC also functions as a regional defense planning council.


88. Ibid.


94. Ibid.

95. Ibid.


108. Ibid.

109. Ibid.

110. Ibid.


113. Trager, “Resuming Military Aid to Egypt.”


116. Schenker and Trager, “Egypt’s Arms Deal with Russia.”


118. Ibid., p. 328.

119. During 1967 and 1990, South Yemen, officially known as the People’s Democratic Republic of Yemen, was a socialist state in the southeastern provinces of the present-day Republic of Yemen.


121. Ibid.


142. Ibid.


150. Ibid.


153. Ibid.


162. Interview with Japanese officials (on file with The Heritage Foundation).
184. Ibid.
187. Ibid., pp. 137-140 and pp. 312-315.
Assessing Threats to U.S. Vital Interests

The United States is a global power with global interests. Scaling its military power to threats requires judgments with regard to the importance and priority of those interests, whether the use of force is the most appropriate and effective means of addressing the threats to them, and how much and what types of force are needed to defeat such threats.

This Index focuses on three fundamental, vital national interests:

- Defense of the homeland;
- Successful conclusion of a major war having the potential to destabilize a region of critical interest to the U.S.; and
- Preservation of freedom of movement within the global commons: the sea, air, and outer space domains through which the world conducts business.

The geographical focus of the threats in these areas is further divided into three broad regions: Asia, Europe, and the Middle East.

This is not to say that these are America’s only interests. Among many others, the U.S. has an interest in the growth of economic freedom in trade and investment, the observance of internationally recognized human rights, and the alleviation of human suffering beyond our borders. None of these interests, however, can be addressed principally and effectively by the use of military force, nor would threats to these interests result in material damage to the foregoing vital national interests. These additional American interests, however important they may be, therefore will not be used in this assessment of the adequacy of current U.S. military power.

We reference two public sources throughout the document as a mechanism to check our work against that of other recognized professional organizations in the field of threat analysis: the International Institute for Strategic Studies’ annual The Military Balance and the annual Worldwide Threat Assessment of the US Intelligence Community (WWTA). The latter serves as a reference point produced by the U.S. government against which each threat assessment in this Index was compared. We note any differences between assessments in this Index and the work of the two primary references in summary comments.

The juxtaposition of our detailed, reviewed analysis against both The Military Balance and the WWTA revealed two stark limitations in these external sources. First, The Military Balance is an excellent, widely consulted source, but it is only a count of military hardware without context in terms of equipment capability, maintenance and readiness, training, manpower, integration of services, and doctrine. Second, the WWTA omits many threats and is bare in its analysis of those it does address. Moreover, it does not reference underlying strategic dynamics that are key to the evaluation of threats and that may be more predictive of future threats than a simple extrapolation of current events.
We suspect this is a consequence of the U.S. intelligence community’s withholding its very sensitive assessments derived from classified sources from public view. While such a policy is quite understandable given the need to avoid compromising sources and methods of collection, it does mean that the WWTA’s views on threats are of limited value to policymakers, the public, and analysts working outside of the government. Surprisingly, The Heritage Foundation’s *Index of U.S. Military Strength* may actually serve as a useful correction to the systemic deficiencies we found in these open sources.

Measuring or categorizing a threat is problematic since there is no absolute reference that assists in assigning a quantitative score. There are two fundamental aspects of threats that are germane to this *Index*: the desire or intent of the threatening entity to achieve their objective and their physical ability to do so. Physical ability is the easier of the two to assess while intent is quite hard. A useful surrogate for intent is observed behavior since this is where we see intent become manifest through action. Thus, a provocative, belligerent pattern of behavior that seriously threatens U.S. vital interests would be very worrisome. Similarly, a comprehensive ability to accomplish objectives even in the face of U.S. military power would cause serious concern for U.S. policymakers while weak or very limited abilities would lessen U.S. concerns even if an entity behaved provocatively vis-à-vis U.S. interests. Each categorization used is meant to convey a word picture of how troubling a threat’s behavior and set of capabilities has been during the assessed year.

The five ascending categories for observed behavior are:

- benign,
- assertive,
- testing,
- aggressive, and
- hostile

The five ascending categories for physical capability are:

- marginal,
- aspirational,
- capable,
- gathering, and
- formidable

These characterizations—behavior and capability—form two halves of an overall assessment of threats to U.S. vital interests.

As noted, the following assessments are arranged by region (Europe, Middle East, and Asia) to correspond with the flow of the chapter on operating environments and then by U.S. vital interest (threat posed by an actor to the U.S. homeland, potential for regional war, and freedom of global commons) within each region. Each actor is then discussed in terms of how and to what extent its behavior and physical capabilities have posed a challenge to U.S. interests in the assessed year.

### Threat Categories

<table>
<thead>
<tr>
<th>Behavior</th>
<th>HOSTILE</th>
<th>AGGRESSIVE</th>
<th>TESTING</th>
<th>ASSERTIVE</th>
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<tr>
<td>Capability</td>
<td>FORMIDABLE</td>
<td>GATHERING</td>
<td>CAPABLE</td>
<td>ASPIRATIONAL</td>
<td>MARGINAL</td>
</tr>
</tbody>
</table>
Europe

Threats to the Homeland

Russia is the only state adversary in the region that possesses the capability, both with conventional and with non-conventional means, to threaten the U.S. homeland. Although there is no indication that Russia plans to use its capabilities against the United States absent a broader conflict involving America’s NATO allies, the plausible potential for such a scenario serves to sustain their strategic importance. Russia’s explicitly belligerent behavior during 2014 further adds to the necessity that the U.S. give due consideration to the ability of Russia to place the security of the U.S. at risk.

Russian Strategic Nuclear Threat. Russia possesses the largest nuclear weapons arsenal among the nuclear powers (when short-range nuclear weapons are included). It is one of the few nations with the capability to destroy many targets in the U.S. homeland and in U.S. allies and to threaten and prevent other nations from having free access to the commons. Russia has both intercontinental and short-range ballistic missiles and a varied nuclear weapons arsenal that is capable of being delivered by sea, land, and air.

Nuclear weapons continue to play a very prominent role in Russia’s military strategy. According to Aleksey Arbatov, a scholar at the Carnegie Moscow Center’s Nonproliferation Program, Russia has lost a leading role in global affairs if measured by criteria of national power with the exceptions of its nuclear arsenal, its territorial size, and the extent of its natural resources—a condition clearly appreciated by Russia’s leadership.3

Russia is currently relying on its nuclear arsenal to ensure its invincibility against any kind of enemy, to intimidate European powers, and to deter counters to its predatory behavior in its “near abroad,” primarily in Ukraine but also concerning the Baltic states.4 The arsenal provides Russia with a protective umbrella under which it can modernize its conventional forces at a deliberate pace. While its nuclear deterrent protects Russia from a large-scale attack, a modern and flexible military is necessary for Russia to be able to fight local wars such as the one in Georgia in 2008 or Ukraine in 2014. Russian military doctrine allows for the use of nuclear weapons in local and regional conventional wars.

Modernized weapons and equipment in the Russian armed forces are projected to increase to 30 percent of the total force by 2015 and ultimately to 70 percent in 2020. In June 2013, the Russian Defense Ministry signed 737 billion rubles ($22.5 billion) worth of contracts as a part of its arms procurement program for 2013.5 This ambitious work is based on the government’s armament program for 2011 to 2020. According to this plan, strategic nuclear forces are the main beneficiary of modernization.6

The Defense Ministry states that the new structure of the armed forces is being created with the goal of increased flexibility, mobility, and readiness for combat in limited-scale conflicts. Strategic Rocket Forces are the first line of defense (and offense) against Russia’s great-power counterparts.7

Russia has two strategies of nuclear deterrence. The first is based on a threat of massive launch-on-
warning and retaliatory strikes to deter a nuclear attack; the second is based on a threat of limited demonstration and “de-escalation” nuclear strikes to deter and terminate a large-scale conventional war. Russia’s reliance on nuclear weapons is based partly on their small cost relative to conventional weapons (especially in terms of their effect) and on Russia’s inability to attract sufficient numbers of high-quality servicemembers. Thus, Russia sees its nuclear weapons as a means with which to offset the lower quantity and quality of its conventional forces.

Moscow has repeatedly threatened U.S. allies in Europe with nuclear deployments and even preemptive nuclear strikes. The Russians justify their belligerent rhetoric by pointing to U.S. missile defense system deployments in Europe. U.S. missile defense systems in Europe, however, are not scaled or postured to mitigate Russia’s ballistic missile and nuclear weapons advantage significantly.

In early 2014, U.S. news outlets reported alleged Russian violations of the Intermediate-Range Nuclear Forces (INF) Treaty, which bans the testing, production, and possession of intermediate-range missiles. According to Keith Payne and Mark Schneider, “These Russian actions demonstrate the importance the Kremlin attaches to its new nuclear strike capabilities. They also show how little importance the Putin regime attaches to complying with agreements that interfere with those capabilities.”

WWTA: The WWTA does not reference the threat to the American homeland from Russian nuclear weapons.

Summary: The sizable Russian nuclear arsenal remains the only threat to the existence of the U.S. homeland emanating from Europe and Eurasia. While the potential for use of this arsenal remains extremely low, it is an important capability in Russian security calculations, and it will continue to play a central strategic role in shaping both Russia’s military and political thinking and its level of aggressive behavior beyond its borders.

Threat of Regional War

There are three areas of critical interest to the U.S. in the European region where Russia poses a direct threat: Central and Eastern Europe, the Arctic or High North, and the Southern Caucasus.

Russian Pressure on Central and Eastern Europe. Moscow poses a security challenge to members of NATO that border Russia. Although the likelihood of a conventional Russian attack against the Baltic States is low, primarily because it would trigger a NATO response, Russia has used non-conventional means to erode the political systems and legitimacy of these states. The Baltic States view Russia as a significant threat.

Due to decades of Russian domination, the Baltic States factor Russia into their military planning and foreign policy formulation in a way that is simply unimaginable in many Western European countries and North America. Estonia and Latvia have sizable ethnic Russian populations, and there is a concern that Russia might exploit the situation as a pretext for aggression. This view is not without merit, considering Moscow's irredentist rhetoric and Russia's use of this technique to annex Crimea.

Russia has also demonstrated a willingness to use military force to change the borders of modern Europe. When Kremlin-backed Ukrainian president Viktor Yanukovych failed to sign an Association Agreement with the European Union (EU) in 2013, months of street demonstrations led to his ouster in early 2014. Russia responded by violating Ukraine’s territorial integrity, sending troops, aided by pro-Russian local militia, to occupy the Crimean Peninsula under the pretext of “protecting Russian people.” This led to Russia's eventual annexation of Crimea. Such annexation by force is unprecedented in the 21st century.

Moscow has not stopped at Crimea. In May 2014, inspired by events in Crimea, separatist leaders in Ukraine’s east declared the Lugansk People’s Republic and the Donetsk People’s Republic, leading to creation of the Federal State of Novorossiya. Russia has continued to back separatist factions in the Donbass region of eastern Ukraine with advanced weapons, technical and financial assistance, and the use of Russian conventional and special operations forces.

The number of Russian troops operating in Ukraine has fluctuated depending on the security situation on the ground. For example, when Ukrainian forces were making headway against the separatist factions, Moscow responded by sending an estimated 5,000 troops into Ukraine. Since September 2014, there has been a fragile cease-fire, which has resulted in de facto partition of the country. While the formal cease-fire has held, fighting has continued between Ukrainian forces and forces of pro-Russia rebels or regular Russian troops fighting alongside them. Russian convoys including howit-
zers, tanks, and air defense systems have continually crossed the border into Ukraine since the cease-fire took hold. Additionally, General Philip Breedlove, commander of NATO forces in Europe, confirmed that Russia moved forces “that are capable of being nuclear” into Crimea, although it remains unclear whether nuclear forces have indeed been deployed to the Crimean peninsula.\textsuperscript{12}

The other countries in Central and Eastern Europe also see Russia as a threat, although to varying degrees. Most tend to be almost completely reliant on Russia for their energy resources, some have felt the sharp end of Russian aggression in the past, and all of them were once in the Warsaw Pact and fear being forced back into a similar situation.

In addition to the historical experiences that shape the aggressive image of Russia among those in Central and Eastern Europe, Moscow’s behavior in the region has been a cause for concern. Russia has deployed Iskander missiles in the Kaliningrad Oblast enclave,\textsuperscript{13} and there have been reports that Russia has deployed tactical nuclear weapons in Kaliningrad.\textsuperscript{14}

Russia also has dedicated resources to major training exercises involving tens of thousands of troops that many in Eastern Europe fear are directed at them. One exercise scenario in 2009 included a nuclear attack on Warsaw.\textsuperscript{15} In 2013, Russia and Belarus took part in joint exercises called Zapad 2013. According to official Russian numbers, 12,000 Russian troops and 10,400\textsuperscript{16} Belarusian troops participated; however, some Western observers believe the total number of troops was closer to 70,000.\textsuperscript{17}

While there is nothing necessarily wrong with Russia conducting military exercises, there are aspects of Zapad 2013 of which the U.S. should be aware. The exercise took part in the Western Military District of Russia (including the Baltic and Barents Seas), an area that has recently seen an increase in Russian troops and military activity. The exercise was intended to test the efficacy of Russia’s military modernization efforts in its Western Military District\textsuperscript{18} and its ability to reinforce the Western Military District rapidly from less vital military districts. For example, Zapad 2013 included the mobilization of 20,000 troops from internal Russian districts to support the Western Military District.\textsuperscript{19}

The Zapad exercises also highlighted the growing military and political partnership between Russia and Belarus, a particular concern for U.S. allies in the Baltics and Poland. According to the Russians, the Zapad 2013 scenario envisioned the “deterioration of relations between states due to inter-ethnic, and ethno-religious controversies, and territorial claims.”\textsuperscript{20} The thin veneer of this scenario barely masked that NATO was the unstated adversary in the Zapad 2013 exercise.\textsuperscript{21}

**WWTA: The WWTA notes that Russia continues to place significance on ties with Western economic and political interests that have been pursued by nations in Eastern and Central Europe, including Ukraine. The WWTA highlights the EU (as well as China) as a challenge to Russia’s pursuit of Eurasian integration.**

**Summary:** NATO allied countries in Eastern and Central Europe view Russia as a threat, a fear that is not unfounded considering Russian aggression against Ukraine and Georgia. The threat of conventional attack against a NATO member state by Russia remains low, but Russia’s grasp and use of unconventional warfare against neighboring countries should remain a top issue for U.S. and NATO planners.

**Militarization of the High North.** The Arctic region is home to some of the roughest terrain and harshest weather found anywhere in the world. Increasingly, Arctic ice is melting during the summer months, causing new challenges for the U.S. in terms of Arctic security. Many of the shipping lanes currently used in the Arctic are a considerable distance from search and rescue (SAR) facilities, and natural resource exploration that would be considered routine in other locations in the world is complex, costly, and dangerous in the Arctic.

The U.S. is one of five littoral Arctic powers and one of only eight countries that have territory located above the Arctic Circle, the area just north of 66° north latitude and that includes portions of Norway, Sweden, Finland, Russia, Canada, Greenland, Iceland, and the United States.

Arctic actors take different approaches to military activity in the Arctic. Although the security challenges currently faced in the Arctic are not yet military in nature, there is still a requirement for military capability in the region that can support civilian authorities. For example, civilian SAR and natural disaster response in such an unforgiving environment can be augmented by the military.

Even so, Russia has taken steps to militarize its presence in the region. Russia’s Northern Fleet, which is based in the Arctic, counts for two-thirds
of the Russian Navy. A new Arctic command will be established by 2015 to coordinate all Russian military activities in the Arctic region.Over the next few years, two new so-called Arctic brigades will be permanently based in the Arctic, and Russian Special Forces have been training in the region. Old Soviet-era facilities have been reopened, for example, putting the airfield on the Kotelny Island into use for the first time in almost 30 years, and an expedition was launched in early September 2014 this year to establish support capabilities on the New Siberian Islands. The ultimate goal is for Russia to deploy a combined arms force in the Arctic by 2020, and it appears they are on track to accomplish this.

The NATO Alliance continues to debate what, if any, role it should have in the Arctic. Although NATO’s 2010 Strategic Concept was praised for acknowledging new security challenges for the alliance, such as cyber and energy security, Arctic security was not included. In fact, the word Arctic cannot be found in either the 2010 Strategic Concept or the 2012 Chicago NATO summit declaration.

Inside NATO, different U.S. allies view the Arctic differently. Norway is a leader in promoting NATO’s role in the Arctic. Although Norway has contributed troops to Iraq and Afghanistan and was one of only seven NATO members to carry out air strikes during the Libya campaign, the primary force driver for its armed forces is still Arctic security. The Norwegians have invested extensively in Arctic defense capabilities, and Norwegian officials, both military and civilian, want to see NATO playing a larger role in the Arctic.

The Norwegian position regarding NATO’s role in this area is in contrast to Canada’s. Like Norway, Canada has invested heavily in its Arctic defense and security capabilities. Unlike Norway, the Canadians have made it clear that they do not want NATO involved. Generally speaking, there is a concern inside Canada that non-Arctic NATO countries favor an alliance role in the Arctic because it would afford them influence in an area where they otherwise would have none.

WWTA: The WWTA notes that, in the view of some states, countries can gain a potential advantage by positioning military forces in the Arctic region. Separately, the WWTA notes that Russia’s military has gained increasing prominence with operations in the Arctic, although the WWTA stops short of making any judgments about Russian intentions or the potential for competing interests in the Arctic to lead to conflict.

Summary: While NATO has been slow to turn its attention toward the Arctic, Russia continues to develop and increase its military capabilities in the region. The likelihood of armed conflict remains low, but physical changes in the region mean that the posture of players in the Arctic will continue to evolve. It is clear that Russia intends to exert a dominant influence.

Threat from Russian Propaganda. Russia has used propaganda stealthily and consistently to garner support for its foreign policies. In the 2013 Concept of the Foreign Policy of the Russian Federation, the Russian government is explicit about its aims to utilize mass media to further its foreign policy aims.

In its public diplomacy, Russia will seek to ensure its objective perception in the world, develop its own effective means of information influence on public opinion abroad, strengthen the role of Russian mass media in the international information environment providing them with essential state support, as well as actively participate in international information cooperation, and take necessary measures to counteract information threats to its sovereignty and security.

Russian media are hardly independent. In 2013, Russia ranked 148th out of 179 countries in Reporters Without Borders’ World Press Freedom Index. The state utilizes every tool in its arsenal, from regulatory and legal changes and enforcement to intimidation and murder of independent-minded reporters.

While much of its propaganda is meant for a domestic Russian audience, Russia is actively working to influence audiences abroad as well. Russia spends around €100 million ($136 million) a year to support Russian media abroad. One such vehicle for propaganda is Russia Today (RT) a TV channel launched in 2005. RT currently broadcasts in English, Spanish, and Arabic, intending to influence audiences in regions key to its interests through 22 bureaus in 19 countries. Ruptly, RT’s news service, was launched to compete with the Associated Press and Reuters.

Russia’s plans have met with some success abroad; currently, RT clips receive more views on YouTube than CNN, although still less than the BBC. Also, while Russian state propaganda instruments have
There is division inside NATO as to the role of the alliance in the Arctic. Norway is a leader in promoting NATO’s role in the Arctic.

Most of the national interests of Arctic states are not military in nature, but rather economic concerns involving shipping routes, fishing, and mineral rights. Even so, Russia has taken steps to militarize the Arctic. Russia’s Northern Fleet, based at Severomorsk, accounts for two-thirds of the Russian Navy. A new Arctic command called the Northern Fleet–Joint Strategic Command will be established by 2015 to coordinate all Russian military activities in the region.

Over the next few years, two new brigades will be permanently based in the Arctic region, and Russian Special Forces have been training in the region. Old Soviet-era facilities have been reopened and modernized above the Arctic Circle. These will provide a string of military fortresses along the important Northern Sea Route. In light of Russia’s recent behavior in Ukraine, the U.S. and NATO should continue to monitor Russian activity in the Arctic.
proliferated in Western capitals, the number of Western journalists inside Russia has decreased. According to Der Spiegel, in regard to European media inside Russia, “many newspapers and broadcasters have scaled back their bureaus in Moscow or closed them altogether in recent years.”

Russian propaganda was in full force during the country’s invasion of Ukraine and subsequent annexation of Crimea and continued stealth invasion of eastern Ukraine. Russian media have worked to push the false claim that Russia is simply defending ethnic Russians in Ukraine from far-right-wing thugs. Russian media also have claimed that the government in Kiev is to blame for the violence that has enveloped parts of the country or that the U.S. has instigated unrest in Ukraine.

Russian propaganda efforts are not limited to TV channels; there are widespread reports of the Russian government’s paying people to post comments on Internet articles that parrot the government propaganda. Twitter has also been utilized in Ukraine as a means to disseminate false or exaggerated claims from the Russian government.

Russian propaganda poses the greatest threat to NATO allies that have a significant ethnic Russian population: the Baltic States. Many ethnic Russians in these countries get their news through Russian-language media (especially TV channels) that give the official Russian state line. While some countries like Lithuania and Latvia have temporarily banned certain Russian TV stations such as RTR Rossiya in light of Russian aggression in Ukraine, many American allies recognize that a gap exists for reaching ethnic Russians in their vernacular. In an effort to provide an independent alternative Russian-language media outlet, Estonia, Latvia, and Lithuania are planning a joint Russian-language TV channel to counter Russian propaganda efforts in their region.

WWTA: The WWTA does not reference the threat to American interests and allies from Russian propaganda employed to foment regional instability.

Summary: Russia has used propaganda consistently and aggressively to advance its foreign policy aims. This is unlikely to change and will remain an essential element of Russian aggression and planning. The potential use of propaganda to stir up agitation in the Baltic States makes this a continued threat to regional stability and a potential threat to the NATO alliance.

Russian Destabilization in the Southern Caucasus. The Southern Caucasus sits at a crucial geographical and cultural crossroads and has proven to be strategically important both militarily and economically for centuries. Although the countries in the region (Armenia, Georgia, and Azerbaijan) are not formally part of NATO and therefore do not receive a security guarantee from the U.S., they have participated to varying degrees in NATO and U.S.-led operations—especially Georgia, which has aspirations to join NATO.

The Southern Caucasus region has played a major role in NATO’s Northern Distribution Network (NDN). As U.S. Ambassador to Azerbaijan Matthew Bryza said in 2011, “virtually every U.S. Soldier deployed to Afghanistan has flown over Azerbaijan.” The Georgian port of Poti has been responsible for as much as 30 percent of the cargo transported through the NDN. In order to operate in the region, the U.S. needs access to South Caucasian air, land, and maritime space.

Russia views the Southern Caucasus as being in its natural sphere of influence and stands ready to exert its influence in the region by force if necessary. In August 2008, Russia invaded Georgia, coming as close as 15 miles to the capital city of Tbilisi. Six years later, several thousand Russian troops occupied the two Georgian provinces of South Ossetia and Abkhazia.

Today, Moscow continues to take advantage of ethnic divisions and tensions in the Southern Caucasus to advance pro-Russian policies that are often at odds with America’s or NATO’s goals in the region. However, Russia’s influence is not restricted to soft power. In the Southern Caucasus, the coin of the realm is military might. It is a rough neighborhood surrounded by instability and insecurity reflected in terrorism, religious fanaticism, centuries-old sectarian divides, and competition for natural resources.

Russia maintains a sizable military presence in Armenia based on an agreement giving Moscow access to bases in that country for 49 years. The bulk of this force, consisting of approximately 5,000 soldiers and dozens of fighter planes and attack helicopters, is based around the 102nd Military Base. Russia has long had difficulty supplying these forces, especially since a transit right through Georgian airspace has been closed and Turkey refuses transit. This has left a reliance on Iran, which for obvious reasons is not ideal for Russia.
Consequently, there is a concern that Russia is exploiting ethnic tensions in the ethnic Armenian-populated Georgian province of Samtskhe–Javakheti in order to create a sphere of influence linking Russia with Armenia through South Ossetia and Samtskhe–Javakheti. It has been reported that Russia is issuing Russian passports to ethnic Armenians living in the region. There is a fear that, similar to what happened in Crimea, a serious separatist movement backed by Moscow could attempt to secede from Georgia. More important for Russia, it would help to establish a land corridor between Russia and Armenia through South Ossetia and Samtskhe–Javakheti. It is clear that Russian designs on Samtskhe–Javakheti would include an attempt to dismember the territorial integrity of Georgia by dividing the country along sectarian lines.

Samtskhe–Javakheti is strategically important for a number of reasons. The Baku–Tbilisi–Ceyhan pipeline and the South Caucasus Pipeline, carrying oil and gas, respectively, from the Caspian to the Mediterranean, pass through the province. As the possibility of increased Central Asian gas transit to Europe becomes more likely, the South Caucasus Pipeline could become vital for Europe. This is especially true at a time when many European countries are dependent on Russia for their energy resources. The Kars–Tbilisi–Baku railway, which is expected to open in 2015, also runs through Samtskhe–Javakheti with the goal of eventually transporting 3 million passengers and over 15 million tons of freight each year.

The Nagorno–Karabakh conflict is another area of instability in the region. The conflict between Armenia and Azerbaijan started in 1988 when Arme-
nia made territorial claims to Azerbaijan’s Nagorno-Karabakh Autonomous Oblast. By 1992, Armenian forces and Armenian-backed militias occupied 20 percent of Azerbaijan, including the Nagorno-Karabakh region and seven surrounding districts. A cease-fire agreement was signed in 1994, and the conflict has been described as “frozen” since then.

There are concerns that the Nagorno-Karabakh conflict offers another opportunity to exert malign influence and consolidate Russian power in the region. As Dr. Alexandros Petersen, a highly respected expert on Eurasian security, has noted:

> It is of course an open secret to all in the region as well as to Eurasianists in the EU that the Nagorno-Karabakh dispute is a Russian proxy conflict, maintained in simmering stasis by Russian arms sales to both sides so that Moscow can sustain leverage over Armenia, Azerbaijan and by its geographic proximity Georgia.

Senior Russian leaders have made their views quite open regarding whose side Moscow would support in the event of a conflict. In an interview in 2013, Colonel Andrey Ruzinsky, the commander of Russian forces in Armenia, affirmed Russia’s preparedness and intention to “join the armed conflict against Azerbaijan if it “decides to restore jurisdiction over Nagorno-Karabakh by force.”

After Russia’s actions in Crimea and the weak response from the West, Moscow could be emboldened to seek greater but riskier dividends from turning the frozen Nagorno-Karabakh conflict into a hot war, thereby attaining even greater leverage and latitude for follow-on actions. The Southern Caucasus might seem distant to many American policymakers, but the spillover effect of ongoing conflict in the region can have a direct impact on both U.S. interests and the security of America’s partners, as well as on Turkey and other countries that are dependent on oil and gas transiting the region.

**Summary:** Russia views the Southern Caucasus as a vital theater and uses a multitude of tools that include military aggression, economic pressure, and stoking of ethnic tensions to exert influence and control, usually to promote outcomes that are at odds with U.S. interests.

**Threats to the Commons**

Other than cyberspace, and to some extent airspace, the commons are relatively secure in the European region. This is especially true when it comes to the security of and free passage through shipping lanes in the region. The maritime domain is heavily patrolled by the navies and coast guards of NATO and NATO partner countries. Except in remote areas in the Arctic Sea, search and rescue capabilities are readily available. Maritime-launched terrorism is not a significant problem, and piracy is virtually nonexistent in the European region.

**Airspace.** There has been an increasing number of aggressive Russian air force activities near the airspace of other European countries, both NATO and non-NATO. The provocative and hazardous behavior of the Russian armed forces or groups sponsored by Russia pose a threat to civilian aircraft in Europe as demonstrated with the downing of Malaysia Airlines Flight MH17, killing all 283 passengers and 15 crew on board over the skies of southeastern Ukraine. In addition, there have been several incidents of Russian military aircraft flying in Europe without using their transponders—for example, when an SAS plane almost collided with a Russian SIGINT plane on March 3, 2014.

Incidents of Russian military aircraft flying near the airspace of American allies in Europe have increased in recent years. NATO’s Baltic Air Policing mission, begun in 2004, has helped defend the airspace above Estonia, Latvia, and Lithuania from incursions by Russian fighters, bombers, and surveillance aircraft. In 2004, NATO planes were scrambled only once in the Baltic region to confront Russian planes flying close to Baltic airspace; in 2012, jets were scrambled 46 times.

Since Russia’s annexation of Crimea, the number of air incursions has been on the rise. In June 2014, three British Royal Air Force (RAF) fighters that were part of the NATO Baltic air policing mission intercepted seven Russian planes, including one Tu22 Backfire bomber, that were flying near Baltic airspace. This was the highest number of such interceptions for a single day since the beginning of the Baltic Air Policing mission.

The RAF also responds regularly to Russian aircraft closer to home off the coast of Great Britain. In 2013, there were 17 incidents of the RAF scrambling to respond to Russian planes approaching British airspace. The Norwegian air force has also seen an uptick in the number of identified Russian planes...
flying close to Norway’s airspace. In 2011, Norway scrambled fighter jets 34 times and identified 48 Russian planes; in 2012, the number of scramblings rose to 41 with 71 planes identified.\footnote{51}

Non-NATO members have also been the target of aggressive Russian aerial activity. In March 2013, two Russian bombers and four fighter jets took off from St. Petersburg and carried out a mock strike on targets in the Stockholm region. Swedish experts have assessed that this mock attack in fact simulated a nuclear strike against two targets in Sweden.\footnote{52} The Swedish air force did not react, as it was on low alert during the Easter break. Instead, NATO scrambled two Danish jets from a base in Lithuania to intercept the Russian planes.\footnote{53}

However irritating (in the case of countries like the United Kingdom) and threatening (as in the case of the Baltic States), Russian aerial activity is nowhere near the levels seen during the Cold War, when it was common to see 500–600 identifications of Russian planes near NATO airspace annually.\footnote{54} Nevertheless, the U.S. and its NATO allies must be prepared to respond to Russia when it tests the airspace of the alliance.

The shooting down of Malaysian Airlines Flight MH17 in July 2014 by Russian-backed separatists in eastern Ukraine showed that a threat to the commons is growing as a result of the continued instability in Ukraine and the arming of separatist forces with advanced surface-to-air missiles by Russia.

WWTA: The WWTA does not reference any threats to the global commons in Europe or Eurasia.

Summary: Despite ongoing Russian aerial activity and the shooting down of Flight MH17, the airspace commons in the region remain relatively secure.

Space. Russia’s space capabilities are robust, but Moscow “has not recently demonstrated intent to direct malicious and destabilizing actions toward U.S. space assets.”\footnote{55}

Director of National Intelligence James Clapper told the Senate Intelligence Committee in February 2014 that “[t]hreats to U.S. space services will increase during 2014 and beyond as potential adversaries pursue disruptive and destructive counter-space capabilities” and that “Chinese and Russian military leaders understand the unique information advantages afforded by space systems and are developing capabilities to disrupt U.S. use of space in conflict.”\footnote{56} In May 2014, General William Shelton, commander of Air Force Space Command, warned of the dangers of U.S. reliance on Russian-made rocket boosters to send half of the nation’s military and intelligence payloads into space, especially in light of tensions following Russia’s invasion of Ukraine.\footnote{57}

WWTA: According to the WWTA, “Russia’s 2010 military doctrine emphasizes space defense as a vital component of its national defense,” and “Russian leaders openly maintain that the Russian armed forces have antisatellite weapons and conduct antisatellite research. Russia has satellite jammers and is also pursuing antisatellite systems.”\footnote{58}

Summary: Despite some interruption of cooperation in space as a result of Russia’s invasion of Ukraine, cooperation on the International Space Station and commercial transactions on space-related technology continued unabated. However, the Ukraine crisis has fueled U.S. efforts to develop alternate sources for rockets and space shuttles. Additionally, Russia has sought to deepen its space cooperation with China as a result.\footnote{59}

Cyber. Perhaps the most contested domain in Europe is the cyber domain. Russian cyber capabilities are often considered to be among the most advanced in the world. In his 2010 book, Cyberwar, former White House cyber coordinator, David Smith, quoted a U.S. official as saying that “The Russians are definitely better, almost as good as we are.”\footnote{60} Such an assessment is not an outlier, as multiple other organizations and reports have noted, from the Worldwide Threat Assessment of the U.S. Intelligence Community to the cybersecurity firm FireEye, which described Russian cyber attacks as “technically advanced and highly effective at evading detection.”\footnote{61}

The two most obvious examples of Russian cyber aggression are the 2007 attack against Estonia and the 2008 attack against Georgia.

- In April 2007, Estonian officials moved the Bronze Soldier, a war memorial to the Soviet liberation of Estonia during World War II, from its public location in central Tallinn to a military cemetery, prompting Russian outrage. Soon thereafter, distributed denial-of-service (DDOS) attacks flooded Estonia, taking down banking and government websites for prolonged periods of time over the course of several weeks.\footnote{62}

- In August 2008, Russia sent its forces into Georgia’s disputed region of South Ossetia. At the same time, at least 54 government, finance, and com-
communication websites were disrupted by hackers, making it difficult for Georgia to communicate with its citizens or with the outside world.\textsuperscript{63}

Furthermore, it is unlikely that the world has seen the full extent of Russian capabilities. Though the cyber attacks on Georgia and Estonia were among the most public such attacks yet seen, they were not conducted by Russian military or intelligence organizations. Rather, both were conducted by Russian “patriotic hackers” who were likely coordinated or sponsored by Russian security forces.

The power and ability of non-governmental cyber forces in Russia points to a unique element of Russian cyber capability: the “unique nexus of government, business, and crime.”\textsuperscript{64} Vast networks of cyber criminals—most notably the “Russian Business Network” before it went underground—create, sell, and use advanced cyber weapons for profit. The Russian government allows such activities because it uses these shadowy hacker collectives for its own purposes, as seen in the cases of Georgia and Estonia.\textsuperscript{65} Furthermore, these criminals are often training and developing new, advanced skills and weapons that increase Russia’s cyber capabilities.\textsuperscript{66}

Worryingly, these are not even Russia’s best military cyber capabilities or organizations, about which little is publicly known. While attacks on Estonia and Georgia were limited to communications, government, and financial systems, that was largely a matter of choice, likely avoiding more serious targets attacks on which could have triggered NATO treaty obligations or other nations’ involvement in these limited conflicts.\textsuperscript{67} Given Russia’s history and known capabilities, Russian cyber weapons to target critical infrastructure and military targets are likely sufficiently robust for a larger, more significant conflict if Russia should need them.

\textit{WWTA}: The U.S. intelligence community notes that Russia’s cyber capabilities, including the establishment of a cyber command by the Russian Ministry of Defense, and continued targeting of the interests of the U.S. and its allies present a host of challenges to the U.S.

\textit{Summary}: Russia’s cyber capabilities are advanced. Russia has shown a willingness in the past to utilize cyber warfare, including against Estonia in 2007 and Georgia in 2008. Russia’s use of cyber capabilities, coupled with the likelihood that the nation possesses more advanced cyber capabilities not yet used, presents a challenge for the U.S. and its interests abroad.

\textbf{Threat Scores by Country}

\textbf{Russia}. Russia is not the threat to U.S. global interests that it was during the Cold War, but it does pose challenges to a range of American interests and those of its allies and friends closest to Russia’s borders. It possesses a full range of capabilities, from ground forces to air, naval, space, and cyber. Russia still maintains the world’s largest nuclear arsenal, and although a strike on the U.S. is highly unlikely, the latent potential of such a strike still gives these weapons enough strategic value vis-à-vis America’s NATO allies and interests in Europe to keep them relevant.

However, as the crisis in Ukraine illustrates, it is Russian provocations far below any scenario involving a nuclear exchange that pose the most serious challenge to American interests, particularly in Central and Eastern Europe, the Arctic, and the Southern Caucasus. It is in these contingencies that its military capabilities are most relevant.

According to the IISS \textit{Military Balance}, among the key weapons in Russia’s inventory are 356 intercontinental ballistic missiles, 2,550 main battle tanks, more than 7,360 armored infantry fighting vehicles, over 9,700 armored personnel carriers, and over 5,436 pieces of artillery. The navy has one aircraft carrier; 64 submarines (including 11 ballistic missile submarines); five cruisers; 18 destroyers; nine frigates; and 82 patrol and coastal combatants. The air force has 1,389 combat-capable aircraft. IISS counts 250,000 members of the army. Russia also has a reserve force of 2,000,000 combined for all armed forces.\textsuperscript{68}

With regard to these capabilities, \textit{The Military Balance} states:

Russia remains a significant continental military power, and is in the process of renewing its nuclear arsenal. The first of the \textit{Borey}-class SSBNs, the \textit{Yuri Dolgoruky}, formally joined the fleet at the beginning of 2013, and is intended as part of a broader recapitalization of the country’s nuclear capability. The armed forces are undergoing a reform process, begun by Defence Minister Anatoly Serdyukov in 2008. His replacement by Sergey Shoigu in November 2012 raised questions about the future of the reform process.
However, main elements, such as the initiative to transform the army towards a combined arms brigade-based structure appear to continue.69

Russia has been investing huge sums of petrodollars in modernizing its armed forces, especially its nuclear arsenal, but Russian forces remain much weaker than at their Soviet peak and face huge problems from corruption and a long-term shortage of recruits thanks to declining birthrates and poor access to decent health care. Although it looked like a stunning success on the TV screens, the Russian military also faced problems during its 2008 invasion of Georgia, particularly in the areas of communications and logistics. It remains to be seen whether Russia has taken the lessons learned from the Georgia conflict to heart, but Russia has shown in Ukraine that it has both the intent and the capability to act militarily.

This Index assesses the overall threat from Russia, considering the range of contingencies, as “aggressive’ and “gathering.”

**Threats: Russia**

<table>
<thead>
<tr>
<th>HOSTILE</th>
<th>AGGRESSIVE</th>
<th>TESTING</th>
<th>ASSERTIVE</th>
<th>BENIGN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FORMIDABLE</th>
<th>GATHERING</th>
<th>CAPABLE</th>
<th>ASPIRATIONAL</th>
<th>MARGINAL</th>
</tr>
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<td>Capability</td>
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Middle East

Threats to the Homeland

Islamist terrorism, in its many forms, remains the most immediate global threat to the safety and security of U.S. citizens at home and abroad, and the majority of actors posing such a threat emanate from the greater Middle East. More broadly, threats to the U.S. homeland and Americans abroad include terrorist threats from non-state actors such as al-Qaeda that use the ungoverned areas of the Middle East as a base from which to plan, train, equip, and launch attacks; terrorist threats from state-supported groups such as Hezbollah; and the developing ballistic missile threat from Iran.

Terrorism Originating from al-Qaeda and Its Affiliates. Although al-Qaeda has been damaged by targeted strikes that have killed key leaders in Pakistan to include Osama bin Laden, the terrorist network has evolved in a decentralized fashion and continues to pose a potent threat to the U.S. homeland from regional affiliates.

Al-Qaeda in the Arabian Peninsula (AQAP) has emerged as one of the leading terrorist threats to homeland security since the al-Qaeda high command was forced into hiding in Pakistan.

AQAP’s Anwar al-Aulaqi, a charismatic American-born Yemeni cleric, reportedly incited several terrorist attacks on U.S. targets before he was killed in a drone airstrike in 2011. He inspired Major Nidal Hassan, who perpetrated the 2009 Fort Hood shootings that killed 13 soldiers, and Umar Farouk Abdulmutallab, the failed suicide bomber who sought to destroy an airliner bound for Detroit on Christmas Day 2009. Aulaqi is also suspected of playing a role in the November 2010 AQAP plot to dispatch parcel bombs to the U.S. in cargo planes.

Yemen has long been a bastion of support for militant Islamism in general and al-Qaeda in particular. Many Yemenis who migrated to Saudi Arabia to find work during the oil boom of the 1970s were exposed to radicalization there. Yemenis made up a disproportionate number of the estimated 25,000 foreign Muslims who flocked to Afghanistan to join the war against the Soviet occupation in the 1980s. They also make up a large segment of al-Qaeda, which was founded by veterans of that war to expand the struggle into a global revolutionary campaign.

Al-Qaeda’s first terrorist attack against Americans occurred in Yemen in December 1992, when a bomb was detonated in a hotel used by U.S. military personnel involved in supporting the humanitarian food relief flights to Somalia. Al-Qaeda launched a much more deadly attack in Yemen in October 2000 when it attacked the USS Cole in the port of Aden with a boat filled with explosives, killing 17 American sailors.

Yemen was a site for the radicalization of American Muslims such as John Walker Lindh, who traveled there to study Islam before being recruited to fight in Afghanistan. Seven Yemeni Americans from Lackawanna, New York, were recruited by al-Qaeda before 9/11. While six were convicted of supporting terrorism and sent to prison, the seventh became a fugitive who later surfaced in Yemen.
Yemen has become increasingly important as a base of operations for al-Qaeda in recent years after crackdowns in other countries. In September 2008, al-Qaeda launched a complex attack on the U.S. embassy in Yemen that killed 19 people, including an American woman. Yemen’s importance to al-Qaeda increased further when al-Qaeda members who had been pushed out of Saudi Arabia merged with the Yemeni branch to form Al-Qaeda in the Arabian Peninsula in January 2009.

AQAP, which is estimated to have approximately 1,000 members, has exploited alliances with powerful, well-armed Yemeni tribes (including the Aulaq tribe from which Osama bin Laden and the radical cleric Aulaqi claimed descent) to establish sanctuaries and training bases in Yemen’s rugged mountains. This is similar to al-Qaeda’s modus operandi in Afghanistan before 9/11 and in Pakistan’s tribal badlands today.

The Islamic State (IS), formerly known as the Islamic State of Iraq and Syria (ISIS), the Islamic State of Iraq, and Al-Qaeda in Iraq, is an al-Qaeda splinter group that seeks to overthrow the governments of Iraq, Syria, Lebanon, and Jordan and establish a nominal Islamic state governed by a harsh and brutal interpretation of Islamic law. Its long-term goals are to launch what it considers a jihad (holy war) to drive Western influence out of the Middle East, destroy Israel, and become the nucleus of a global Islamic empire.

The Islamic State is composed of Sunni Muslims drawn to radical Islamist ideology. Most of its members are Iraqi and Syrian Arabs, although it has attracted a wide range of foreign Islamist militants, especially Arabs from Saudi Arabia, Jordan, Libya, Yemen, and Egypt. The group was established as Al-Qaeda in Iraq (AQI) in 2004 by Abu Musab al-Zarqawi, a Palestinian Islamist extremist born in Jordan who fought in Afghanistan against the Soviet invasion. He was a close associate of Osama bin Laden, although he did not formally join al-Qaeda until 2004 when he was recognized as the leader of Al-Qaeda in Iraq. His organization has always taken a harder line against Shiites, which it denigrates as apostates deserving death, than has the parent al-Qaeda network.

Zarqawi was killed in a U.S. airstrike in 2006, and his organization was decimated by a U.S.-led counterterrorism campaign. The group made a comeback in Iraq after the withdrawal of U.S. troops in 2011 took the pressure off of it and Iraqi Prime Minis-
hostility to the United States, but that could easily change if it consolidates power within Syria. It already poses a potential threat because of its recruitment of a growing number of foreign Islamist militants, including some from Europe and the United States.

U.S. intelligence and counterterrorism officials have warned that Syria’s al-Qaeda offshoots are trying to identify, recruit, and train Americans and other Westerners who have joined the fight in Syria to execute terrorist attacks when they return home. At least 70 Americans and over 1,200 European Muslims have traveled to Syria to support Islamist rebels. At least one American, Moner Mohammad Abusalha, conducted a suicide truck bombing for al-Nusra in northern Syria on May 25, 2014, the first reported suicide attack by an American in Syria.

F.B.I. Director James Comey has stated that tracking Americans who have returned from Syria is one of the FBI’s top counterterrorism priorities. Attorney General Eric Holder has urged his international counterparts to block the flow of thousands of foreign fighters to Syria, which he termed “a cradle of violent extremism.” Speaking at a conference in Norway in July 2014, Holder warned:

We have a mutual and compelling interest in developing shared strategies for confronting the influx of U.S.- and European-born violent extremists into Syria. And because our citizens can freely travel, visa free, from the U.S. to Norway and other European states—and vice versa—the problem of fighters in Syria returning home to any of our countries is a problem for all of our countries.

Al-Qaeda in the Islamic Maghreb (AQIM), one of al-Qaeda’s weaker franchises before the Arab Spring uprisings began in 2011, has flourished in recent years in North Africa and is now one of al-Qaeda’s best-financed and most heavily armed elements. The 2011 overthrow of Libyan dictator Muammar Qadhafi pried open a Pandora’s box of problems that AQIM has exploited to bolster its presence in Algeria, Libya, Mali, Morocco, and Tunisia. AQIM accumulated large quantities of arms, including man-portable air-defense systems (MANPADS), looted from Qadhafi’s huge arms depots.

The fall of Qadhafi also led hundreds of heavily armed Tuareg mercenaries formerly employed by his regime to cross into Mali, where they joined a Tuareg separatist insurgency against Mali’s weak central government. In November 2011, they formed the separatist National Movement for the Liberation of Azawad (MNLA) and sought to carve out an independent state. In cooperation with AQIM and the Islamist movement Ansar Dine, they gained control of northern Mali, a territory as big as Texas and the largest terrorist sanctuary in the world before the January 2013 French military intervention dealt a major setback to AQIM and its allies.

AQIM is estimated to have fewer than 1,000 militants operating in Algeria, with smaller numbers in Libya, Mali, Niger, and Tunisia. Many of the AQIM cadres pushed out of Mali by the French intervention have regrouped in southwestern Libya and remain committed to advancing AQIM’s self-declared long-term goal of transforming the Sahel “into one vast, seething, chaotic Somalia.”

The September 11, 2012, attack on the U.S. diplomatic mission in Benghazi underscored the extent to which Islamist extremists have grown stronger in the region, particularly in eastern Libya, a longtime bastion of Islamic fervor. The radical Islamist group that launched the attack, Ansar al-Sharia, has links to AQIM and shares its violent ideology. Ansar al-Sharia and scores of other Islamist militias have flourished in post-Qadhafi Libya because the weak central government has been unable to tame fractious militias, curb tribal and political clashes, or dampen rising tensions between Arabs and Berbers in the West and between Arabs and the African Toumbou tribe in the South.

AQIM does not pose as much of a threat to the U.S. homeland as other Al-Qaeda offshoots pose, but it does threaten regional stability and poses a threat to U.S. allies in North Africa and Europe, where it has gained supporters and operates extensive networks for the smuggling of arms, drugs, and people.

WWTA: The WWTA cites a “degraded” threat from “core al Qa’ida” against the homeland. This is due, it says, to a decentralization of the movement and the increased influence of local and regional issues. But this diffusion has also led to the “emergence of new power centers and an increase in threats by networks of like-minded extremists with allegiances to multiple groups,” particularly in Syria. The WWTA judges that the group “poses a significant threat and remains intent on targeting the United States and U.S. interests overseas.”
Summary: Al-Qaeda offshoots based in the Middle East pose a growing threat to the U.S. homeland as a result of the recruitment of Muslim militants from Western countries, including the United States.

Hezbollah Terrorism. Hezbollah (“Party of God”), the radical Lebanon-based Shiite revolutionary movement, poses a clear terrorist threat to international security. Hezbollah terrorists have murdered Americans, Israelis, Lebanese, Europeans, and citizens of many other nations. Originally founded in 1982, this Lebanese group has evolved from a local menace into a global terrorist network strongly backed by regimes in Iran and Syria and funded by a web of charitable organizations, criminal activities, and front companies.

Hezbollah regards terrorism not only as a useful tool for advancing its revolutionary agenda, but also as a religious duty as part of a “global jihad.” It helped to introduce and popularize the horrific tactic of suicide bombings in Lebanon in the 1980s, developed a strong guerrilla force and a political apparatus in the 1990s, provoked a war with Israel in 2006, and has become a major destabilizing influence in the Arab–Israeli conflict in the past decade.

Hezbollah murdered more Americans than any other terrorist group before September 11, 2001. Despite al-Qaeda's increased visibility since then, Hezbollah remains a bigger, better equipped, better organized, and potentially more dangerous terrorist organization, in part because it enjoys the support of the two chief state sponsors of terrorism in the world today: Iran and Syria. Hezbollah's demonstrated capabilities led former Deputy Secretary of State Richard Armitage to dub it “the A-Team of Terrorists.”

Hezbollah has expanded its operations from Lebanon to regional targets in the Middle East and then far beyond. It now is a global terrorist threat that draws financial and logistical support from its Iranian patrons as well as from the Lebanese Shiite diaspora in the Middle East, Europe, Africa, Southeast Asia, North America, and South America. Hezbollah fundraising and equipment procurement cells have been detected and broken up in the United States and Canada. Europe is believed to contain many more of these cells.

Hezbollah has been implicated in numerous terrorist attacks against Americans, including:

- The April 18, 1983, bombing of the U.S. embassy in Beirut, which killed 63 people, including 17 Americans;
- The October 23, 1983, suicide truck bombing of the Marine barracks at Beirut Airport, which killed 241 Marines and other personnel deployed as part of the multinational peacekeeping force in Lebanon;
- The September 20, 1984, bombing of the U.S. embassy annex in Lebanon; and
- The 1996 Khobar Towers bombing, which killed 19 American servicemen stationed in Saudi Arabia.

Hezbollah also was involved in the kidnapping of several dozen Westerners, including 14 Americans, who were held as hostages in Lebanon in the 1980s. The American hostages eventually became pawns that Iran used as leverage in the secret negotiations that led to the Iran–Contra affair in the mid-1980s.

Hezbollah has launched numerous attacks outside of the Middle East. It perpetrated the two deadliest terrorist attacks in the history of South America: the March 1992 bombing of the Israeli embassy in Buenos Aires, Argentina, which killed 29 people, and the July 1994 bombing of a Jewish community center in Buenos Aires that killed 96 people. The trial of those who were implicated in the 1994 bombing revealed an extensive Hezbollah presence in Argentina and other countries in South America.

Hezbollah has escalated its terrorist attacks against Israeli targets in recent years as part of Iran’s intensifying shadow war against Israel. In 2012, Hezbollah killed five Israeli tourists and a Bulgarian bus driver in a suicide bombing near Burgas, Bulgaria. Hezbollah terrorist plots against Israelis were foiled in Thailand and Cyprus during that same year.

In 2013, Hezbollah admitted that it had deployed several thousand militia members to fight in Syria on behalf of the Assad regime. It also deployed personnel to Iraq after the 2003 U.S. intervention to assist pro-Iranian Iraqi Shia militias that were battling the U.S.-led coalition.

Although Hezbollah operates mostly in the Middle East, it has a global reach and has established a presence inside the United States. Hezbollah cells in the United States generally are focused on fundraising, including criminal activities such as those perpetrated by over 70 used-car dealerships identified as part of a scheme to launder hundreds of millions of dollars of cocaine-generated revenue that flowed back to Hezbollah.
Hezbollah cells could morph into other forms and launch terrorist operations inside the United States. Given Hezbollah’s close ties to Iran and its past record of executing terrorist attacks on Iran’s behalf, there is a real danger that Hezbollah terrorist cells could be activated inside the United States in the event of a U.S.–Iran military conflict or an Israel–Iran military conflict.

WWTA: The WWTA does not reference the potential Hezbollah threat to the U.S. homeland.

**Summary:** Hezbollah operates mostly in the Middle East, but it has established cells inside the United States that could be activated, particularly in the event of a military conflict with Iran, Hezbollah’s creator and chief backer.

**Palestinian Terrorist Threats.** A wide spectrum of Palestinian terrorist groups threaten Israel, including Fatah (al-Aqsa Martyrs Brigade); Hamas; Palestinian Islamic Jihad; the Popular Front for the Liberation of Palestine (PFLP); the Popular Front for the Liberation of Palestine–General Command; the Palestine Liberation Front; and the Army of Islam. Most of these groups are also hostile to the United States, which they denounce as Israel’s primary source of foreign support.

Although they are focused more on Israel and regional targets, these groups also pose a limited potential threat to the U.S. homeland, particularly in the event that the Israeli–Palestinian peace process breaks down completely and the Palestinian Authority is dissolved. In the event of a military confrontation with Iran, Tehran also might seek to use Palestinian Islamic Jihad, the PFLP–GC, or Hamas as surrogates to strike the United States. Jihadist groups based in Gaza, such as the Army of Islam, also could threaten the U.S. homeland even if a terrorist attack there would set back Palestinian national interests. In general, however, Palestinian groups present a much bigger threat to Israel, Jordan, Egypt, and other regional targets than they do to the United States.

WWTA. The WWTA does not reference the potential threat of Palestinian terrorist attacks on the U.S. homeland.

**Summary:** Palestinian terrorist groups are focused primarily on Israeli targets, but they do pose a limited potential threat to the U.S. homeland because of the possibility that, if the Israeli–Palestinian peace process broke down completely or Iran became involved in a military conflict with the U.S., Palestinian surrogates could be used to target the U.S. homeland.

**Iran’s Ballistic Missile Threat.** Iran has an extensive missile development program that has received key assistance from North Korea and more limited support from Russia and China before sanctions were imposed by the U.N. Security Council. The Pentagon forecasts that:

Iran could develop and test an ICBM capable of reaching the United States by 2015. Since 2008, Iran has conducted multiple successful launches of the two-stage Safir space launch vehicle and has also revealed the larger two-stage Simorgh space launch vehicle, which could serve as a test bed for developing ICBM technologies.

Although Tehran’s missile arsenal primarily threatens U.S. bases and allies in the region, Iran eventually could expand the range of its missiles to include the continental United States. In its January 2014 report on Iran’s military power, the Pentagon assessed that “Iran continues to develop technological capabilities that could be applicable to nuclear weapons and long-range missiles, which could be adapted to deliver nuclear weapons, should Iran’s leadership decide to do so.”

WWTA: The WWTA cites the size of Iran’s ballistic missiles inventory and the WMD capability of those missiles. It also references Iran’s “desire to deter the United States and its allies” as motivation to “develop longer-range missiles, including an intercontinental ballistic missile (ICBM).” However, it does not offer any conclusions as to the extent or likelihood of the threat posed by Iran’s long-range missile program to U.S. interests.

**Summary:** Iran’s ballistic missile force poses a regional threat to the U.S. and its allies, but Tehran eventually could expand the range of its missiles to threaten the continental United States.

**Threat of Regional War**

The Middle East region is one of the most complex and volatile threat environments faced by the United States and its allies. Iran, various Al-Qaeda offshoots, Hezbollah, Arab–Israeli clashes, and a growing number of radical Islamist militias and revolutionary groups in Egypt, Libya, Syria, and Yemen pose actual or potential threats to the U.S. and its allies.
Iran has the largest ballistic missile force in the Middle East. This force poses a growing threat to many U.S. allies and to U.S. military facilities in the region.

**Iranian Threats in the Middle East.** Iran is an anti-Western revolutionary state that seeks to tilt the regional balance of power in its favor by driving out the Western presence, undermining and overthrowing opposing governments, and establishing its hegemony over the oil-rich Persian Gulf. It also seeks to radicalize Shiite communities and advance their interests against Sunni rivals. Iran has a long record of sponsoring terrorist attacks against American allies and other interests in the region. With regard to conventional threats, Iran’s ground forces dwarf the relatively small armies of the other Gulf States, and its formidable ballistic missile forces pose significant threats to its neighbors.

**Terrorist Attacks.** Iran has adopted a political warfare strategy that emphasizes irregular warfare, asymmetric tactics, and the extensive use of proxy forces. The Islamic Revolutionary Guard Corps (IRGC) has trained, armed, supported, and collaborated with a wide variety of radical Shia and Sunni militant groups, as well as Arab, Palestinian, Kurdish, and Afghan groups that do not share its Islamist ideology. The IRGC’s elite Quds (Jerusalem) Force has cultivated, trained, armed, and supported numerous militia proxies, particularly the Lebanon-based Hezbollah; Iraqi Shia militant groups; Palestinian groups such as Hamas and Palestine Islamic Jihad; and groups that have fought against the governments of Afghanistan, Bahrain, Egypt, Israel, Iraq, Jordan, Kuwait, Saudi Arabia, Turkey, and Yemen.

Iran is the world’s foremost sponsor of terrorism and has made extensive efforts to export its radical Shia brand of revolution. It has found success in establishing a network of powerful Shia revolutionary groups in Lebanon and Iraq; has cultivated Afghan Shia and Taliban militants; and has stirred Shia unrest in Bahrain, Iraq, Saudi Arabia, and Yemen. In 2013, Iranian arms shipments were intercepted by naval forces off the coasts of Bahrain and Yemen, and Israel intercepted a shipment of arms, including long-range rockets, bound for Palestinian militants in Gaza.

**Mounting Missile Threat.** Iran possesses the largest number of deployed missiles in the Middle East. The backbone of the Iranian ballistic missile force is formed by the Shahab series of road-mobile surface-to-surface missiles, which are based on Soviet-designed Scud missiles. The Shahab missiles are potentially capable of carrying nuclear, chemical, or biological warheads in addition to conventional high-explosive warheads. Their relative inaccuracy (compared to NATO ballistic missiles) limits their effectiveness unless they are employed against large and soft targets, such as cities.

Iran’s heavy investment in such weapons has fueled speculation that the Iranians intend to replace the conventional warheads in their longer-range missiles with nuclear warheads in the future. The Nuclear Threat Initiative has concluded that “[r]egardless of the veracity of these assertions, Tehran indisputably possesses a formidable weapons delivery capability, and its ongoing missile program poses serious challenges to regional stability.”

Iran is not a member of the Missile Technology Control Regime, and it has sought aggressively to acquire, develop, and deploy a wide spectrum of ballistic missile, cruise missile, and space launch capabilities. During the 1980–1988 Iran–Iraq war, Iran acquired Soviet-made Scud-B missiles from Libya and later acquired North Korean–designed Scud-C and No-dong missiles, which it renamed the Shahab-2 (with an estimated range of 500 kilometers or 310 miles) and Shahab-3 (with an estimated range of 900 kilometers or 560 miles). It now can produce its own variants of these missiles as well as longer-range Ghadr-1 and Qiam missiles.

Iran’s Shahab-3 and Ghadr-1, which is a modified version of the Shahab-3 with a smaller warhead but greater range (about 1,600 kilometers or 1,000 miles), are considered more reliable and advanced than the North Korean No-dong missile from which they are derived. The then-Director of the Defense Intelligence Agency, Lieutenant General Michael T. Flynn, warned that:

Iran can strike targets throughout the region and into Eastern Europe. In addition to its growing missile and rocket inventories, Iran is seeking to enhance lethality and effectiveness of existing systems with improvements in accuracy and warhead designs. Iran is developing the Khalij Fars, an anti-ship ballistic missile which could threaten maritime activity throughout the Persian Gulf and Strait of Hormuz.

Iran’s ballistic missiles pose a major threat to U.S. bases and allies from Turkey, Israel, and Egypt in the west, to Saudi Arabia and the other Gulf States to the south, to Afghanistan and Pakistan to the
east. However, it is Israel, which has fought a shadow war with Iran and its terrorist proxies, that is most at risk from an Iranian attack. Development of nuclear weapons and ballistic missile capabilities by Iran would seriously degrade the capability of Israeli armed forces to deter attack on Israel, which the existing (but not officially acknowledged) Israeli monopoly on nuclear weapons in the Middle East provides.

For Iran’s radical regime, hostility to Israel, sometimes referred to as the “little Satan,” is second only to hostility to the United States, which the leader of Iran’s 1979 revolution, Ayatollah Khomeini, dubbed the “great Satan.” But Iran poses a greater immediate threat to Israel than to the United States, since Israel is a smaller country with fewer military capabilities and located much closer to Iran. It already is within range of Iran’s Shahab-3 missiles. Moreover, all of Israel can be hit with the thousands of shorter-range rockets that Iran has provided to Hezbollah in Lebanon and to Hamas and Palestine Islamic Jihad in Gaza.

Weapons of Mass Destruction. Tehran has invested tens of billions of dollars since the 1980s in a nuclear weapons program that is masked within its civilian nuclear power program. It has built clandestine underground facilities to enrich uranium, which were subsequently discovered near Natanz and Fordow, and plans to build a heavy water reactor near Arak, which essentially will be a plutonium bomb factory that will give it a second route to nuclear weapons. Although Tehran, under strong pressure from damaging economic sanctions, agreed in November 2013 to enter negotiations with the P-5 plus 1 (the five permanent members of the U.N. Security Council plus Germany) on its nuclear program, the talks did not yield an agreement before the July 20, 2014, deadline, and huge gaps remain to be bridged in an extension of negotiations.

As of June 2014, Iran had accumulated enough low-enriched uranium to build eight nuclear bombs if enriched to weapons-grade levels, and Iran could enrich enough uranium to arm one bomb in less than two months. Clearly, the development of an Iranian nuclear bomb would be a game-changer that would greatly amplify the threat posed by Iran. Even if Iran did not use a nuclear weapon or pass it on to one of its terrorist surrogates to use, the regime in Tehran could become emboldened to expand its support for terrorism, subversion, and intimidation, assuming that its nuclear arsenal would protect it from retaliation as has been the case with North Korea.

Iran is a declared chemical weapons power that claims to have destroyed all of its chemical weapons stockpiles. U.S. intelligence agencies assess that Iran maintains the capability to produce chemical warfare (CW) agents and “probably” has the capability to produce some biological warfare agents for offensive purposes if it should decide to do so.

Iran also has threatened to disrupt the flow of Persian Gulf oil exports by closing the Strait of Hormuz in the event of a conflict with the U.S. or its allies.

WWTA: The WWTA predicts continued Iranian “assertiveness” that would be “counter to U.S. interests and worsen regional conflicts.” It also predicts that “Iran will continue to provide arms and other aid to Palestinian groups, Houthi rebels in Yemen, and Shia militants in Bahrain to expand Iranian influence and to counter perceived foreign threats.”

Summary: Iran poses a major potential threat to U.S. bases, interests, and allies in the Middle East by virtue of its ballistic missile capabilities, nuclear ambitions, long-standing support for terrorism, and extensive support for Islamist revolutionary groups.

Arab Attack on Israel. In addition to threats from Iran, Israel faces the constant threat of attack from Palestinian, Lebanese, Egyptian, Syrian, and other Arab terrorist groups. The threat posed by Arab states, which lost four wars against Israel in 1948, 1956, 1967, and 1973 (Syria lost a fifth war in 1982 in Lebanon), has gradually declined. Egypt and Jordan have signed peace treaties with Israel, and Iraq, Libya, and Syria have disintegrated in increasingly brutal civil wars. Although the conventional military threat to Israel from Arab states has declined, the unconventional military and terrorist threats, especially from an expanding number of sub-state actors, have risen substantially.

Iran has systematically bolstered many of these groups, even if it did not share their ideology. Today, Iran’s surrogates, Hezbollah and Palestine Islamic Jihad, along with Hamas, a more distant ally, pose the chief immediate threats to Israel. After Israel’s May 2000 withdrawal from southern Lebanon and the September 2000 outbreak of fighting between Israelis and Palestinians, Hezbollah stepped up its support for such Palestinian extremist groups as.
Hamas, Palestinian Islamic Jihad, the al-Aqsa Martyrs’ Brigades, and the Popular Front for the Liberation of Palestine. It also expanded its own operations in the West Bank and Gaza and provided funding for specific attacks launched by other groups.

In July 2006, Hezbollah forces crossed the Lebanese border in an effort to kidnap Israeli soldiers inside Israel, igniting a military clash that claimed hundreds of lives and severely damaged the economies on both sides of the border. Hezbollah has since rebuilt its depleted arsenal with help from Iran and Syria. The Chief of the Israeli Defense Forces Military Intelligence Directorate assessed in February 2014 that Hezbollah now has approximately 100,000 rockets and missiles that can reach more than half of Israel.98

Since Israel’s withdrawal from the Gaza Strip in 2005, Hamas, Palestinian Islamic Jihad, and other terrorist groups have fired more than 11,000 rockets into Israel, sparking wars in 2008–2009, 2012, and 2014.99 Over 5 million Israelis out of a total population of 8.1 million live within range of rocket attacks from Gaza, although the successful operations of the Iron Dome anti-missile system greatly mitigated this threat during the Gaza conflict in 2014. In the most recent war, Hamas also unveiled a sophisticated tunnel network that it used to infiltrate Israel to launch attacks on Israeli civilians and military personnel.

Israel also faces a growing threat of terrorist attacks from Syria. Islamist extremist groups fighting the Syrian government, including the al-Qaeda-affiliated al-Nusra Front, have attacked Israeli positions in the Golan Heights, which Israel captured in the 1967 Arab–Israeli war.

WWTA: The WWTA does not reference Arab threats to Israel.

Summary: The threat posed to Israel by Arab states has declined in recent years due to the overthrow or weakening of hostile Arab regimes in Iraq and Syria. However, there is a growing threat from sub-state actors such as Hamas, Hezbollah, and other terrorist groups in Egypt, Gaza, Lebanon, and Syria. Given the inherent volatility of the region, the general destabilization that has occurred as a consequence of Syria’s civil war, and the growth of the Islamic State as a major threat actor in the region, and given the United States’ long-standing support for Israel, any concerted attack on Israel would be a major concern for the U.S.

**Terrorist Threats from Hezbollah.** Hezbollah is a close ally, frequent surrogate, and terrorist subcontractor for Iran’s revolutionary Islamic regime. Iran played a crucial role in creating Hezbollah in 1982 as a vehicle for exporting its revolution, mobilizing Lebanese Shia, and developing a terrorist surrogate for attacks on its enemies.

Tehran provides the bulk of Hezbollah’s foreign support: arms, training, logistical support, and money. Iran provides at least $100 million in annual financial support for Hezbollah, and some experts estimate that this could run as high as $200 million annually.100 Tehran has lavishly stocked Hezbollah’s expensive and extensive arsenal of rockets, sophisticated mines, small arms, ammunition, explosives, anti-ship missiles, anti-aircraft missiles, and even unmanned aerial vehicles (UAVs) that Hezbollah can use for aerial surveillance or remotely piloted terrorist attacks. Iranian Revolutionary Guards have trained Hezbollah terrorists in Lebanon’s Bekaa Valley and in Iran.

Iran has used Hezbollah as a club to hit not only Israel and its Western enemies, but also many Arab countries. Iran’s revolutionary ideology has fueled its hostility to other Middle Eastern states, many of which it seeks to overthrow and replace with radical allies. During the Iran–Iraq war, Iran used Hezbollah to launch terrorist attacks against Iraqi targets and against Arab states that sided with Iraq. Hezbollah launched numerous terrorist attacks against Saudi Arabia and Kuwait, which extended strong financial support to Iraq’s war effort, and participated in several other terrorist operations in Bahrain and the United Arab Emirates.

Iranian Revolutionary Guards conspired with the Saudi branch of Hezbollah to conduct the 1996 Khobar Towers bombing in Saudi Arabia. Hezbollah collaborated with the IRGC’s Quds Force to destabilize Iraq after the 2003 U.S. occupation. It also helped to train and advise the Mahdi Army, the radical anti-Western Shiite militia led by militant cleric Moqtada al-Sadr.

Hezbollah threatens the security and stability of the Middle East and Western interests in the Middle East on a number of fronts. In addition to its murderous campaign against Israel, Hezbollah seeks to use violence to impose its radical Islamist agenda and subvert democracy in Lebanon. Although some experts believed that Hezbollah’s participation in the 1992 Lebanese elections and subsequent inclu-
sion in Lebanon’s parliament and coalition governments would moderate its behavior, its political inclusion brought only cosmetic changes.

Hezbollah also poses a threat in Europe to NATO allies. Hezbollah established a presence inside European countries in the 1980s amid the influx of Lebanese citizens seeking to escape Lebanon’s civil war. It took root among Lebanese Shiite immigrant communities throughout Europe. German intelligence officials estimate that roughly 900 Hezbollah members live in Germany alone. Hezbollah also has developed an extensive web of fundraising and logistical support cells spread throughout Europe.°°

France and Britain have been the principal European targets of Hezbollah terrorism, in part because both countries opposed Hezbollah’s agenda in Lebanon and were perceived to be enemies of Iran, Hezbollah’s chief patron. Hezbollah has been involved in many terrorist attacks against Europeans, including:

- The October 1983 bombing of the French contingent of the multinational peacekeeping force in Lebanon (on the same day as the U.S. Marine barracks bombing), which killed 58 French soldiers;

- The December 1983 bombing of the French embassy in Kuwait;

- The April 1985 bombing of a restaurant near a U.S. base in Madrid, Spain, which killed 18 Spanish citizens;

- A campaign of 13 bombings in France in 1986 that targeted shopping centers and railroad facilities, killing 13 people and wound more than 250; and

- A March 1989 attempt to assassinate British novelist Salman Rushdie that failed when a bomb exploded prematurely, killing a terrorist in London.

Hezbollah attacks in Europe trailed off in the 1990s after Hezbollah’s Iranian sponsors accepted a truce in their bloody 1980–1988 war with Iraq and no longer needed a surrogate to punish states that Tehran perceived to be supporting Iraq, but this lull could quickly come to an end if Iran is embroiled in another conflict. Significantly, the participation of European troops in Lebanese peacekeeping operations, which became a lightning rod for Hezbollah terrorist attacks in the 1980s, could become an issue again if Hezbollah attempts to revive its aggressive operations in southern Lebanon. Troops from EU member states may someday find themselves attacked by Hezbollah with weapons financed by Hezbollah supporters in their home countries.

According to intelligence officials, Hezbollah operatives are deployed throughout Europe, including Belgium, Bosnia, Britain, Bulgaria, Croatia, Cyprus, Denmark, France, Germany, Greece, Italy, Lithuania, Norway, Romania, Russia, Slovenia, Spain, Sweden, Switzerland, Turkey, and Ukraine.°°

WWTA: The WWTA identifies Hezbollah as a direct threat to the interests of U.S. allies and characterizes “its global terrorist activity in recent years [at] a level that we have not seen since the 1990s.”°°°

Summary: Hezbollah poses a major potential terrorist threat to the U.S. and its allies in the Middle East and Europe.

Al-Qaeda: A Rising Regional Threat. The Arab Spring uprisings against authoritarian regimes beginning in 2011 have created power vacuums that al-Qaeda and other Islamist extremist groups have exploited to advance their hostile agendas. The al-Qaeda network has taken advantage of failed or failing states in Iraq, Libya, Mali, Syria, and Yemen. The fall of autocratic Arab regimes and the subsequent factional infighting within the ad hoc coalitions that ousted those regimes created anarchic conditions that have enabled al-Qaeda franchises to expand the territories that they control. Rising sectarian tensions in Iraq and Syria also have presented al-Qaeda and other Sunni extremist groups with major opportunities to expand their activities in the heart of the Arab world.

Jonathan Evans, Director General of the British security service MI5, has warned that “parts of the Arab world have once more become a permissive environment for al-Qaeda.”°°° In Egypt, Libya, and Tunisia, the collapse or purge of intelligence and counterterrorism organizations removed important constraints on the growth of al-Qaeda and similar Islamist terrorist groups. Many dangerous terrorists were released or escaped from prison. Al-Qaeda and other revolutionary groups were handed new opportunities to recruit, organize, attract funding for, train, and arm a new wave of followers and to consolidate safe havens from which to mount future attacks.
The Arab Spring uprisings were a golden opportunity for al-Qaeda, coming at a time when its sanctuaries in Pakistan have become increasingly threatened by U.S. drone strikes. Given al-Qaeda’s Arab roots, the Middle East and North Africa provide much better access to potential Arab recruits than is provided by the more remote regions of the tribal badlands along the Afghanistan–Pakistan border, where many al-Qaeda cadres fled after the fall of the Taliban regime in Afghanistan in 2001. The countries destabilized by the Arab uprisings also could provide easier access to al-Qaeda’s Europe-based recruits, who pose the most dangerous threats to the U.S. homeland by virtue of their European passports and greater ability to blend into Western societies.

**WWTA:** The WWTA cites the degradation of the al-Qaeda threat and the decentralization of the organization but points to the resultant diffusion as a factor in “the emergence of new power centers and an increase in threats by networks of like-minded extremists with allegiances to multiple groups.” It also warns that “the potential of global events to instantaneously spark grievances around the world hinders advance warning, disruption, and attribution of plots.”

**Summary:** The al-Qaeda network has exploited the political turbulence of the Arab Spring to expand its strength and control of territory in the Middle East. It poses a growing regional threat to the U.S. and its allies.

**Growing Threats to Jordan.** Jordan, a key U.S. ally, faces external threats from Syria’s Assad regime and from Islamist extremists, including the Islamic State (ISIS), who have carved out sanctuaries in Syria and Iraq. Jordan’s cooperation with the United States, Saudi Arabia, and other countries in supporting moderate elements of the Syrian opposition has angered both the Assad regime and Islamist extremist rebels. Damascus could retaliate for Jordanian support for Syrian rebels with cross-border attacks, airstrikes, ballistic missile strikes, or the use of terrorist attacks by surrogates such as Hezbollah or the PFLP–GC.

The Islamic State is committed to overthrowing the government of Jordan and replacing it with an Islamist dictatorship. In its previous incarnation as al-Qaeda in Iraq, IS already attacked targets in Jordan, including the November 2005 suicide bombings at three hotels in Amman that killed 57 people. Jordan also faces threats from Hamas and from Jordanian Islamist extremists, particularly some based in the southern city of Maan who organized pro-ISIS demonstrations in 2014.

**WWTA:** The WWTA does not reference threats to Jordan.

**Summary.** Jordan faces rising security threats from the Islamic State, which has expanded its control of territory in neighboring Syria and Iraq. As one of the very few Arab states that maintain a peaceful relationship with Israel and decline to support terrorism, its destabilization would be a troubling development.

**Terrorist Attacks on and Possible Destabilization of Egypt.** The 2011 ouster of the Mubarak regime undermined the authority of Egypt’s central government and allowed disgruntled Bedouin tribes, Islamist militants, and smuggling networks to grow stronger and bolder in Egypt’s Sinai Peninsula. President Mohamed Morsi’s Muslim Brotherhood–backed government, elected to power in 2012, took a relaxed attitude toward Hamas and other Islamist extremists based in Gaza, enabling Islamist militants in the Sinai to grow even stronger with support from Gaza. They carved out a staging area in the remote mountains of the Sinai that they have used as a springboard for attacks on Israel, Egyptian security forces, tourists, the Suez Canal, and a pipeline carrying Egyptian natural gas to Israel and Jordan.

The July 2013 coup against Morsi resulted in a military government that took a much harder line against the Sinai militants, but it also raised the ire of more moderate Islamists, who may turn to terrorism to avenge Morsi’s fall. Terrorist attacks, which had been limited to the Sinai, expanded in lethality and intensity to include bomb attacks in Cairo and other cities by early 2014. Egypt also faces potential threats from Islamist militants based in Libya and from al-Qaeda affiliates.

During the recent conflict between Hamas and Israel, Egypt closed tunnels along the Gaza–Sinai border that have been used to smuggle goods, supplies, and weapons into Gaza. Even with the changes in government, Egypt has honored its treaty relationship with Israel.

**WWTA:** The WWTA cites “a persistent threat of militant violence directed primarily at the state,” with special attention to the vulnerability of the Sinai Peninsula “as a growing staging ground for militants – including terrorists – to plan, facilitate, and launch attacks.”
Summary: Egypt is threatened by Islamist extremist groups that have established bases in the Sinai Peninsula and in neighboring Libya. Unchecked, these groups could foment greater instability not only in Egypt, but also in neighboring countries.

Threats to Saudi Arabia and Other Members of the Gulf Cooperation Council. Saudi Arabia and the five other Arab Gulf States—Bahrain, Kuwait, Oman, Qatar, and the United Arab Emirates—formed the Gulf Cooperation Council (GCC) in 1981 to deter and defend against Iranian aggression. Iran remains the primary threat to their security. Tehran has supported groups that launched terrorist attacks against Bahrain, Kuwait, and Saudi Arabia. It aided Shia radicals of the Islamic Front for the Liberation of Bahrain in an attempted coup against Bahrain’s ruling Al Khalifa family, the Sunni rulers of the predominantly Shia country.

When Bahrain was engulfed in a wave of Arab Spring protests in 2011, Bahrain’s government charged that Iran again exploited the protests to back the efforts of Shia radicals to overthrow the royal family. Saudi Arabia, fearing that a Shia revolution in Bahrain would incite its own restive Shia minority, led a March 2011 GCC intervention that backed Bahrain’s government with about 1,000 Saudi troops and 500 police from the United Arab Emirates.

Saudi Arabia also faces threats from Islamist extremists, including al-Qaeda offshoots in Iraq and Yemen that have attracted many Saudi recruits. Al-Qaeda did launch a series of bombings and terrorist attacks inside the kingdom in 2003, and a serious attack on the vital Saudi oil facility in Abqaiq in 2006, but a security crackdown drove many al-Qaeda members out of the country by the end of the decade. In addition to terrorist threats and possible Shia rebellions, Saudi Arabia and the other GCC states face possible military threats from Iran. Tehran is unlikely to launch direct military attacks against them unless it becomes embroiled in a war with the United States and retaliates against them for supporting U.S. military efforts.

WTCA: The WWTA assesses that “Iran’s perceived responsibility to protect and empower Shia communities will increasingly trump its desire to avoid sectarian violence” and that “Iran’s actions will likely do more to fuel than dampen increasing sectarianism” in the region.108

Summary: Saudi Arabia and other members of the Gulf Cooperation Council face continued threats from Iran as well as rising threats from Islamist extremist groups such as the al-Qaeda offshoots in Iraq and Yemen. Though forms of Islamist extremism have emanated from Saudi Arabia and the government provides political cover for the hardline Wahhabi sect of Sunni Islam, Saudi Arabia also serves to check more radical and ultraviolent Islamists like the Islamic State and is the primary counterbalance to Iran.

Threats to the Commons

The U.S. has critical interests at stake in the Middle Eastern commons: sea, air, space, and cyber. The U.S. has long provided the security backbone in these areas, which has in turn supported the region’s economic development and political stability.

Maritime. Maintaining the security of the sea lines of communication in the Persian Gulf, Arabian Sea, Red Sea, and Mediterranean Sea is a high priority for the United States for strategic, economic, and energy security purposes. The Persian Gulf region contains approximately 50 percent of the world’s oil reserves and is a crucial source of oil for oil-importing states, particularly China, India, Japan, South Korea, and many European countries. The flow of that oil could be interrupted by interstate conflict or terrorist attacks.

Bottlenecks such as the Strait of Hormuz, the Suez Canal, and the Bab el-Mandeb Strait are potential choke points for restricting the flow of oil, international trade, and the deployment of U.S. Navy warships. The chief potential threat to the free passage of ships through the Strait of Hormuz is Iran. Approximately 17 million barrels of oil a day flows through the strait, roughly 20 percent of the oil traded worldwide.109

Iran has trumpeted the threat it could pose to the free flow of oil exports from the Gulf if it is attacked or threatened with a cutoff of its own oil exports. Iran’s leaders have threatened to close the Strait of Hormuz, the jugular vein through which most Gulf oil exports flow to Asia and Europe. Although the United States has greatly reduced its dependence on oil exports from the Gulf, it still would sustain economic damage in the event of a spike in world oil prices, and many of its European and Asian allies and trading partners import a substantial portion of their oil needs from the region.
Iran’s Supreme Leader Ayatollah Ali Khamenei has repeatedly played up Iran’s threat to international energy security, proclaiming in 2006 that “[i]f the Americans make a wrong move toward Iran, the shipment of energy will definitely face danger, and the Americans would not be able to protect energy supply in the region.”

Iran has established a precedent for attacking oil shipments in the Gulf. During the Iran–Iraq war, each side targeted the other’s oil facilities, ports, and oil exports. Iran escalated attacks to include neutral Kuwaiti oil tankers and terminals and clandestinely laid mines in Persian Gulf shipping lanes while its ally Libya clandestinely laid mines in the Red Sea. The United States defeated Iran’s tactics by reflagging Kuwaiti oil tankers, clearing the mines, and escorting ships through the Persian Gulf, but a large number of commercial vessels were damaged during the “Tanker War” from 1981 to 1987.

Iran’s demonstrated willingness to disrupt oil traffic through the Persian Gulf in the past to place economic pressure on Iraq is a red flag to U.S. military planners. During the 1980s Tanker War, Iran’s ability to strike at Gulf shipping was limited by its aging and outdated weapons systems and the U.S. arms embargo imposed after the 1979 revolution. However, since the 1990s,
Iran has been upgrading its military with a host of new weapons from North Korea, China, and Russia, as well as with weapons manufactured domestically.

Today, Iran boasts an arsenal of Iranian-built missiles based on Russian and Chinese designs that pose significant threats to oil tankers as well as warships. Iran is well-stocked with Chinese-designed anti-ship cruise missiles, including the older HY-2 Seersucker and the more modern CSS-N-4 Sardine and CSS-N-8 Saccade models. Iran also has reverse engineered Chinese missiles to produce its own anti-ship cruise missiles, the Ra’ad and Noor.115 Shore-based missiles deployed along Iran’s coast would be augmented by aircraft-delivered laser-guided bombs and missiles, as well as by television-guided bombs.

Iran also has a large supply of anti-ship mines, including modern mines that are far superior to the simple World War I–style contact mines that Iran used in the 1980s. They include the Chinese-designed EM-52 “rocket” mine, which remains stationary on the sea floor and fires a homing rocket when a ship passes overhead. Iran can also deploy mines or torpedoes from its three Kilo-class submarines, which would be effectively immune to detection for brief periods when running silent and remaining stationary on a shallow bottom just outside the Strait of Hormuz.116 Iran could also deploy mines by mini-submarines, helicopters, or small boats disguised as fishing vessels.

Iran’s Revolutionary Guard naval forces have reportedly developed swarming tactics using fast attack boats armed with missiles and also could deploy naval commandos trained to attack using small boats, mini-submarines, and even jet skis. The Revolutionary Guards also have underwater demolition teams that could attack offshore oil platforms and other facilities. Finally, Tehran could use its extensive terrorist network in the region to sabotage oil pipelines and other infrastructure or to strike oil tankers in port or at sea.

Terrorists also pose a potential threat to oil tankers and other ships. Al-Qaeda strategist Abu Mus’ab al-Suri identified four strategic choke points that should be targeted for disruption: the Strait of Hormuz, the Suez Canal, the Bab el-Mandeb Strait, and the Strait of Gibraltar.117 In 2002, al-Qaeda terrorists attacked and damaged the French oil tanker Limbourg off the coast of Yemen. Al-Qaeda also almost sank the USS Cole, a guided missile destroyer, in the port of Aden, killing 17 American sailors with a suicide boat bomb in 2000.

Terrorists also have targeted the Suez Canal. In August 2013, a container ship passing through the Suez Canal was attacked by terrorists who apparently sought to close the strategic waterway.114 The Panama-flagged vessel reportedly escaped major damage. More important, the canal was not forced to close, which would have disrupted global shipping operations, ratcheted up oil prices, and complicated the deployment of U.S. naval vessels responding to potential crises in the Middle East, Persian Gulf, and Horn of Africa. Although the group responsible for the attack has not been identified, it is likely that the attackers are linked to Islamist militant groups that have flourished in the Sinai Peninsula or to groups battling the Egyptian government since the 2013 coup.

Over the past decade, piracy off the coast of Somalia has threatened shipping near the Bab el-Mandeb Strait and the Gulf of Aden. Recently, however, the frequency of pirate attacks in the region has dropped. In 2013, hijackings of major shipments off the coast of Somalia plummeted to zero, according to the U.S. Navy.115 Pirate activity, however, continues to threaten international trade and the safety of the international commons, particularly off the coast of West Africa, so a resurgence in the waters of the Middle East cannot be entirely discounted.

WWTA: The WWTA does not reference maritime threats.

Summary: Iran poses the chief potential threat to shipping in the Strait of Hormuz, while various terrorist groups pose the chief threats to shipping in the Suez Canal and the Bab el-Mandeb Strait. Though pirate attacks off the coast of Somalia have declined in recent years, there remains the potential for their return.

Airspace. The Middle East is particularly vulnerable to attacks such as that on Malaysia Airlines Flight MH17 over Ukraine in July 2014. Large quantities of arms, including man-portable air-defense systems, were looted from Libyan arms depots after the fall of Muammar Qadhafi’s regime in 2011. Although Libya is estimated to have had up to 20,000 MANPADS, mostly old Soviet models, only about 10,000 have been accounted for, and an unknown number may have been smuggled out of Libya, which is a hotbed of Islamist radicalism.116

U.S. intelligence sources estimated that at least 800 MANPADS fell into the hands of foreign insurgent groups after being moved out of Libya.117 Libyan MANPADS have turned up in the hands of AQIM, the
Nigerian Boko Haram terrorist group, and Hamas in Gaza. At some point, one or more could be used in a terrorist attack against a civilian airliner. Insurgents or terrorists also could use anti-aircraft missile systems captured from regime forces in Iraq and Syria.

Al-Qaeda already has used MANPADS in several terrorist attacks. In 2002, it launched two SA-7 MANPADS in a failed attempt to bring down an Israeli civilian aircraft in Kenya. In 2007, the al-Qaeda affiliate al-Shabaab shot down a Belarusian cargo plane in Somalia, killing 11 people.118 Al-Qaeda’s al-Nusra Front and the Islamic State splinter group have acquired substantial numbers of MANPADS from government arms depots in Iraq and Syria. Although such weapons may pose only a limited threat to modern warplanes equipped with countermeasures, they pose a growing threat to civilian aircraft in the Middle East and could be smuggled into the United States and Europe to threaten aircraft there.

**WWTA:** The WWTA makes no mention of the terrorist threat to airspace in the Middle East.

**Summary:** Al-Qaeda and other terrorists have seized substantial numbers of anti-aircraft missiles from military bases in Iraq, Libya, and Syria that pose potential threats to safe transit of airspace in the Middle East.

**Space.** Iran has launched satellites into orbit, but there is no evidence that it has an offensive space capability. Tehran successfully launched three satellites in February 2009, June 2011, and February 2012 using the Safir space launch vehicle, which uses a modified Ghadr-1 missile for its first stage and a second stage based on an obsolete Soviet submarine-launched ballistic missile, the R-27.119 The technology probably was transferred by North Korea, which built its BM-25 missiles using the R-27 as a model.120 Safir technology could be used as a basis to develop longer-range ballistic missiles.

Iran claimed to have launched a monkey into space and returned it safely to Earth twice in 2013.121 Tehran also announced in June 2013 that it had established its first space tracking center to monitor objects in “very remote space” and to help manage the “activities of satellites.”122

**WWTA:** The WWTA assesses that “Iran’s progress on space launch vehicles—along with its desire to deter the United States and its allies—provides Tehran with the means and motivation to develop longer-range missiles, including an intercontinental ballistic missile.”123

**Summary:** Though Iran has launched satellites into orbit successfully, there is no evidence that it has developed an offensive space capability that could deny others the use of space or exploit space as a base for offensive weaponry.

**Cyber Threats.** Iranian cyber capabilities present a significant threat to the U.S. and its allies. Iran has developed offensive cyber capabilities as a tool of espionage and sabotage. Tehran claims to have the world’s fourth largest cyber force, “a broad network of quasi-official elements, as well as regime-aligned ‘hacktivists,’ who engage in cyber activities broadly consistent with the Islamic Republic’s interests and views.”124

The creation of the “Iranian Cyber Army” in 2009 marked the beginning of a cyber offensive against those who are seen as enemies by the Iranian government. A hacking group dubbed the Ajax Security Team, believed to be operating out of Iran, has used malware-based attacks to target U.S. defense organizations and has successfully breached the Navy Marine Corps Intranet. In addition, they have targeted dissidents within Iran, seeding versions of anti-censorship tools with malware and gathering information about users of those programs.125 Iran has invested heavily in cyber capabilities, with an annual budget reported to be almost $1 billion in 2012.126

Iran allegedly has used cyber weapons to engage in economic warfare, most notably the sophisticated and debilitating denial-of-service attacks against a number of U.S. financial institutions, including the Bank of America, JPMorgan Chase, and Citigroup.127 In 2012, Tehran was suspected of launching the “Shamoon” virus attack on Saudi Aramco, the national oil company that produces approximately 10 percent of the world’s oil, which destroyed around 30,000 computers, as well as an attack on Qatari natural gas company Rasgas’s computer networks.128

The sophistication of these and other Iranian cyber attacks, together with Iran’s willingness to use these weapons, has led various experts to name Iran as one of the most cyber-capable opponents of the U.S. Iranian cyber forces have even gone as far as to create fake online personas in order to extract information from U.S. officials through accounts such as LinkedIn, YouTube, Facebook, and Twitter.129

**WWTA:** The WWTA characterizes Iran as an “unpredictable actor” whose “development of cyber espionage or attack capabilities might be used in an attempt to either provoke or destabilize the United States or its partners.”130
Summary: Iranian cyber capabilities present significant espionage and sabotage threats to the U.S. and its allies, and Tehran has shown willingness and skill in using them.

Threat Scores

Iran. Iran represents by far the most significant security challenge to the United States, its allies, and its interests in the greater Middle East. Its open hostility to the United States and Israel, sponsorship of terrorist groups like Hezbollah, and historic and avowed threats to the commons well illustrate the problem it could pose given the right capabilities. Today, Iran’s provocations are mostly a concern for the region and American allies, friends, and assets there. Iran relies heavily on irregular (to include political) warfare against others in the region and fields more missiles than any of its neighbors. The twin development of its ballistic missiles and nuclear capability also means that it poses a long-term threat to the security of the U.S. homeland.

According to the IISS Military Balance, among the key weapons in Iran’s inventory are 12-plus MRBMs, 18-plus SRBMs, 1,663 main battle tanks, 21 tactical submarines, six corvettes, 13 amphibious landing ships, and 334 combat-capable aircraft in its air force. There are a total of 523,000 personnel in the armed forces, including 125,000 the Iranian Revolutionary Guard Corps and 130,000 in the Iranian Army.

With regard to these capabilities, IISS states that “[t]he Iranian Revolutionary Guard Corps (IRGC) is a capable organization well-versed in a variety of different operations.” While Iran’s armed forces “suffer from a generally outdated arsenal, exacerbated by the imposition of a UN weapons Embargo in June 2010,” their “innovative and cost-effective tactics and techniques (particularly the use of asymmetric warfare) mean that Iran is able to present a challenge to most potential adversaries, especially its weaker neighbors.” IISS also mentions that Iran’s “inability to offer effective deterrence to an advanced force such as the United States may be a motivation for Iran’s pursuit of dual-use nuclear programs.”

This Index assesses the overall threat from Iran, considering the range of contingencies, as “aggressive” and “aspirational.”

Threats: Iran

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<thead>
<tr>
<th>Behavior</th>
<th>HOSTILE</th>
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<th>TESTING</th>
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Greater Middle East–Based Terrorism

The varied non-state actors in the Middle East that are vocally and actively opposed to the United States are collectively the closest to being rated “hostile” with regard to the degree of provocation they exhibit. These groups, from ISIS to al-Qaeda and its affiliates, Hezbollah, and the range of Palestinian terrorist organizations in the region, are primarily a threat to American allies, friends, and interests in the Middle East. Their impact on the American homeland is mostly a concern for American domestic security agencies. However, they pose a challenge to the stability of the region that could result in a broader, more varied and relevant threat to the United States.

The IISS Military Balance addresses only the military capabilities of states. Consequently, it does not provide any accounting of sub-state entities like Hezbollah and Hamas or non-state terrorist organizations like al-Qaeda.

This Index assesses the overall threat from greater Middle East–based terrorism, considering the range of contingencies, as “aggressive” and “aspirational.”
## Threats: Middle East Terrorism

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<th>HOSTILE</th>
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<td>Capability</td>
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Asia

Threats to the Homeland

Threats to the homeland include both terrorist threats from non-state actors resident in ungoverned areas of South Asia and an active, developing ballistic missile threat from North Korea and credible Chinese nuclear missile capability to support other elements of China’s national power.

Terrorism Originating from Afghanistan and Pakistan (AfPak). Terrorist groups operating from Pakistan and Afghanistan continue to pose a direct threat to the U.S. homeland and undermine critical U.S. interests in the region. These interests include the prevention of conflict between India and Pakistan, which has the potential to go nuclear, and the safety and security of Pakistan’s nuclear weapons.

Pakistan is home to a host of terrorist groups that keep the region unstable and contribute to the spread of global terrorism. The killing of Osama bin Laden at his hideout in Abbottabad, Pakistan, in May 2011 and an intensive drone campaign in Pakistan’s tribal areas bordering Afghanistan from 2010–2012 have helped to degrade the al-Qaeda threat. However, followers and funds still flow to al-Qaeda, which is set to play a greater role in Pakistan and in Afghanistan as the U.S. draws down in the region.

In response to ISIS’ seizure of territory in Iraq–Syria—in its calculation, sufficient basis from which to proclaim a “caliphate”—al-Qaeda can be expected to try to assert stronger control over territory in AfPak in order to have its own space from which to issue a rival claim of caliphate. In addition, several other like-minded terrorist groups still thrive along the Afghanistan–Pakistan border, carry out regular attacks in Pakistan and Afghanistan, and target U.S. interests in the region and beyond. The Afghan Taliban and its allies, which are headquartered in Pakistan, are already making a push to regain territory in Afghanistan pending a more concerted effort when international forces depart. A Taliban resurgence in Afghanistan could allow al-Qaeda to regain ground in the region and pave the way for terrorist groups of all stripes to re-establish bases there.

Pakistan’s continued support for terrorist groups that have links with al-Qaeda undermines U.S. counterterrorism goals in the region. Pakistan’s military and intelligence leaders maintain a short-term tactical approach of fighting some terrorist groups that are deemed to be a threat to the state while supporting others that are aligned with Pakistan’s goal of extending its influence and curbing India’s.

Credible media reports provide details about U.S. officials confronting Pakistan’s leadership with evidence that Pakistan retains links to groups involved in attacking U.S. forces. In one instance, former U.S. Secretary of State Hillary Clinton told Pakistani officials that the U.S. had found cell phone numbers of Pakistani intelligence officials on bodies of dead militants. In another case, former Deputy Director of the CIA Mike Morell showed Pakistani officials video of militants clearing explosive materials from plants the U.S. had asked Pakistan to raid. U.S. officials said the videos proved that Pakistani authorities had tipped off the militants before the raid was launched.
Countless acts of terrorism have occurred in South Asia since 2001. An escalation in terrorist activity since 2007 has resulted in the deaths of more than 19,100 Afghan civilians, 17,700 Pakistani civilians, and 4,700 Indian civilians. Here is a list of some of the most significant attacks.

### Selected High-Profile Terrorist Attacks in South Asia Since 2007

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
<th>KILLED IN ATTACK</th>
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<tbody>
<tr>
<td>2007</td>
<td>Feb. 2007—Unknown assailants bomb Friendship Train traveling between New Delhi, India, and Lahore, Pakistan.</td>
<td>67 Afghanistan, 7 India, 5 Pakistan</td>
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<td></td>
<td>Oct. 2007—Benazir Bhutto procession bombed in Karachi.</td>
<td>130 Afghanistan, 12 India, 3 Pakistan</td>
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<td>Dec. 2007—Benazir Bhutto assassinated in Rawalpindi, 24 others killed.</td>
<td>24 Afghanistan, 4 India, 1 Pakistan</td>
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<td>2008</td>
<td>March 2008—Italian restaurant bombed in Islamabad, killing one Turkish woman and injuring several Americans.</td>
<td>1 Afghanistan, 7 India, 2 Pakistan</td>
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<td></td>
<td>May 2008—Serial bomb blasts at crowded market areas and Hindu temples kill at least 60 and injure more than 150.</td>
<td>60 Afghanistan, 8 India, 3 Pakistan</td>
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<td></td>
<td>June 2008—Suspected al-Qaeda operatives bomb Danish Embassy in Islamabad.</td>
<td>5 Afghanistan, 7 India, 2 Pakistan</td>
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<td></td>
<td>July 2008—Suicide bomb attack on Indian Embassy in Kabul kills 58, including two Indian diplomats.</td>
<td>58 Afghanistan, 5 India, 3 Pakistan</td>
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<td></td>
<td>Sept. 2008—Marriott Hotel in Islamabad bombed.</td>
<td>54 Afghanistan, 5 India, 3 Pakistan</td>
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<td></td>
<td>Nov. 2008—Coordinated attacks in Mumbai by 10 gunmen directed by Pakistani group Lashkar-e-Taiba kill 164, including six Americans.</td>
<td>164 Afghanistan, 14 India, 4 Pakistan</td>
</tr>
<tr>
<td>2009</td>
<td>March 2009—Attack on Sri Lankan cricket team in Lahore leaves six Pakistani policemen and two others dead.</td>
<td>8 Afghanistan, 1 India, 3 Pakistan</td>
</tr>
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<td></td>
<td>Oct. 2009—Militants attack Pakistan Army Headquarters in Rawalpindi.</td>
<td>7 Afghanistan, 1 India, 2 Pakistan</td>
</tr>
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<td></td>
<td>Oct. 2009—Attack on U.N. guesthouse in Kabul kills five U.N. employees and three Afghans.</td>
<td>8 Afghanistan, 1 India, 2 Pakistan</td>
</tr>
<tr>
<td>2010</td>
<td>Feb. 2010—German bakery in Pune is bombed.</td>
<td>17 Afghanistan, 4 India, 2 Pakistan</td>
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<td></td>
<td>May 2010—Suicide attacks against places of worship of the Ahmadiyya community of Lahore kill 80 and injure 120.</td>
<td>80 Afghanistan, 5 India, 3 Pakistan</td>
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<tr>
<td>2011</td>
<td>Feb. 2011—Multiple suicide bombers attack the Kabul Bank in Jalalabad City in Nangarhar Province, killing 35 Afghans injuring another 70.</td>
<td>35 Afghanistan, 4 India, 2 Pakistan</td>
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<td></td>
<td>May 2011—Tehrik-e-Taliban Pakistan (TTP) suicide bombers kill at least 90, including 73 paramilitary forces, at a military training center in Khyber Pakhtunkhwa.</td>
<td>90 Afghanistan, 4 India, 3 Pakistan</td>
</tr>
<tr>
<td></td>
<td>May 2011—TTP attacks U.S. Consulate General vehicle in Peshawar, killing one person and injuring others, including two USCG employees.</td>
<td>1 Afghanistan, 1 India, 1 Pakistan</td>
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<td></td>
<td>May 2011—TTP attacks Pakistan Naval Station, Mehran, killing 10 military personnel and destroying millions worth of military equipment.</td>
<td>10 Afghanistan, 1 India, 2 Pakistan</td>
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<td></td>
<td>July 2011—Three serial bomb blasts in Mumbai kill 17 and injure 131.</td>
<td>17 Afghanistan, 1 India, 3 Pakistan</td>
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</tbody>
</table>
### Selected High-Profile Terrorist Attacks in South Asia Since 2007 (continued)

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
<th>KILLED IN ATTACK</th>
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<tbody>
<tr>
<td>2011</td>
<td>Aug. 2011—Al-Qaeda kidnap U.S. aid contractor in Pakistan, who remains in captivity.</td>
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<td>Sept. 2011—Suicide bomber kills the head of the High Peace Council (HPC), Burhanuddin Rabbani, and four other HPC members.</td>
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<td></td>
<td>Sept. 2011—Haqqani network attacks the U.S. Embassy and security compounds in Kabul, killing seven Afghans.</td>
<td>7</td>
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<td>Sept. 2011—Bomb blast outside the Delhi High Court kills 12 and injures 91.</td>
<td>12</td>
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<td></td>
<td>Sept. 2011—Truck bomb at NATO base in Wardak wounds 77 U.S. soldiers.</td>
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<td>Dec. 2011—Terrorists conduct bombings in Kabul, Mazar-e Sharif, and Kandahar on the Shia holy day of Ashura, killing 80 and wounding over 160.</td>
<td>80</td>
</tr>
<tr>
<td>2012</td>
<td>April 2012—Taliban insurgents conduct simultaneous attacks in Kabul city and in three nearby provinces, killing at least 50 and wounding hundreds.</td>
<td>50</td>
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<tr>
<td></td>
<td>Aug. 2012—TTP launches a coordinated assault on Kamra Air Force Base in Punjab, killing one security official.</td>
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<td>October 2012—Suicide bomber kills 41 and wounds 50 at a mosque in Faryab Province.</td>
<td>41</td>
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<tr>
<td>2013</td>
<td>Jan. 2013—Insurgents attack Afghan Intelligence Headquarters in Kabul, killing 14 and wounding 32.</td>
<td>14</td>
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<td></td>
<td>Jan. 2013—Lashkar-e-Jhangvi claims responsibility for a string of bombings in Quetta that kill 105 people and injure 169.</td>
<td>105</td>
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<tr>
<td></td>
<td>June 2013—Terrorists attack a mountaineering camp in Gilgit-Baltistan, killing three security officials and 10 foreign climbers, including one U.S. citizen.</td>
<td>13</td>
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<tr>
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<td>June 2013—Two suicide bombers detonate vehicle-borne explosives in front of Afghanistan’s Supreme Court, killing 17.</td>
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<td></td>
<td>Sept. 2013—Suicide bombers detonate their vests at historic All Saints Church in Peshawar, killing 119 and injuring 145 others.</td>
<td>119</td>
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<tr>
<td></td>
<td>Oct. 2013—Indian Mujahideen (IM) operatives detonate several bombs at Narendra Modi’s political rally in Bihar, killing six and injuring 85.</td>
<td>6</td>
</tr>
<tr>
<td>2014</td>
<td>Jan. 2014—At least 26 Pakistani soldiers killed and 24 injured when a bomb rips through a military convoy in Bannu Town.</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>March 2014—The Taliban claims responsibility for an attack on the Serena Hotel in Kabul that kills five Afghans and four foreigners.</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>June 2014—TTP and Islamic Movement of Uzbekistan (IMU) attack Karachi Airport, killing 26.</td>
<td>26</td>
</tr>
</tbody>
</table>

One of the most dangerous terrorist groups that operates freely in Pakistan is the Lashkar-e-Taiba (LeT), responsible for the 2008 Mumbai attacks that killed nearly 160, including six Americans. In April 2012, the U.S. issued a $10 million reward for information leading to the arrest or conviction of LeT founder and leader of its front organization, Hafez Muhammad Saeed. The LeT has engaged in recruitment and fundraising activities in the U.S. In September, 2011, for instance, U.S. authorities arrested an American permanent resident born in Pakistan, Jubair Ahmad, for providing material support to the LeT by producing and uploading LeT propaganda to the Internet. Ahmad reportedly attended an LeT training camp in Pakistan before moving to the U.S. in 2007.125

The U.S. trial of Pakistani American David Coleman Headley, who was arrested in Chicago in 2009 for his involvement in the 2008 Mumbai attacks, led to striking revelations about the LeT’s international reach and close connections to Pakistani intelligence. Headley had traveled frequently to Pakistan, where he received terrorist training from the LeT, and to India, where he scouted the sites of the Mumbai attacks. In four days of testimony and cross-examination, Headley detailed meetings he had with a Pakistani intelligence officer, a former army major,
and a navy frogman, who were among the key players in orchestrating the Mumbai assault.136

The possibility that terrorists could gain effective access to Pakistani nuclear weapons is contingent on a complex chain of circumstances. In terms of consequence, however, it is the most dangerous regional threat scenario. Concern about the safety and security of Pakistan’s nuclear weapons increases when Indo–Pakistan tensions increase. For example, during the 1999 Kargil crisis, U.S. intelligence indicated that Pakistan had made “nuclear preparations,” which spurred greater U.S. diplomatic involvement in defusing the crisis.137

If Pakistan were to move around its nuclear assets or, worse, take steps to mate weapons with delivery systems, the chances for terrorist theft or infiltration would increase. Increased reliance on tactical nuclear weapons (TNWs) is of particular concern because launch authorities for TNWs are typically delegated to lower-tier field commanders, far from the central authority controls in Islamabad. Another concern to take into account is the possibility for miscalculations leading to regional nuclear war if top Indian leaders lose confidence that nuclear weapons in Pakistan are under government control or conversely, hereafter assume they were under
North Korea has likely already achieved warhead miniaturization, the ability to place nuclear weapons on its medium-range missiles, and a preliminary ability to reach part of the continental United States with a missile. Pyongyang has repeatedly declared that it will not negotiate away its nuclear arsenal.

Pakistani government control after they ceased to be. In addition to the security of nuclear weapons, poor handling of nuclear materials in both Pakistan and India is a cause for concern.

There is concern that Islamist extremist groups with links to the Pakistan security establishment could exploit those links to gain access to nuclear weapons technology, facilities, and/or materials. The realization that Osama bin Laden stayed for six years within a half-mile of Pakistan’s premiere defense academy has fueled concern that al-Qaeda can operate relatively freely in parts of Pakistan and might eventually gain access to Pakistan’s nuclear arsenal. A Harvard University Belfer Center for Science and International Affairs study noted in 2010 that Pakistan’s stockpile “faces a greater threat from Islamic extremists seeking nuclear weapons than any other stockpile on earth.”

There is the additional, though less likely, scenario of extremists gaining access through a collapse of the state. While Pakistan remains unstable because of its weak economy, regular terrorist attacks, sectarian violence, civil–military tensions, and the growing influence of religious extremist groups, it is unlikely that the Pakistani state will collapse altogether. The country’s most powerful institution, the 500,000-strong army, which has ruled Pakistan for almost half of its existence, would almost certainly intervene and take charge once again if the political situation began to unravel. The potential breakup of the Pakistani state would have to be preceded by the disintegration of the army, which is currently not plausible.

WWTA: The WWTA argues that the core al-Qaeda leadership (located in Pakistan) has been on a downward trajectory since 2008 and that its ability to carry out a catastrophic terrorist attack in the U.S. has been degraded. It also notes that the al-Qaeda core leadership probably hopes for a resurgence following the drawdown of U.S. forces in Afghanistan.

**Summary:** The threat to the American homeland emanating from Afghanistan and Pakistan is diverse, complex, and mostly indirect and largely involves non-state actors.

**Missile Threat: North Korea and China.** The two sources of the ballistic missile threat to the U.S. are very different in terms of their sophistication and integration into broader strategies for achieving national goals. The threats from North Korea and China are therefore very different in nature.

North Korea. In December 2012, North Korea successfully put a satellite into orbit. The same technology that launches satellites can be used to build intercontinental ballistic missiles (ICBMs). Three months later, North Korea conducted its third nuclear test. These events clearly signaled that new leader Kim Jong-un had no intention either of resuming North Korea’s Six-Party Talks pledge to denuclearize or of abiding by U.N. resolutions that require a cessation of Pyongyang’s nuclear and missile programs. Instead, Kim Jong-un would continue North Korea’s decades-long quest to develop nuclear weapons and the means to deliver them.

North Korea has declared that it already has a full nuclear strike capability, even altering its constitution to enshrine itself as a nuclear-armed state. Among North Korea’s many direct verbal threats to the U.S., in October 2012, the National Defense Commission warned that its strategic rocket forces can hit U.S. bases in South Korea, Japan, and Guam as well as the U.S. mainland. Pyongyang threatened to turn Seoul and Washington into “seas of fire” through a “diversified precise nuclear strike,” using “lighter and smaller nukes unlike what they had in the past.” The word “diversified” was interpreted as Pyongyang’s having developed both plutonium and uranium weapons.

During 2014, the United States and South Korea have revised their estimates and now see a more dire North Korean threat. After recovering components of the North Korean December 2012 launch, South Korea assessed that it had “a range of more than 10,000 kilometers.” In March 2013, Minister of Defense Kim Kwan-jin told the National Assembly that the missile could have reached the U.S. West Coast. New York and Washington, D.C., are approximately 11,000 kilometers from North Korea. U.S. Vice Chairman of the Joint Chiefs of Staff Admiral James A. Winnefeld, Jr., attested to the North Korean missile threat in March 2013, when he stated, “We believe the KN-08 [North Korean long-range missile] probably does have the range to reach the United States.”

According to press reports U.S. experts concluded that the recovered North Korean missile provided “tangible proof that North Korea was building the missile’s cone at dimensions for a nuclear warhead, durable enough to be placed on a long-range missile that could re-enter the earth’s atmosphere from space.” A U.S. official added that South Korea...
China has robust conventional missile defenses designed to counter forces in its immediate area, including U.S. aircraft carriers. As of 2009, it had about 1,100 short-range ballistic missiles with a range of roughly 600 kilometers. It is also acquiring medium-range ballistic missiles that can reach about 2,000 kilometers, and as of 2008, it maintained an arsenal of about 350 land-attack cruise missiles that can reach 3,300 kilometers.

Note: Though not shown, China also possesses the ability to strike targets within the continental United States with its inventory of nuclear warhead-equipped intercontinental ballistic missiles (ICBMs). The CSS-3/DF–4, with a range of 5,400 km, can reach Alaska, while the DF–3IA (11,000 km) and DF–5 (13,000 km) ICBMs can reach the entire U.S.

provided other intelligence suggesting that North Korea had “mastered the miniaturization and warhead design as well.”

**China.** Chinese nuclear forces are largely the responsibility of a unit known as the People’s Liberation Army Second Artillery Corps, which controls most of China’s ballistic missile forces. China’s nuclear ballistic missile forces include land-based missiles with a 13,000 km range that can reach the U.S. (CSS-4) and submarine-based missiles that can reach the U.S. when the submarine is deployed within missile range.

The PRC became a nuclear power in 1964 when it exploded its first atomic bomb as part of its “two bombs, one satellite” effort. In quick succession, China then exploded its first thermonuclear bomb in 1967 and orbited its first satellite in 1970, demonstrating the capability to build a delivery system that can reach the ends of the Earth. China chose to rely primarily on a land-based nuclear deterrent rather than developing two or three different basing systems as the United States did.

Furthermore, unlike the United States or the Soviet Union, China chose to pursue only a minimal nuclear deterrent. The PRC fielded only a small number of nuclear weapons, with estimates of about 100–150 weapons on medium-range ballistic missiles and about 60 ICBMs. Its only ballistic missile submarine (SSBN) conducted relatively few deterrence patrols (perhaps none), and its first-generation submarine-launched ballistic missile (SLBM), the JL-1 (if it ever attained full operational capability), had limited reach. The JL-1’s 1,700-kilometer range makes it comparable to the first-generation Polaris A1 missile the U.S. fielded in the 1960s.

While China’s nuclear force remained stable for several decades, the Second Artillery has been part of the modernization effort of the past 20 years. Consequently, there has been modernization and some expansion of the Chinese nuclear deterrent. The core of China’s ICBM force is the DF-31 series, a solid-fueled, road-mobile system, with a growing number of longer-range DF-41 missiles that may be in the People’s Liberation Army (PLA) operational inventory. China’s medium-range nuclear forces have similarly shifted to mobile, solid rocket systems so that they are both more survivable and more easily maintained.

Notably, the Chinese are expanding their ballistic submarine fleet. Replacing the one Type 092 Xia-class SSBN are several Type 094 Jin-class SSBNs, three of which are already operational. These are expected to be equipped with the new, longer-range JL-2 SLBM. Such a system would provide the PRC with a “secure second-strike” capability, substantially enhancing China’s nuclear deterrent. There is also some possibility that the Chinese nuclear arsenal now contains land-attack cruise missiles. The CJ-20, a long-range, air-launched cruise missile carried on China’s H-6 bomber, may be nuclear tipped, although there is not much evidence that China has pursued such a capability at this time. China is also believed to be working on a cruise missile submarine, which, if equipped with nuclear cruise missiles, would further expand the range of nuclear attack options.

As a result of its modernization efforts, China’s nuclear forces appear to be shifting from a minimal deterrent posture (one suited only to responding to an attack, and even then with only limited numbers) to a more robust, but limited, deterrent posture. While the PRC will still likely field fewer nuclear weapons than either the United States or Russia, it will field a more modern and diverse set of capabilities than India or Pakistan (or North Korea), its nuclear-armed neighbors. If there are corresponding changes in doctrine, modernization will enable China to engage in limited nuclear options in the event of a conflict.

**WWTA:** The WWTA references China’s strengthening of its nuclear deterrent and strategic strike options, its continued development of advanced ballistic and cruise missiles, and participation of its strategic missile forces in military exercises. It offers no judgment on the degree of threat it poses to the U.S.

The WWTA classifies North Korea’s nuclear weapons and missile programs as a “serious threat to the United States.” In this regard, it cites North Korean “commit[ment] to developing long-range missile technology that is capable of posing a direct threat to the United States.” It further states the Director of National Intelligence’s long-held assessment that North Korea’s “nuclear capabilities are intended for deterrence, international prestige, and coercive diplomacy.”

**Summary:** The respective missile threats to the American homeland from North Korea and China are very different. China has many more nuclear weapons, multiple demonstrated and tested means
FIGURE 2

The World's Nuclear Arsenals
Figures are approximate numbers of nuclear warheads.

United Kingdom
The U.K.'s arsenal is small and comprised primarily of 170 Trident submarine-launched ballistic missiles.

France
France began developing nuclear weapons in the late-1950s. Like the U.K., its arsenal is primarily sub-based.

Russia
At least 3,643
Russia's active arsenal is an estimated 1,600 actively deployed strategic warheads and several thousand more short-range nuclear weapons. Russia considers NATO a principal adversary and is willing to use its nuclear weapons to counter conventional threats.

United States
Around 1,842
The U.S. maintains about 1,600 actively deployed strategic warheads and about 200 short-range nuclear warheads in Europe.

U.S. NUCLEAR UMBRELLA
Nations protected, population in millions

<table>
<thead>
<tr>
<th>Nation</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>314</td>
</tr>
<tr>
<td>Japan</td>
<td>128</td>
</tr>
<tr>
<td>Germany</td>
<td>82</td>
</tr>
<tr>
<td>Turkey</td>
<td>75</td>
</tr>
<tr>
<td>France</td>
<td>63</td>
</tr>
<tr>
<td>U.K.</td>
<td>63</td>
</tr>
<tr>
<td>Italy</td>
<td>61</td>
</tr>
<tr>
<td>South Korea</td>
<td>50</td>
</tr>
<tr>
<td>Spain</td>
<td>46</td>
</tr>
<tr>
<td>Poland</td>
<td>39</td>
</tr>
<tr>
<td>Canada</td>
<td>35</td>
</tr>
<tr>
<td>Romania</td>
<td>21</td>
</tr>
<tr>
<td>Netherlands</td>
<td>17</td>
</tr>
<tr>
<td>Greece</td>
<td>11</td>
</tr>
<tr>
<td>Belgium</td>
<td>11</td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>11</td>
</tr>
<tr>
<td>Portugal</td>
<td>11</td>
</tr>
<tr>
<td>Hungary</td>
<td>10</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>7</td>
</tr>
<tr>
<td>Denmark</td>
<td>6</td>
</tr>
<tr>
<td>Slovakia</td>
<td>5</td>
</tr>
<tr>
<td>Norway</td>
<td>5</td>
</tr>
<tr>
<td>Croatia</td>
<td>4</td>
</tr>
<tr>
<td>Albania</td>
<td>3</td>
</tr>
<tr>
<td>Lithuania</td>
<td>3</td>
</tr>
<tr>
<td>Slovenia</td>
<td>2</td>
</tr>
<tr>
<td>Latvia</td>
<td>2</td>
</tr>
<tr>
<td>Estonia</td>
<td>1.3</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>0.5</td>
</tr>
<tr>
<td>Iceland</td>
<td>0.3</td>
</tr>
</tbody>
</table>

TOTAL: 1.09 BILLION

of delivery, and more mature systems, but it is a more stable actor with a variety of interests, including relations with the United States and the international system. North Korea has fewer weapons, and questionable means of delivery, but it is less stable and predictable, with a vastly lower stake in the international system.

**Threat of Regional War**

America’s forward deployed military at bases throughout the Western Pacific, five treaty allies, security partners in Taiwan and Singapore, and growing security partnership with India are keys to the U.S. strategic footprint in Asia. One of its critical allies, South Korea, is under active threat of invasion from the North. Taiwan is under a long-standing, well-equipped, and purposely positioned military threat from China. Japan and the Philippines, by virtue of maritime territorial disputes, are under growing paramilitary, military, and political pressure from China.

In South Asia, India is geographically positioned between two major security threats, Pakistan to its west and China to its northeast. From Pakistan, India faces the additional threat of terrorism, whether state-enabled or carried out without knowledge or control of the state.

**North Korean Attack on American Bases/Allies.** North Korea’s conventional and nuclear missile forces threaten U.S. bases in South Korea, Japan, and Guam.

Beyond its nuclear weapons programs, North Korea poses additional risks to its neighbors. North Korea has an extensive ballistic missile force. Pyongyang has deployed approximately 800 Scud short-range tactical ballistic missiles, 300 No-dong medium-range missiles, and 50 Musudan intermediate-range ballistic missiles. The Scud missiles threaten South Korea, the No-dong can target all of Japan, and the Musudan can hit U.S. bases on Okinawa and Guam. Pyongyang continues its development of the Taepo-dong series of ICBMs, at least some of which have a range sufficient to hit parts of the U.S.\(^{152}\)

North Korea has approximately 1 million people in its military, with reserves numbering several million more. Pyongyang has forward-deployed 70 percent of its ground forces within 90 miles of the Demilitarized Zone (DMZ), making it possible to attack with little or no warning, and of particular concern because South Korea’s capital, Seoul, is only 30 miles south of the DMZ.\(^{153}\) In addition to three conventional corps alongside the DMZ, Pyongyang has deployed two mechanized corps, an armor corps, and an artillery corps.\(^{154}\)

**South Korea.** In 2005, South Korea initiated a comprehensive defense reform strategy to transform its military into a smaller but more capable force. Overall, South Korean military manpower would be reduced approximately 25 percent, from 681,000 to 500,000. The army would face the largest cuts, disbanding four corps and 23 divisions and cutting troops from 560,000 in 2004 to 370,000 in 2020. Seoul planned to compensate for decreased troop levels by procuring advanced fighter and surveillance aircraft, naval platforms, and ground combat vehicles.\(^{155}\)

North Korea’s conventional forces are a very real threat, as clearly demonstrated by two deadly attacks on South Korea in 2010. In March, a North Korean submarine sank the South Korean naval corvette Cheonan in South Korean waters, killing 46 sailors. In November 2010, North Korean artillery shelled Yeonpyeong Island, killing four South Koreans.

Since the North Korean military is predominantly equipped with older ground force equipment, Pyongyang has prioritized deployment of strong asymmetric capabilities, including special operations forces, long-range artillery, and missiles. As noted, North Korea has deployed hundreds of Scud short-range ballistic missiles that can target all of South Korea with explosive, chemical, and biological warheads. The land and sea borders between North and South Korea remain unsettled, heavily armed, and actively subject to occasional, limited armed conflict.

Experts predominantly assess that North Korea has developed several nuclear devices but has not yet mastered the ability to miniaturize a warhead or deliver it by missile. However, U.S. Forces Korea Commander General Curtis Scaparrotti said on October 24, 2014, in reference to North Korea, that “They’ve had the right connections, and so I believe have the capability to have a miniaturized device at this point, and they have the technology to potentially actually deliver what they say they have. We have not seen it tested. And I don’t think as a commander we can afford the luxury of believing perhaps they haven’t gotten there.”\(^{156}\) In any event, enough information is available to conclude that North Korea has likely already achieved the ability
to deliver nuclear weapons by means of its No-dong medium-range missile.\footnote{Factors for such an assessment include the decades-long duration of North Korea’s nuclear and missile programs; the technology, expertise, and components acquired from collaborative involvement with Pakistan, the A. Q. Khan network, and Iran; repeated instances of experts underestimating North Korean nuclear and missile capabilities; North Korea’s declarations of its ability to hit the U.S. and its allies with nuclear weapons; and U.S. and South Korean government assessments of North Korean breakthroughs.}

Press reports indicate that the CIA assessed that Pyongyang received a nuclear package from Pakistan, including detailed, step-by-step instructions to produce a Chinese-designed nuclear warhead that could be delivered by North Korea’s No-dong missile.\footnote{Khan described how, in return for Pakistani assistance to Pyongyang’s centrifuge program, “North Korea would help Pakistan in fitting the nuclear warhead into the Ghauri missile.”} Pakistani nuclear scientist A. Q. Khan reportedly stated that North Korea’s nuclear weapons were “the perfect nuclear weapons, technologically more advanced than ours.” Khan described how, in return for Pakistani assistance to Pyongyang’s centrifuge program, “North Korea would help Pakistan in fitting the nuclear warhead into the Ghauri missile.”

In March 2013, the Korea People’s Army Supreme Command warned, “The U.S. should not forget that Andersen AFB in Guam [and] naval bases in Japan and Okinawa are within striking range of the DPRK’s precision strike means.” In April 2013, U.S. officials told reporters that North Korea “can put a nuclear weapon on a missile, that they have missile-deliverable nuclear weapons, but not ones that can go more than 1,000 miles [1,609 kilometers].”

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**CHART 1**

**South Korean Military Significantly Smaller than North Korean**

South Korea has about half as many active-duty troops as North Korea, and the size disadvantage carries over to many categories of military equipment and vehicles.

<table>
<thead>
<tr>
<th>SOUTH KOREA</th>
<th>NORTH KOREA</th>
<th>SOUTH KOREAN LEVELS AS A PERCENTAGE OF NORTH KOREAN LEVELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active-duty troops</td>
<td>639,000</td>
<td>1,190,000</td>
</tr>
<tr>
<td>Reserve troops</td>
<td>3,200,000</td>
<td>7,700,000</td>
</tr>
<tr>
<td>Tanks</td>
<td>2,400</td>
<td>4,200</td>
</tr>
<tr>
<td>Armored vehicles</td>
<td>2,700</td>
<td>2,200</td>
</tr>
<tr>
<td>Artillery weapons</td>
<td>5,300</td>
<td>8,600</td>
</tr>
<tr>
<td>Rocket launchers</td>
<td>200</td>
<td>4,800</td>
</tr>
<tr>
<td>Ground-to-ground missile launchers</td>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>Naval surface combatants</td>
<td>120</td>
<td>420</td>
</tr>
<tr>
<td>Amphibious ships</td>
<td>10</td>
<td>260</td>
</tr>
<tr>
<td>Submarines</td>
<td>10</td>
<td>70</td>
</tr>
<tr>
<td>Combat aircraft</td>
<td>460</td>
<td>820</td>
</tr>
<tr>
<td>Transport aircraft</td>
<td>40</td>
<td>330</td>
</tr>
<tr>
<td>Helicopters</td>
<td>680</td>
<td>300</td>
</tr>
</tbody>
</table>

The WWTA calls North Korea's nuclear weapons and missile programs “a serious threat to ... the security environment in East Asia.” It also references the “reach of its proliferation activities,” and states that it “might again export nuclear technology.” It does not explicitly reference threats to American allies and/or bases in the region.

Summary: North Korean forces arrayed against American allies in South Korea and Japan are substantial, and North Korea’s history of provocation is a consistent indicator of its intent to achieve its political objectives by threat of force.

Chinese Threat to Taiwan. China’s long-standing threat to take Taiwan by force is both a threat to a major American security partner and a threat to the American interest in peace and stability in the Western Pacific.

Regardless of the state of the relationship at any given time, Chinese leaders from Deng Xiaoping and Mao Zedong to Xi Jinping have consistently emphasized the importance of reclaiming Taiwan. The island—along with Tibet—is the clearest example of a geographical “core interest” in Chinese policy. China has never renounced the use of force, and it continues to employ political warfare against Taiwan’s political and military leadership.

For the Chinese leadership, the failure to effect unification, whether peacefully or through the use of force, would reflect fundamental political weakness in the PRC. For this reason, there is no realistic means by which any Chinese leadership can back away from the stance of having to reunify the island with the mainland—if necessary, by force. As a result, the island remains an essential part of the PLA’s “new historic missions,” shaping PLA acquisitions and military planning.

Two decades of double-digit increases in China’s announced defense budget have produced a much more modern PLA, much of which remains focused on a Taiwan contingency. This modernized force includes more than 1,000 ballistic missiles, a modernized air force, and growing numbers of modern surface combatants and diesel-electric submarines capable of mounting a blockade. As the 1995–1996 Taiwan Strait crisis demonstrated, Beijing is prepared to use at least open displays of force—and might have been willing to go further in the absence of a strong American presence.

It is widely posited that China’s anti-access/area-denial (A2/AD) capabilities are largely aimed at forestalling American intervention in support of friends and allies in the western Pacific, including Taiwan. By holding at risk key American platforms and systems (e.g., aircraft carriers), the Chinese seek to delay or even deter American intervention in support of key friends and allies, allowing the PRC to achieve a fait accompli. The growth of China’s military capabilities is specifically oriented toward countering America’s ability to defend Taiwan.

Chinese efforts to reclaim Taiwan are not limited to overt military means. The “three warfares” highlight Chinese political warfare methods, including legal warfare/lawfare, public opinion warfare, and psychological warfare. The PRC employs such approaches to undermine both Taiwan’s will to resist and America’s willingness to support Taiwan. The Chinese goal would be to “win without fighting,” to take Taiwan without firing a shot or with only minimal resistance before the United States could organize an effective response.

WWTA: The WWTA does not reference the threat that China poses to Taiwan.

Summary: The Chinese threat to Taiwan is long-standing, sometimes obscured, but never off the table. China’s ability to execute a military action against Taiwan, albeit at high economic and political cost, is improving. Its objective of fully unifying Taiwan with the mainland under the full authority of the PRC central government—by force if necessary—is consistent.

Major Chinese Border Incursion into India. The possibility of armed conflict between India and China, while currently remote, poses a threat to U.S. interests because it could disrupt the territorial status quo and raise nuclear tensions in the region. A border conflict between India and China could also prompt Pakistan to try to take advantage of the situation, further contributing to regional instability.

Long-standing border disputes that led to a Sino-Indian War in 1962 have been heating up again in recent years. In April 2013, the most serious border incident between India and China in over two decades occurred when Chinese troops settled for three weeks several miles inside Indian territory on the Depsang Plains in Ladakh. India claims that China occupies more than 14,000 square miles of Indian territory in the Aksai Chin along its northern border in Kashmir, while China lays claim to more than 34,000 square miles of India’s northeastern state of Arunachal Pradesh.
The Chinese are building up military infrastructure and expanding a network of road, rail, and air links in the border areas. To meet these challenges, the new Bharatiya Janata Party (BJP) government in India has also committed to expanding infrastructure development along its disputed border with China, especially in the Indian states of Arunachal Pradesh and Sikkim. While China currently holds a decisive military edge over India, New Delhi is engaged in an ambitious military modernization program.

The Border Defense and Cooperation Agreement (BDCA) signed during then-Prime Minister Manmohan Singh’s visit to China in October 2013 is unlikely to reduce border tensions significantly or lead to a broader settlement in the near future. The accord is aimed at putting into place institutional mechanisms for maintaining peace along the border, but several Indian analysts worry that it is part of China’s effort to keep in place the status quo, which favors the Chinese. Some have even contended that the Chinese intend to buy time on their border disputes with India through the BDCA while focusing on other territorial claims in the Asia–Pacific.  

The BDCA affirms that neither side will use its military capability against the other and proposes opening a hotline between each country’s military headquarters, instituting meetings between border personnel in all sectors, and ensuring that neither side tails the other’s patrols along the Line of Actual Control (LAC).

The agreement also includes language stipulating that in the event the two sides come face-to-face, they “shall exercise maximum self-restraint, refrain from any provocative actions, not use force or threaten to use force against the other side, treat each other with courtesy, and prevent exchange of armed conflict.”

WWTA: The WWTA references “long-standing border tensions” between India and China and efforts at confidence building between the two,
including the first bilateral military exercises in five years, but it offers no judgment on the threat to India from China.

Summary: American interest in India’s security is substantial and expanding. The threat to this interest from China is active, albeit part of a broader, multifaceted bilateral relationship that includes many cooperative dimensions.

Major Pakistan-backed Terrorist Attack on India Leading to Open Warfare Between India and Pakistan. An Indo-Pakistani conflict would jeopardize multiple U.S. interests in the region and increase the threat of global terrorism. Pakistan would rely on militant non-state actors to help it fight India and thus create a more permissive environment in which various terrorist groups could operate freely. The threat of conflict going nuclear would force U.S. businesses to exit the region and disrupt investment and trade flows, mainly between the U.S. and India, whose bilateral trade currently totals around $100 billion. An actual nuclear exchange would be devastating, both in human lives lost and long-term economic damage.

India and Pakistan are engaged in a nuclear arms race that threatens stability throughout the Subcontinent. They both tested nuclear weapons in 1998, thus establishing themselves as overtly nuclear weapons states. Both countries are developing naval nuclear weapons and already possess ballistic missile and aircraft-delivery platforms.

Pakistan has the fastest-growing nuclear weapons arsenal in the world today. Islamabad currently has an estimated 100 nuclear weapons and is developing war plans that include the use of tactical nuclear weapons in the event of conflict with India. Pakistan’s recent focus on incorporating tactical nuclear weapons into its war-fighting doctrine is developing war plans that include the use of tactical nuclear weapons in the event of conflict with India. Pakistan’s recent focus on incorporating tactical nuclear weapons into its war-fighting doctrine and following the 2008 Mumbai attacks, but the new government in India would be under great pressure to react strongly in the face of a terrorist provocation. Pakistan’s recent focus on incorporating tactical nuclear weapons into its war-fighting doctrine has also raised concern that if conflict does break out, there is now a higher risk of nuclear exchange.

WWTA: The WWTA does not reference the threat to American interests from a Pakistani attack on India and potential escalation.

Summary: Indian military retaliation against a Pakistan-backed terrorist strike against India could include targeted airstrikes on terrorist train-
Areas of Dispute in the East China Sea

**KOREAN MARITIME BOUNDARIES**
South Korea’s claim constitutes the Northern Limit Line, which serves as an operational maritime border between North and South. However, sovereignty over the area is in dispute.

**LIANCOURT ROCKS**
Known as “Dokdo” in South Korea and “Take-shima” in Japan, the two disputed islands—better measured in acres than square kilometers—evoke considerable emotion.

**SENKAKU ISLANDS**
The U.S. has repeatedly declared that because they fall under Japanese administrative jurisdiction, the Senkaku Islands, known as “Diaoyu” in China and Taiwan, fall within the scope of the U.S.–Japan security treaty.

ing camps inside Pakistan. This would likely lead to broader military conflict with some prospect of escalating to a nuclear exchange.

**Threats to the Commons**

The U.S. has critical direct interests at stake in the East and South Asia commons that include sea, air, space, and cyber interests.

Washington has long provided the security backbone in these areas, which in turn has supported the region’s remarkable economic development. However, China is taking increasingly assertive steps to secure its own interests in these areas independent of U.S. efforts to maintain freedom of the commons for all in the region. It cannot be assumed that China has an interest in either the current legal conception of the commons or American predominance in securing them.

**Maritime and Airspace Commons.** The aggressiveness of the Chinese navy, maritime law enforcement forces, and air forces in and over the waters of the East and South China Sea, coupled with ambiguous, extralegal territorial claims and assertion of control there, poses an incipient threat to American and overlapping allied interests.

**East China Sea.** Since 2010, China has intensified its efforts to assert claims of sovereignty over the Senkaku Islands of Japan in the East China Sea. Beijing asserts not only exclusive economic rights within the disputed waters, but also recognition of...
“historic” rights to dominate and control those areas as part of its territory.

Chinese and Japanese maritime law enforcement and coast guard vessels regularly operate close to the waters surrounding the Senkakus that are administered by Japan, raising the potential for miscalculation and escalation into a military clash.

In November 2013, China declared an air defense identification zone (ADIZ) in the East China Sea that largely aligned with its claimed maritime exclusive economic zone (EEZ). The People’s Liberation Army declared that it would “take defense emergency measures to respond to aircraft that do not cooperate in identification or refuse to follow orders.”

The announcement was a provocative act and another Chinese attempt to change the status quo unilaterally. The ADIZ declaration is part of a broader Chinese pattern of using intimidation and coercion to assert expansive extralegal claims of sovereignty and/or control incrementally.

South China Sea. Roughly half of global trade in goods, a third of trade in oil, and over half of global liq-
ufied natural gas shipments pass through the South China Sea, which also accounts for approximately 10 percent of global fish catch and may contain massive potential reserves of oil and natural gas. It is hotly contested by six countries, including Taiwan and the Philippines, an American security treaty ally. Incidents between Chinese law enforcement vessels and other claimants’ fishing boats occur on a regular basis in the South China Sea, as do other Chinese assertions of administrative authority. The U.S. presence also has become an object of Chinese attention, from confrontations with the ocean surveillance ship USNS Impeccable and the destroyer USS John McCain in 2009 to the confrontation with the guided-missile cruiser USS Cowpens in December 2013. The most serious inter-regional incidents in the South China Sea have occurred between China and the Republic of the Philippines (RP). In 2012, an RP naval ship operating on behalf of its coast guard challenged private Chinese poachers in waters around Scarborough Shoal. The resulting escalation left Chinese government ships in control of the Shoal. More recently, in March 2014, Chinese government ships attempted to prevent the rotation of troops on and replenishment of Philippines-held Second Thomas Shoal. Also in 2014, the Chinese began reclamation at several sites in the Spratlys on a scale that the Philippines Defense Minister called “massive and nonstop” and deployed an oil exploration rig in Vietnam’s EEZ. The deployment, accompanied by dozens of ships to include PLA Navy and other public vessels, raised tensions with Vietnam over the disputed waters. Chinese officials have hinted that Beijing may declare an ADIZ above the South China Sea, presumably covering the 80 percent of the sea over which, for many years, it has consistently claimed “indisputable sovereignty.” Airpower. Although China is not yet in a position to enforce an ADIZ consistently in either area, the steady two-decade improvement of the PLAAF may provide the necessary capabilities. Chinese observations of recent conflicts, including wars in the Persian Gulf, the Balkans, and Afghanistan, have all emphasized the growing role of airpower and missiles in conducting “non-contact, non-linear, non-symmetrical” warfare. China also seems to have made a point of publicizing its air force modernization, unveiling new aircraft prototypes, including two new stealthy fighters, on the eve of visits by American Secretaries of Defense. (Secretary Chuck Hagel’s visit in 2014 was preceded by the unveiling of the J-15 naval fighter.) Those aircraft have been flown much more aggressively, with Chinese fighters flying very close to Japanese aircraft in China’s East China Sea ADIZ and conducting armed combat air patrols in the skies over Tibet. Consequently, the PLAAF has shed most of its 1960s-era aircraft, replacing them with much more modern systems. Today’s PLAAF is dominated by 4th- and 4.5th-generation fighter aircraft. These include the Su-27/Su-30/J-11 system, comparable to the F-15 or F-18, that dominates both the fighter and strike missions. Older airframes such as the J-7 are being steadily retired from the fighter inventory. China is also believed to be preparing to field two stealthy fifth-generation fighter designs. The J-20 is the larger aircraft, resembling the American F-22 fighter. The J-31 appears to resemble the F-35 but with two engines rather than one. One of the greatest challenges to Chinese fighter design remains the production of advanced combat aircraft engines. China fields some long-range strike aircraft, largely the H-6 bomber based on the Soviet-era Tu-16 Badger. While this aircraft has little prospect of penetrating advanced air defenses, it is suitable as a cruise missile carrier. China also has used the H-6 as the basis for initial efforts at developing an aerial tanker fleet and seems to be examining other options as well. As China deploys more tankers, this will extend the range and loiter time of its fighter aircraft. China will then be better equipped to enforce its newly declared East China Sea Air Defense Identification Zone and any possible future South China Sea ADIZ. A variety of modern support aircraft have also entered the PLAAF inventory, including airborne early warning (AEW), command and control (C2), and electronic warfare (EW) aircraft. The Zhuhai Air Show has seen Chinese companies displaying a variety of unmanned aerial vehicles (UAVs), reflecting substantial investments and research and development efforts. The surveillance and armed UAV systems include the Xianglong (Soaring Dragon) and Sky Saber systems. The most recent DOD report on Chinese capabilities also reports that China has tested a stealthy flying-wing UAV, the Lijian. China’s air defenses, which are under the control of the PLAAF, have also been steadily modernizing.
China has acquired the advanced S-300 surface-to-air missile (SAM) system (SA-10B/SA-20), which is roughly analogous to the American Patriot SAM system, as well as developing their own advanced SAM (the HQ-9), which is deployed both on land and at sea. In early 2014, Russia announced that it would sell China the S-400 SAM system. This would mark a substantial improvement in PLAAF air defense capabilities, as the S-400 has anti-aircraft and anti-missile capabilities. China has deployed these SAM systems in a dense, overlapping belt along its coast, protecting the nation's economic center of gravity. Key industrial and military centers such as Beijing are also heavily defended by SAM systems.

A third component of the PLAAF is China's airborne forces. The 15th Airborne Army is part of the PLAAF, with three divisions of 10,000–15,000 personnel each. These are not believed to be assigned to any of the Chinese military regions but are instead a strategic reserve as well as rapid reaction force. In 2009, in the military review associated with the 60th anniversary of the founding of the PRC, Chinese airborne units paraded through Tiananmen Square with ZBD-03 mechanized airborne combat vehicles. These vehicles provide Chinese airborne forces with tactical mobility as well as some degree of protected fire support from their 30mm autocannon and HJ-73 anti-tank missile (a domestic version of the AT-3 Sagger)—something American airborne forces continue to lack.

One shortcoming of the Chinese airborne forces is the lack of military transport aircraft, although the PLAAF can undoubtedly call upon China's substantial civilian fleet of airliners in time of crisis or war.

Seapower. As the world's foremost trading state, China depends on the seas for its economic well-being. China’s factories are increasingly powered by imported oil, and Chinese diets contain a growing percentage of imported food. Chinese products rely on the seas to be moved to markets. At the same time, because China's economic center of gravity is now in the coastal region, it has had to emphasize maritime power to defend key assets and areas. Consequently, China has steadily expanded its maritime power, including its merchant marine and maritime law enforcement capabilities, but especially the People's Liberation Army Navy (PLAN).

The PLAN is no longer an unsophisticated coastal defense force. Instead, since the end of the Cold War, China's navy has moved away from a reliance on mass toward incorporating advanced platforms and weapons. Many obsolete vessels have been decommissioned, including scores of older, missile-armed, fast attack craft. In their place, China has produced a range of more capable combatants and is building each class in significant numbers. These range from the Type 022 Houbei missile-armed catamaran, armed with sea-skimming supersonic anti-ship cruise missiles, to the Type-052C Luyang-II destroyer, equipped with a phased-array radar for its HQ-9 surface-to-air missile (SAM) system. The HQ-9 is believed to be comparable to early model Patriot missiles, with its ability to combat most air-breathing systems and a limited anti-ballistic missile capability. Although these new ships are not replacing older Chinese surface combatants on a one-for-one basis, the overall capability of the PLAN surface force is steadily improving.

Similarly, the PLAN has been modernizing its submarine force. Since 2000, the PLAN has consistently fielded between 50 and 60 diesel-electric submarines, but the age and capability of the force has been improving as older boats, especially 1950s-vintage Romeo-class boats, are replaced with newer designs. These include a dozen Kilo-class submarines purchased from Russia and domestically designed and manufactured Song and Yuan class. All of these are believed capable of firing not only torpedoes, but also anti-ship cruise missiles. The Chinese have also developed variants of the Yuan, with an air-independent propulsion (AIP) system that reduces the boats’ vulnerability by removing the need to use noisy diesel engines to recharge batteries.

The PLAN also has been augmenting its aerial maritime strike capability. In addition to more modern versions of the H-6 twin-engine bombers (a version of the Soviet/Russian Tu-16 Badger), the PLAN’s Naval Aviation force has introduced a range of other strike aircraft into the inventory. These include the JH-7/FBC-1 Flying Leopard, which can carry between two and four YJ-82 anti-ship cruise missiles, and the Su-30 strike fighter. Within Chinese littoral waters, the PLAN Air Force can bring a significant amount of firepower to bear.

The PLAN also has been working to improve its “fleet train.” The 2010 PRC defense white paper notes the accelerated construction of “large support vessels.” It also specifically notes that the navy is exploring “new methods of logistics support for sustaining long-time maritime missions.”
As with other aspects of PLA modernization, even as the PLAN is upgrading its weapons, it is also improving its doctrine and training, including increased emphasis on joint operations and the incorporation of electronic warfare into its training regimen. Such improvements suggest that PLA Air Force assets, space and cyber operations, and even Second Artillery forces might support naval aviation strikes. The new anti-ship ballistic missile forces, centered on the DF-21D anti-ship ballistic missile (now reportedly at initial operational capability), should be seen as part of joint Chinese efforts to control the seas, complementing PLAAF and PLAN air, surface, and sub-surface forces.

WWTA: The WWTA references China’s investment in power projection, advanced weapons, and the development of the Y-20 transport plane but is quiet on the threat that these Chinese capabilities or others pose to the airspace commons.

Summary: China is increasingly capable of dominating the airspace across the East Asian littoral. The PLAAF’s array of modern systems gives China a substantial edge over many of its neighbors. The Japanese Air Self Defense Force and the Republic of Korea Air Force are not expected to field F-35s before the end of the decade. Neither Taiwan nor any Southeast Asian nation can match the PLAAF’s number of high-performance aircraft.

Potential for Regional War. Because Beijing and others in the region see active disputes over the East and South China Seas not as differences regarding the administration of the commons, but rather as matters of territorial sovereignty, there exists the threat of armed conflict between China and American allies that are also claimants, particularly Japan and the Philippines.

Beijing prefers to accomplish its objectives quietly and through non-military means. When necessary, however, it uses military and economic threats, bombastic language, and enforcement through military bullying. Chinese paramilitary-implemented, military-backed encroachment in support of expansive extralegal claims could lead to an armed clash. Even an inadvertent incident would be difficult to constrain from escalating toward a broader military confrontation.

Rising nationalism is exacerbating tensions, making geostrategic relations in Asia increasingly complex and volatile. Nationalist themes are becoming an increasingly strong undercurrent, affecting policymaking. Although the nationalist phenomenon is not new, it is gaining force and complicating efforts to maintain regional stability.

Governments may choose to exploit nationalism for domestic political purposes, but they also run the risk of being unable to control the genie that they have released. Nationalist rhetoric is mutually reinforcing, which makes countries less likely to back down than in the past. The increasing power that the Internet and social media provide to the populace, largely outside of government control, adds an element of unpredictability to future clashes.

In case of armed conflict between either China and the Philippines or China and Japan, the U.S. could be required to exercise its treaty commitments.

WWTA: The WWTA states that “China will probably continue its increasingly provocative approach to maritime disputes, including a hardline stance toward Japan over the Senkaku Islands.” It also cites continued friction and the “increase[d] risk of escalation” over territorial disputes. It offers no judgment either on the threat that this poses to American interests or on the prospect for large-scale, conventional conflict in the region.

Summary: The Chinese have a growing capacity to disrupt the fair and free administration of the commons that benefits the entire region. Territorial disputes related to what the U.S. considers the commons, particularly those involving Japan and the Philippines, have the potential to draw the U.S. into conflict.

Space. One of the key force multipliers for the United States is its extensive array of space-based assets. Through its various satellite constellations, the U.S. military can track opponents, coordinate friendly forces, engage in precision strikes against enemy forces, and conduct battle-damage assessments so that its munitions are expended efficiently.

The American military is more reliant than many others on space-based systems because it is also an expeditionary military (i.e., its wars are conducted far distant from the homeland). Consequently, it requires global rather than regional reconnaissance, communications and data transmission, and meteorological information and support. At this point, only space-based systems can provide this sort of information on a real-time basis. The U.S. can leverage space in ways that no other country can, and this is a major advantage, but this heavy reliance on space systems is also a key American vulnerability.
China fields an array of space capabilities, including its own navigation and timing satellites, the BeiDou/Compass system. It has three satellite launch centers, with a fourth under construction. China's interest in space dominance includes not only accessing space, but also denying opponents the ability to do the same. As one Chinese assessment notes, space capabilities provided 70 percent of battlefield communications, over 80 percent of battlefield reconnaissance and surveillance, and 100 percent of meteorological information for American operations in Kosovo. Moreover, 98 percent of precision munitions relied on space for guidance information. In fact, “It may be said that America's victory in the Kosovo War could not be achieved without fully exploiting space.”

Consequently, the PLA has been developing a range of anti-satellite capabilities. These include both hard-kill and soft-kill systems. The former include direct-ascent kinetic-kill vehicles (DA-KKV), such as the system tested in 2007, but also more advanced systems that are believed capable of reaching targets in mid-Earth orbit and even geosynchronous orbit. The latter include anti-satellite lasers for either dazzling or blinding purposes. This is consistent with PLA doctrinal writings, which emphasize the need to control space in future conflicts. “Securing space dominance has already become the prerequisite for establishing information, air, and maritime dominance,” says one Chinese teaching manual, “and will directly affect the course and outcome of wars.”

Soft-kill attacks need not come only from dedicated weapons, however. The case of Galaxy-15, a communications satellite owned by Intelsat Corporation, showed how a satellite could effectively disrupt communications simply by being in “switched on” mode all of the time. Before it was finally brought under control, it had drifted through a portion of the geosynchronous belt, forcing other satellite owners to move their assets and juggle frequencies. A deliberate such attempt by China could prove far harder to handle, especially if conducted in conjunction with attacks by kinetic systems or directed-energy weapons.

WWTAT: The WWTAT references China's understanding of American advantages and vulnerabilities in space and its “development of capabilities to disrupt US use of space in a conflict.” It does not offer a judgment on the threat that this poses to the space commons.

Summary: The PRC poses a challenge to the United States that is qualitatively different from the challenge posed by any other potential adversary in the post–Cold War environment. It is the first nation to be capable of accessing space on its own while also jeopardizing America's ability to do the same.

Cyber. Threats in this area derive primarily from China and North Korea, and both are serious.

China. The Verizon Risk Center identified China in 2013 as the “top external actor from which [computer] breaches emanated, representing 30 percent of cases where country-of-origin could be determined.” Given the difficulties of attribution, country of origin should not necessarily be conflated with the perpetrators, but forensic efforts have identified at least one Chinese military unit with cyber intrusions. Similarly, the Verizon report concluded that China was the source of 95 percent of state-sponsored cyber-espionage attacks.

China's cyber-espionage efforts are often aimed at economic targets, reflecting the much more holistic Chinese view of both security and information. Rather than creating an artificial dividing line between military security and civilian security, much less information, the PLA plays a role in supporting both aspects and seeks to obtain economic intellectual property as well as military electronic information.

This is not to suggest, however, that the PLA has not emphasized the military importance of cyber warfare. Chinese military writings since the 1990s have emphasized a fundamental transformation in global military affairs (shijie junshi gaige). Future wars will be conducted through joint operations involving multiple services rather than through combined operations focused on multiple branches within a single service. These future wars will span not only the traditional land, sea, and air domains, but also outer space and cyberspace. The latter two arenas will be of special importance, because warfare has shifted from an effort to establish material dominance (characteristic of Industrial Age warfare) to establishing information dominance (zhi xinxi quan). This is due to the rise of the Information Age and the resulting introduction of information technology into all areas of military operations.

Consequently, according to PLA analysis, future wars will most likely be “local wars under informationized conditions.” That is, they will be wars in which information and information technology not
only will be widely applied, but also will be a key basis of victory. The ability to gather, transmit, analyze, manage, and exploit information will be central to winning such wars: The side that is able to do these things more accurately and more quickly will be the side that wins. This means that future conflicts will no longer be determined by platform-versus-platform performance and not even by system against system (xitong). Rather, conflicts are now clashes between rival arrays of systems of systems (tixi).188

Chinese military writings suggest that a great deal of attention has been focused on developing an integrated computer network and electronic warfare (INEW) capability. This would allow the PLA to reconnoiter a potential adversary’s computer systems in peacetime, influence opponent decision-makers by threatening those same systems in times of crisis, and disrupt or destroy information networks and systems by cyber and electronic warfare means in the event of conflict. INEW capabilities would complement psychological warfare and physical attack efforts to secure “information dominance,” which Chinese military writings emphasize as essential for fighting and winning future wars.

Attacks on computer networks in particular have the potential to be extremely disruptive. The recent indictment of five serving PLA officers on the grounds of cyber espionage highlights how active the Chinese military is in this realm.189

It is essential to recognize, however, that the PLA views computer network operations as part of information operations (xinxi zuozhan), or information combat. Information operations are specific operational activities that are associated with striving to establish information dominance. They are conducted in both peacetime and wartime, with the peacetime focus on collecting information, improving its flow and application, influencing opposing decision-making, and effecting information deterrence.

Information operations involve four mission areas:

- **Command and Control Missions.** An essential part of information operations is the ability of commanders to exercise control over joint operations by disparate forces. Thus, command, control, communications, computers, intelligence, surveillance, and reconnaissance structures are a key part of information operations, providing the means for collecting, transmitting, and managing information.

- **Offensive Information Missions.** These are intended to disrupt the enemy’s battlefield command and control systems and communications networks, as well as to strike the enemy’s psychological defenses.

- **Defensive Information Missions.** Such missions are aimed at ensuring the survival and continued operation of information systems. They include deterring an opponent from attacking one’s own information systems, concealing information, and combating attacks when they do occur.

- **Information Support and Information-safeguarding Missions.** The ability to provide the myriad types of information necessary to support extensive joint operations, and do so on a continuous basis, is essential to their success.190

Computer network operations are integral to all four of these overall mission areas. They can include both strategic and battlefield network operations and can incorporate both offensive and defensive measures. They also include protection not only of data, but also of information hardware and operating software.

Computer network operations will not stand alone, however, but will be integrated with electronic warfare operations, as reflected in the phrase “network and electronics unified (wangdian yiti).” Electronic warfare operations are aimed at weakening or destroying enemy electronic facilities and systems while defending one’s own.191 The combination of electronic and computer network attacks will produce synergies that affect everything from finding and assessing the adversary to locating one’s own forces to weapons guidance to logistical support and command and control.

**North Korea.** In 2009, North Korea declared that it was “fully ready for any form of high-tech war.”192 According to South Korea’s National Intelligence Service, North Korean leader Kim Jong-un declared that cyber warfare was “a magic weapon” that empowered Pyongyang to launch “ruthless strikes” against South Korea.193

The Reconnaissance General Bureau, North Korea’s intelligence agency, oversees Unit 121 with
almost 6,000 “cyber-warriors” dedicated to attacking Pyongyang’s enemies, up from 3,000 just two years ago. Defectors from the unit have told South Korean intelligence officials that hackers are sent to other countries for training as well as to conduct undercover operations. The unit’s hackers never operate primarily within North Korea since the country’s limited computer network would make it too easy to identify the source of the attack. High-profile attacks from the “DarkSeoul,” a cyber gang that has conducted powerful and coordinated attacks against the enemies of North Korea, are a prime example of North Korean cyber operations based across the globe.

Seoul concluded that North Korea was behind cyber attacks using viruses or distributed denial-of-service tactics against South Korean government agencies, businesses, banks, and media organizations in 2009, 2011, 2012, and 2013. The most devastating attack in 2013 against South Korean banks and media outlets deleted the essential Master Boot Record from 48,000 computers. North Korea also jammed GPS signals in 2012, posing a risk to hundreds of airplanes transiting Seoul’s Incheon airport. Lieutenant General Bae Deag-sig, head of South Korea’s Defense Security Command, stated that “North Korea is attempting to use hackers to infiltrate our military’s information system to steal military secrets and to incapacitate the defense information system.”

WWTA: According to the WWTA, “China will continue its expansive worldwide program of network exploitation and intellectual property theft.” It calls North Korea an unpredictable actor in the cyber context and states that “cyber espionage or attack capabilities might be used in an attempt to either provoke or destabilize the United States or its partners.”

Summary: With obvious implications for the U.S., the PLA emphasizes the need to suppress and destroy an enemy’s information systems while preserving one’s own, as well as the importance of computer and electronic warfare in both the offensive and defensive roles. Methods to secure information dominance would include establishing an information blockade; deception (including through electronic means); information contamination; and information paralysis.

**Threat Scores**

**AfPak-Based Terrorism.** There is a great deal of uncertainty surrounding the threat from AfPak. For the U.S., Pakistan is both a security partner and a security challenge. Pakistan provides a home and support to terrorist groups that are hostile to the U.S., other partners in South Asia like India, and the fledgling government of Afghanistan. Afghanistan is particularly vulnerable to efforts to destabilize it. Both Pakistan and Afghanistan are already among the most unstable states in the world. The instability of the former, given its nuclear arsenal, has a direct bearing on U.S. security.

The IISS *Military Balance* addresses only the military capabilities of states. Consequently, it does not provide any accounting of sub-state entities except as they relate to the possibility of Pakistani nuclear weapons falling into hands that would broadly threaten the American homeland or interests more broadly. In this regard, IISS states that Pakistan’s “nuclear weapons are currently believed to be well-secured against terrorist attack.” Pakistan’s Army Strategic Forces Command has 30 medium-range ballistic missiles, 30 short-range ballistic missiles, land-attack cruise missiles, and “likely nuclear capable” artillery. It also has “1-2 squadrons of F-16A/B or Mirage 5 attack aircraft that may be assigned a nuclear strike role.”

This Index assesses the overall threat from AfPak-based terrorists, considering the range of contingencies, as “aggressive” and “capable.”

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China. China presents the United States with the most comprehensive security challenge in the region. It poses various threat contingencies across all three areas of vital American national interests: homeland; regional war (extending from attacks on overseas U.S. bases or against allies and friends); and the global commons. China’s provocative behavior is well-documented. It is challenging the U.S. and its allies, like Japan, at sea and in cyberspace. It has raised concerns on its border with India and is a standing threat to Taiwan. While there may be a lack of official transparency, publicly available sources shed considerable light on its fast-growing military capabilities.

According to the IISS Military Balance, among the key weapons in China’s inventory are 66 Chinese ICBM’s; four SSBMs; 6,840 main battle tanks; 66 tactical submarines; 70 principal surface combatants (including one aircraft carrier and 15 destroyers); and 2,193 combat-capable aircraft in its air force. There are 1,600,000 members of the People’s Liberation Army.

With regard to these capabilities, The Military Balance states that “a lack of war-fighting experience, questions over training and morale, and key capability weaknesses in areas such as C4ISTAR and ASW, mean that [the PLA] remains qualitatively inferior, in some respects, to more technologically advanced armed forces in the region—such as South Korea and Japan—and it lags far behind the U.S.” IISS also points out that China’s aircraft carrier has “yet to demonstrate the capabilities that would enable carrier battle group operations” and limitations with regard to its capacity for “sustained conflict within the region” and deployment beyond the region.

This Index assesses the overall threat from China, considering the range of contingencies, as “aggressive” and “gathering.”

### Threats: China

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North Korea. In the first instance, North Korea poses the most acute security challenge for American allies and bases in South Korea. However, it is also a significant challenge to U.S. allies in Japan and American bases there and in Guam.

North Korean authorities are very actively and vocally provocative toward the United States. While North Korea has used its missile and nuclear tests to enhance its prestige and importance—domestically, regionally, and globally—and to extract various concessions from the United States in negotiations over its nuclear program and various aid packages, such developments also improve North Korea’s military posture. North Korea has likely already achieved warhead miniaturization, the ability to place nuclear weapons on its medium-range missiles, and an ability to reach the continental United States with a missile.

According to the IISS Military Balance, key weapons in North Korea’s inventory include 3,500-plus main battle tanks, 560-plus light tanks, and 21,000 pieces of artillery. The navy has 72 tactical submarines, three frigates, and 382 patrol and coastal combatants. The air force has 603 combat-capable aircraft, including 80 H-5 bombers. IISS counts 1,020,000 members of the North Korean army. With regard to these capabilities, IISS states that “[e]quipment is mainly in a poor state, and training, morale and operational readiness all remain questionable.” It also cites North Korea’s “active pursuit” of nuclear weapons and the prospect that in the future, it could use its No-dong missiles and H-5 bombers to “deliver nuclear warheads or bombs.”
This *Index* assesses the overall threat from North Korea, considering the range of contingencies, as “aggressive” and “capable.”

**Threats: North Korea**

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Conclusion: Global Threat Level

A merica and its interests face challenges around the world from countries and organizations that have (1) interests that conflict with those of the U.S., (2) sometimes hostile intentions toward the U.S., and (3) growing military capabilities. The U.S. government faces the constant challenge of employing the right mix of U.S. diplomatic, economic, public information, intelligence, and military capabilities, sometimes alone but more often with allies, to protect and advance U.S. interests.

In Europe, Russia is the primary threat to American interests. It is a threat that is aggressive and gathering. This is particularly the case in its neighborhood and along its borders, as most recently demonstrated in the current Ukraine crisis.

In the Middle East, Iran has long been the state actor most hostile to American interests. The level of provocation that it demonstrates with regard to them at present outstrips its actual capability. Also in the Middle East, a broad array of terrorist groups, including state-sponsored Hezbollah, are the most hostile of any of the global threats to America examined in the Index. They are, however, also evaluated as among the least capable.

In Asia, China and North Korea represent a degree of provocation that the Index classifies as “aggressive.” By contrast to the principal state-based threat in Middle East, however, China represents a gathering and fuller range of capabilities that could be used in ways that are contrary to American interests. North Korea is a more narrowly defined threat than China in terms of capabilities, but it nevertheless has notable implications for the homeland.

Just as there are American interests that are not covered by this Index, there may be additional threats to American interests that are not identified here. The Index focuses on the more apparent sources of risk and those in which the risk is more grave.

Compiling the assessments of these threat sources, the Index rates the overall global threat environment as “aggressive” and “capable” in the areas of threat actor behavior and material ability to harm U.S. security interests, respectively, leading to an aggregated threat score of “elevated.”

While the final score straddles the two areas measured (behavior and capability), this Index adopts the middle category—“elevated”—as the best characterization of the global threat since the physical ability to act on intent matters a great deal. One can desire to take action, but being able to do so is dependent on the material resources one has at hand. Thus, all of the significant threat actors relevant to U.S. vital security interests may desire to impose their will on the U.S. as a nation, but only two have the actual ability to make a credible attempt.
**Behavior of Threats**

<table>
<thead>
<tr>
<th>Threat</th>
<th>Hostile</th>
<th>Aggressive</th>
<th>Testing</th>
<th>Assertive</th>
<th>Benign</th>
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<tr>
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<td>Iran</td>
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<td>Middle East Terrorism</td>
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<td>Af-Pak Terrorism</td>
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<td>China</td>
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<td>North Korea</td>
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<td><strong>OVERALL</strong></td>
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**Capability of Threats**

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<th>Capable</th>
<th>Aspirational</th>
<th>Marginal</th>
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<td>North Korea</td>
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<td><strong>OVERALL</strong></td>
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**Threats to U.S. Vital Interests**

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<thead>
<tr>
<th>Threat</th>
<th>Severe</th>
<th>High</th>
<th>Elevated</th>
<th>Guarded</th>
<th>Low</th>
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<td><strong>OVERALL</strong></td>
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</tbody>
</table>

Our combined score for threats to U.S. vital interests can be summarized thus:
Endnotes:
3. Aleksey Arbatov, “Ugrozy realnye i mnimyye: Voennaya sila v mirovoy politike nachala XXI veka” [Real and imaginary challenges: Military power in the world politics of the beginning of the 21st century], Carnegie Moscow Center, March 3, 2013, http://carnegie.ru/2013/03/03/%D1%83%D0%B3%D1%80%D0%BE%D0%B7%D1%8B-%D1%80%D0%B5%D0%B3-%D0%BD%D0%B8-%D0%BC%D0%BD%D0%B3-%D1%8B-%D0%B2-%D0%BE%D0%B2-%D0%BD%D0%B8-%D1%8F-%D1%81%D0%B8%D0%B2-%D0%BD%D0%B0-%D0%B2-%D0%BC%D0%BB%D1%80%D0%BE%D0%B2-%D0%BE%D0%BF%D0%BD%D0%BA%D0%B5-%D0%BD%D0%B0%D1%87%D0%B0%00%BE%D0%B9-%D0%BF%D0%BD%D0%84%D1%82%D0%B8%D0%BA%D0%B5-%D0%BD%D0%B0%20-xi-%D0%B2%D0%B5%D0%BA%D0%B0/fpmv# (accessed November 1, 2013).


29. Ibid.

30. Ibid.


34. Ibid.


42. In 1991, the Parliament of the Azerbaijan SSR dissolved the Nagorno–Karabakh Autonomous Oblast and divided the area among five rayons (administrative regions) in Azerbaijan.


47. In 1991, the Parliament of the Azerbaijan SSR dissolved the Nagorno–Karabakh Autonomous Oblast and divided the area among five rayons (administrative regions) in Azerbaijan.


52. In 1991, the Parliament of the Azerbaijan SSR dissolved the Nagorno–Karabakh Autonomous Oblast and divided the area among five rayons (administrative regions) in Azerbaijan.


54. Pettersen, “More Russian Military Aircraft Outside Norway.”


66. Smith and Mshvidobadze, “Russian Cyber Capabilities, Policy and Practice.”


69. Ibid., p. 180.


102. Ibid.


130. This Index scores threat capability as it relates to the vital national interests of the U.S. and the role and utility of U.S. military forces. Terrorist groups clearly have the ability to conduct attacks using improvised explosives, firearms, and even hijacked airplanes. The bombing of the Boston Marathon in April 2013, an attempted car bomb attack in New York City’s Times Square in May 2010, and al-Qaeda’s attacks on September 11, 2001, are stark examples. In general, terrorism is handled as a law enforcement and intelligence collection matter, especially within the United States and when it presents a threat to U.S. interests in other countries. In comparison to the types of threats posed by states such as China or Russia, terrorism is a lesser sort of threat to the security and viability of the U.S. as a global power. This Index does not dismiss the deaths, injuries, and damage that terrorists can inflict upon Americans at home and abroad, but places the threat posed by terrorism in context with substantial threats to the U.S. homeland, the potential for major regional conflict, and the potential to deny U.S. access to the global commons. With this in mind, terror groups seldom have the physical ability to accomplish the extreme objectives they state nor to present a physical threat that rises to a level that threatens U.S. vital security interests.


144. Ibid.

145. North Korea has a finite amount of plutonium for nuclear weapons, and any additional tests will deplete the existing stock. However, if Pyongyang conducted a nuclear test using a uranium-based weapon, it would demonstrate that it has a second program to augment its existing nuclear weapons arsenal.


178. While it has long been a matter of U.S. policy that Philippine territorial claims in the South China Sea lie outside the scope of American treaty commitments, the treaty does apply in the event of an attack on Philippine “armed forces, public vessels or aircraft in the Pacific” (U.S.–Philippines Mutual Defense Treaty, Art. V). In any event, the Treaty (Art. IV) obligates the U.S. in case of such an attack to “meet the common dangers in accordance with its constitutional processes.” Regardless of formal treaty obligations, however, enduring U.S. interests in the region and perceptions of U.S. effectiveness and reliability as a check on growing Chinese ambitions would likely spur the U.S. to become involved.


202. Ibid.
203. Ibid., p. 254.
An Assessment of U.S. Military Power

Dakota L. Wood

It is a self-evident truth that America must first and foremost have the military capability to defend America from attack. Beyond that defense of the homeland, America has interests around the globe, such as protecting Americans abroad, allies, and the freedom to use international sea, air, and space. If America had the military capability to fight one and only one contingency at a time, then any time America became involved in such a contingency, the world situation would be ripe for attacks on American interests elsewhere, because an America tied down on one contingency would lack the capability to deter or defeat the attacks. America needs armed forces sufficient to protect the homeland and have the capacity to fight and win two major regional contingencies.

The U.S. does not have the right force to meet a two-major regional contingency (MRC) requirement, and is not ready to carry out its duties effectively.

How to Think About Sizing Military Power

There are countless ways to assess the condition of America’s “hard power”—its physical military might—and there will be advocates for, and certainly critics of, any conceivable approach. This is understandable given the multitude of factors that bear upon the matter. Military power begins with the people and equipment used to conduct war: the weapons, tanks, ships, airplanes, and supporting tools such as communications systems that make it possible for one group to impose its will on another or to prevent such an outcome from happening.

However, simply counting the number of people, tanks, or combat aircraft that the U.S. possesses would be irrelevant because it would lack context. For example, the U.S. Army might have 100 tanks, but to accomplish a specific military task relative to a given enemy in a specific place could require 1,000 tanks or none at all. It might be that the terrain on which a battle is fought is especially ill-suited to tanks or that the tanks one has are inferior to the enemy’s. The enemy could be quite adept at using tanks, with his tank crews skilled in their craft and his tanks well-maintained, or his tank operations perhaps integrated into a larger employment concept that leverages the supporting fires of infantry and airpower, whereas one’s own tanks are poorly maintained, the crews are ill-prepared to operate them in an anti-armor environment, or one’s doctrine is irrelevant.

Success in war is partly a function of matching the tools of warfare to a specific task and employing those tools effectively in the conditions of the battle. Get these wrong—tools, objective, competency, or context—and you lose.

Another key element is the military’s capacity for conducting operations: how many of the right tools it has: people, tanks, planes, or ships. One might have the right tools and know how to use them effectively but not have enough to win. Given that one cannot know with certainty beforehand just when, where, against whom, and for what reason a battle might be fought, determining how much capability is needed is an exercise of informed, but not certain, judgment.
Further, two different combatants can use the same set of tools in radically different ways to quite different effects. The concept of employment matters. Concepts are developed to account for numbers, capabilities, material readiness, and all sorts of other factors that enable or constrain one’s actions, such as whether one fights alone or alongside allies, on familiar or strange terrain, or with a large, well-equipped force or with a small, poorly equipped force.

The answers to all of these questions and the nature of the materials, the skills, and the enemy against which one is operating, as well as a multitude of other contributing factors, all bear upon the outcome.

Measuring hard combat power in terms of its adequacy in capability, capacity, and readiness to defend U.S. vital interests is hard, but not impossible. Indeed, regardless of the difficulty of determining the adequacy of one’s military forces, the Secretary of Defense and the military services have to make decisions every year when the annual defense budget request is submitted to Congress.

The budget request begins with the requirements registered by the military services, derived from their assessment of what they need, both singly and in combination with each other, to accomplish assigned missions; but that is just a starting point. Defense budget requests are not fiscally unconstrained documents. Nor do they develop in a vacuum free of competing policy priorities; changing philosophies of governance; a given Administration’s worldview (how it views U.S. interests, threats to those interests, and major actors in regional and global affairs); or the tangle of interests that drive budget decisions within the U.S. Congress.

The adequacy of hard power is affected most directly by the resources the nation is willing to invest. While that investment decision is informed to a significant degree by an appreciation of threats to U.S. interests and the ability of a given defense portfolio to protect U.S. interests against such threats, it is not informed solely by such considerations; thus the importance of clarity and honesty in determining just what is needed in hard power and the status of such hard power from year to year.

The amount of money that each U.S. Administration is willing to request for defense is a reflection of that Administration’s priorities, but since these priorities change from Administration to Administration, it is not unusual to see meaningful variance from year to year.

Administrations take various approaches to determine the type and amount of military power needed. After defining the national interests to be protected, the Department of Defense can use worst-case scenarios to determine the maximum challenges the U.S. military might have to overcome. Another way is to redefine what constitutes a threat. By taking a different view of major actors as to whether they pose a meaningful threat, and the extent to which friends and allies have an ability to assist the U.S. in meeting security objectives, one can arrive at different conclusions about necessary military strength. For example, one Administration might view China as a rising, belligerent power bent on dominating the Asia-Pacific. Another Administration may view China as an inherently peaceful rising economic power, with the expansion of its military capabilities a natural occurrence commensurate with its strengthening status. The difference between these views can have a dramatic impact on how one thinks about U.S. defense requirements. So, too, can policymakers amplify or downplay risk to justify defense budget decisions.

There can also be strongly differing views on requirements for operational capacity. Does the country need enough for two major combat operations (MCOs) at roughly the same time or just enough for a single major operation plus some number of lesser cases? To what extent should “presence” tasks—the use of forces for routine engagement with partner countries or simply to be on hand in a region for crisis response—be additive to or a subset of a military force sized to handle two major regional conflicts?

Where to Start

There are references that one can use to help sort through the variables to arrive at a starting point for assessing the adequacy of today’s military posture: government studies and historical experience. The government occasionally conducts formal reviews meant to inform decisions on capabilities and capacities across the Joint Force relative to the threat environment (current and projected) and evolutions in operating conditions, the advancement of technologies, and aspects of U.S. interests that may call for one type of military response over another.
The 1993 Bottom-Up Review (BUR), conducted by then-Secretary of Defense Les Aspin, is one such often-cited example. As stated by Secretary Aspin:

I felt that a department-wide review needed to be conducted “from the bottom up” because of the dramatic changes that have occurred in the world as a result of the end of the Cold War and the dissolution of the Soviet Union. These changes in the international security environment have fundamentally altered America’s security needs. Thus, the underlying premise of the Bottom-Up Review was that we needed to reassess all of our defense concepts, plans, and programs from the ground up.¹

The BUR formally established the requirement for U.S. forces to be able “to achieve decisive victory in two nearly simultaneous major regional conflicts [MRCs] and to conduct combat operations characterized by rapid response and a high probability of success...”² Thus was formalized the two-MRC standard.

As pointed out by Dr. Daniel Gouré in his essay, various Administrations have redefined force requirements based on their perceptions of what was necessary to protect U.S. interests, but the supporting rationale and how it was conveyed to Congress were functions of an Administration’s approach to working with Congress. In an attempt to formalize the process, and perhaps to have a mechanism by which to exert influence over the executive branch in such matters,³ Congress mandated that each incoming Administration must conduct a comprehensive strategic review of the global security environment, articulate a relevant strategy suited to protecting and promoting U.S. security interests, and recommend an associated military force posture.

The first Quadrennial Defense Review (QDR) was conducted in 1997. An independent National Defense Panel (NDP) has also been convened to review and comment on three of the five QDR reports (1997, 2010, and 2014). Both sets of documents purport to serve as key assessments, but analysts have come to regard them as justifications for executive branch policy preferences (QDR report) or overly broad, generalized commentaries (NDP reports) that lack substantive discussion about threats to U.S. interests, a credible strategy for dealing with them, and the actual ability of the U.S. military to meet national security requirements.

**Correlation of Forces as a Factor in Force Sizing**

During the Cold War, the U.S. assessed its need for hard power against what the Soviets fielded, accounting for Soviet numbers, platform capabilities, employment doctrine, and force disposition on land, at sea, and in the air in multiple theaters. At that time, the correlation of forces—a comparison of one force against another to determine strengths and weaknesses—was highly symmetrical. U.S. planners compared tanks, aircraft, and ships against their direct counterparts in the opposing force. These comparison assessments drove the sizing, characteristics, and capabilities of fleets, armies, and air forces.

With the evolution of guided, precision munitions and the rapid technological advancements in surveillance and targeting systems, however, comparing combat power grew more difficult. What was largely a platform v. platform model has shifted somewhat to a munitions v. target model.

The proliferation of precise weaponry increasingly means that each round, bomb, rocket, missile, and even individual bullet (in some instances) can hit its intended target, thus decreasing the number of munitions needed to prosecute an operation. It also means that the lethality of an operating environment increases significantly for the people and platforms involved. We are now at the point where one must consider how many “smart munitions” the enemy has when thinking about how many platforms and people are needed to win a combat engagement instead of focusing primarily on how many ships or airplanes the enemy can bring to bear against one’s own force.⁴

In one sense, increased precision and the technological advances now being incorporated into U.S. weapons, platforms, and operating concepts make it possible to do far more with fewer assets than ever before. Platform signature reduction (stealth) makes it harder for the enemy to find and target them, while the increased precision of weapons makes it possible for fewer platforms to hit many more targets. Additionally, the U.S. Joint Force’s ability to harness computers, modern telecommunications, space-based platforms—such as for surveillance, communications, positioning-navigation-timing (PNT) support from GPS satellites—and networked operations potentially means that smaller forces can have far greater effect in battle than at any other time in history. But these same advances also enable enemy forces. And certain military functions—such as seiz-
ing, holding, and occupying territory—may require a certain number of soldiers no matter how state-of-the-art their equipment may be.

With smaller forces, each individual element of the force represents a greater percentage of its combat power. Each casualty or equipment loss takes a larger toll on the ability of the force to sustain high-tempo, high-intensity combat operations over time—especially if the force is dispersed across a wide theater or across multiple theaters of operation.

As advanced technology has become more affordable, it has become more accessible for nearly any actor, state or non-state. Consequently, it may be that the outcomes of future wars will pivot to a much greater degree on the skill of the forces and their capacity to sustain operations over time than they will on some great disparity in technology. If so, readiness and capacity will take on greater importance than absolute advances in capability.

All of this illustrates the difficulties and need for exercise of judgment in assessing the adequacy of America's military power. Yet without such an assessment, all that we are left with are the quadrennial strategic reviews (which are subject to filtering and manipulation to suit policy interests); annual budget submissions (which typically favor desired military programs at presumed levels of affordability and are therefore necessarily budget-constrained); and leadership posture statements that often simply align with executive branch policy priorities.

The U.S. Joint Force and the Art of War

This section of the Index on military capabilities assessed the adequacy of the United States’ defense posture as it pertains to a conventional understanding of “hard power”—defined as the ability of American military forces to engage and defeat an enemy’s forces in battle at a scale commensurate with the vital national interests of the U.S. While some hard truths in military affairs are appropriately addressed by math and science, others are not. Speed, range, probability of detection, radar cross-section are examples of quantifiable characteristics that can be measured. Specific future instances where U.S. military power will be needed, the competency of the enemy, the political will to sustain operations in the face of mounting deaths and destruction, and the absolute amount of strength needed to win are matters of judgment and experience, but they nevertheless affect how large and capable a force one might need.

In conducting the assessment, we accounted for both quantitative and qualitative aspects of military forces, informed by an experience-based understanding of military operations and the expertise of external reviewers.

As noted earlier, military effectiveness is as much an art as it is a science. Specific military capabilities represented in weapons, platforms, and military units can be used individually to some effect. Practitioners of war, however, have learned that combining the tools of war in various ways and orchestrating their tactical employment in series or simultaneously can dramatically amplify the effectiveness of the force committed to battle. For example:

- Advanced operations by special operations forces can sabotage enemy resources or locate, identify, and mark key targets for precision strike, thereby compromising an enemy’s ability to defend and creating exploitable vulnerabilities.

- Cyber-weapons used before or in conjunction with conventional actions can degrade enemy sensors and communications or introduce false information into an enemy’s analytic and decision-making processes.

- Staging resources close to anticipated theaters of action helps to develop situational awareness and familiarity with the battlespace and reduces response time.

- Establishing and maintaining secure lines of communication enables the sustainment of operations from secure locations beyond the enemy’s reach in the face of high-resource consumption associated with combat.

- Control of the sea, air, and land spaces enables the shifting of forces to gain positional advantage, denies the enemy such an advantage, and complicates the enemy’s calculations.

- Electronic attack-capable aircraft suppress the enemy’s surveillance and anti-air defense systems, thus enabling attack aircraft to strike critical targets that further degrade the enemy’s capabilities.
Space-based and unmanned aerial systems provide surveillance and precise targeting, dissemination of intelligence, and coordination of widely dispersed tactical actions.

All of these things, among many others, contribute to—even make possible—the success of U.S. forces in modern warfare. They are exceedingly hard to measure in any quantitative way, but their value as critical contributors in the conduct of war is undeniable. How they are utilized is very much an art-of-war matter, learned through experience over time.

What Is Not Being Assessed

In assessing the current status of the military forces, this Index uses the primary references used by the military services themselves when they discuss their ability to employ hard combat power. The Army’s unit of measure is the brigade combat team (BCT), while the Marine Corps structures itself by battalions. For the Navy, it is the number of ships in its combat fleet, and the Air Force’s most consistent reference is total number of aircraft, sometimes broken down into the two primary sub-types of fighters and bombers.

Obviously, this is not the totality of service capabilities and certainly is not everything needed for war, but these measures can be viewed as surrogate measures that subsume or represent the vast number of other things that make these “units of measure” possible and effective in battle. There is an element of proportionality or ratio related to these measures that drives other aspects of force sizing. For example:

- When planning air operations, the Air Force looks at the targets to be serviced and the nature of the general operation to be supported and then accounts for aircraft and munitions needed (type and quantity) and the availability and characteristics of airfields relevant to the operation. From this they calculate sorties, distances, flight hours, fuel consumption, number of aircraft in a given piece of airspace, and a host of other pieces of information to determine how many aerial refueling tankers will be needed (as but one example).

- Joint Force detailed planning for operations determines how much equipment, manpower, and supplies need to be moved from one point to another and how much more will be needed to sustain operations—logistics is a very quantitative business.

- U.S. Transportation Command (TRANSCOM) calculates the amount of lift required in cargo planes, sealift shipping, long-haul road movements, and trains.

- The Marine Corps operationally thinks in terms of Marine Air-Ground Task Forces (MAGTFs) that are composed of command, ground, air, and logistics elements. The size of a MAGTF varies depending on the mission to be accomplished, but the nucleus is normally (though not always) the ground combat element that typically ranges from a battalion to a division. The amount of airpower, logistics support, and transportation (amphibious, sealift, and airlift) required to execute the operation extends from there.

- The Navy thinks in terms of the number of surface combatants, the nature of operations, and proximity to ports to drive planning for all of the combat logistics force vessels that are needed to make it happen.

- There are the institutional elements like the recruiting that is necessary to generate the force in the first place, the multitude of installations at which units are based, training facilities, acquisition workforce, and the military’s medical infrastructure.

The point here is that the military spear has a great deal of shaft that makes it possible for the tip to locate, close with, and destroy its target, and there is a rough proportionality between shaft and spear tip. Thus, in assessing the basic units of measure for combat power, one can get a sense of what is likely needed in the combat support, combat service support, and supporting establishment echelons. The scope of this Index does not extend to analysis of everything that makes hard power possible; it focuses on the status of the hard power itself.

This assessment also does not account for the Reserve and Guard components of the services; it focuses only on the Active component. Again, the element of proportion or ratio figures prominently. Each service determines the balance among its
Active, Reserve, and National Guard elements (only the Army and Air Force have Guard elements; the Navy and Marine Corps do not) based on factors that include cost of the respective elements, availability for operational employment, time needed to respond to an emergent crisis, the allocation of roles between the elements, and political considerations. This assessment looks at the baseline requirement for a given amount of combat power that is readily available for use in a major combat operation—something usually associated with the Active components of each service.

**The Defense Budget and Strategic Guidance**

As for the defense budget, ample discussion of budget issues is scattered throughout (mainly as they pertain to acquisition programs), but the budget itself—whether for the military services individually, the Joint Force as a whole, or the totality of the defense establishment—is actually a reflection of the importance the U.S. places on the modernity, capacity, and readiness of the force rather than a measure of the capability of the force itself. In other words, the budget itself does not tell us much about the posture of the U.S. military.

The baseline budget for defense in FY 2014 was $496 billion, which paid for the forces (manpower, equipment, training); enabling capabilities (things like transportation, satellites, defense intelligence, and research and development); and institutional support (bases and stations, facilities, recruiting, and the like). The baseline budget does not pay for the cost of ongoing operations, which is captured in supplemental funding known as OCO (overseas contingency operations).

It is true that absent a significant threat to the survival of the country, the U.S. will always balance expenditures on defense with spending in all the other areas of government activity that it thinks are necessary or desirable. Some have argued that a defense budget indexed to a percent of gross domestic product (GDP) is a reasonable reference, but a fixed percentage of GDP does not accurately reflect national security requirements per se any more than the size of the budget alone correlates to levels of capability. It is possible that a larger defense budget could be associated with less military capability if the money were allocated inappropriately or spent wastefully, and just because the economy changes over time does not mean that defense spending should increase or decrease in lock-step by default.

Ideally, defense requirements are determined by identifying national interests that might need to be protected with military power; assessing the nature of threats to those interests and what would be needed to defeat those threats (and how much that would cost); and then determining what the country can afford (or is willing) to spend. Any difference between assessed requirement and affordable levels of spending on defense would constitute risk to U.S. security interests.

This Index enthusiastically adopts this latter approach: interests, threats, requirements, resulting force, and associated budget. Spending less than the amount needed to maintain a two-MRC force results in policy debates over where to accept risk: force modernization, the capacity to conduct large-scale or multiple simultaneous operations, or force readiness.

The decision to fund national defense commensurate with interests and prevailing threats is a policy decision reflecting national priorities and acceptance of risk. This Index assesses the ability of the nation’s military forces to protect vital national security interests within the world as it is so that the debate over funding hard power is better informed.

Relevant to this first assessment, in fiscal year (FY) 2014, the state of the federal budget was the most dominant consideration for DOD and the White House when it came to structuring the defense budget that makes possible the military’s operational posture. This situation, which began in 2011, has affected not only the crafting of defense strategy, but also the capability of the U.S. military and its planning for the future. Practically every single DOD document refers to budget issues in some way. Thus, a brief summary of the budget environment is necessary to understand why the Department of Defense and the military services are making the decisions they are making with respect to capability, capacity, and readiness.

Congress passed the Budget Control Act (BCA) in the summer of 2011. At the simplest level, the bill was intended to reduce the federal deficit by limiting government spending for 10 years. It does so through “sequestration,” which is an automatic budget cut across the whole of federal discretionary spending. Though the budget cuts are applied to all federal departments and agencies, the manner
in which they are divided disproportionally affects DOD, with Defense absorbing half the cuts: $500 billion over the 10-year period.

FY 2013 was the first time sequester was implemented on the defense budget. Due to the nature of the cuts, all programs in DOD, with the exception of military personnel costs, were cut proportionally. As will be evident in the service assessments, military readiness took a significant hit due to the systematic nature of the cuts.

In 2013, Congress then passed the Bipartisan Budget Act, which provided DOD partial relief from sequestration for FY 2014 and FY 2015. Starting in FY 2016, however, barring another congressional bill, full sequestration will once again return. Though sequestration is the current law, DOD has developed two budget plans, one under a sequestration scenario and one under a higher defense budget.

The budget situation has also affected the defense strategy that guides planning for the military branches. The White House released a new strategic framework, the 2012 Defense Strategic Guidance (DSG), following passage of the BCA. The 2012 DSG is the document that all four of the services use to set requirements and objectives and against which they assess themselves.

The DSG lays out a strategic framework, identifying the strategic interests of the country and establishing related defense priorities, with the current budget environment in mind. The document specifies 10 missions for which the military must prepare: 5

- Counter Terrorism and Irregular Warfare,
- Deter and Defeat Aggression,
- Project Power Despite Anti-Access/Area Denial Challenges,
- Counter Weapons of Mass Destruction,
- Operate Effectively in Cyberspace and Space,
- Maintain a Safe, Secure, and Effective Nuclear Deterrent,
- Defend the Homeland and Provide Support to Civil Authorities,
- Provide a Stabilizing Presence,
- Conduct Stability and Counterinsurgency Operations, and
- Conduct Humanitarian, Disaster Relief, and Other Operations.

The DSG does address an operationally based force-sizing framework similar to the two-MRC concept. It requires that “[e]ven when the U.S. forces are committed to a large-scale operation in one region, they will be capable of denying the objectives of—or imposing unacceptable costs on—an opportunistic aggressor in a second region.” 6 This can be thought of as a “one-plus” MRC requirement because the requirement in the second regional conflict is to “deny” rather than defeat the aggressor.

The 2012 DSG and current budget situation are the main shaping factors for the U.S. military, both in setting their own requirements and in their ability to meet those requirements. The implications for each of the four services will be enumerated in their individual assessments.

“Purpose” as a Driver in Force Sizing

The Joint Force is used for a wide range of purposes, only one of which is major combat operations. Fortunately, such events are rare, averaging roughly 15–20 years between occurrences. 7 In between (and even during) such occurrences, the military is used in support of regional engagement, crisis response, strategic deterrence, humanitarian assistance, support to civil authorities, and supporting U.S. diplomacy.

The U.S. Unified Combatant Commands (EUCOM, CENTCOM, PACOM, SOUTHCOM, AFRICOM) each have annual and long-term plans through which they engage with countries in their assigned regions. These engagements range from very small unit training events with the forces of a single partner country to larger bilateral and sometimes multilateral military exercises. The smaller events constitute the majority of regional interactions and help to establish not only working relationships with other countries, but more detailed understanding of regional political–military dynamics and on-the-ground conditions in areas of interest. This facilitates earlier awareness of emerging problems, ideally precluding their eruption into full-blown crises, but also establishing conditions favorable to responding more quickly and effectively than would otherwise be possible.
To support such COCOM efforts, the services provide forces that are permanently based in respective regions or operate in them temporarily on a rotational basis. To make these regional rotations possible, the services must maintain a base force sufficiently large to train-up, deploy, support, receive back, and make ready again a stream of units ideally numerous enough to meet validated COCOM demand.

The ratio between time spent at home and time spent away on deployment for any given unit is known as OPTEMPO (operational tempo), and each service attempts to maintain a ratio that both gives units enough time to educate, train, and prepare their forces and allows the individuals in a unit to maintain some semblance of a healthy home and family life. This ensures that units are fully prepared for the next deployment cycle and that servicemembers do not become “burned out” or suffer adverse consequences in their personal lives because of excessive deployment time.

Experience has shown that a ratio of at least 3:1 is sustainable, meaning three periods of time at home for every period deployed. (If a unit is to be out for six months, it would be home for 18 months before deploying again.) Obviously, a service needs a sufficient number of people, units, ships, and planes to support such a ratio. If peacetime engagement were the primary focus for the Joint Force, the services could size their forces to support these forward-based and forward-deployed demands.

In contrast, sizing a force for major combat operations is an exercise informed by history—how much force was needed in previous wars—and then shaped and refined by analysis of current threats, a range of plausible scenarios, and expectations about what the U.S. can do given training, equipment, employment concept, and other factors. The defense establishment must then balance “force sizing” between COCOM requirements for presence and engagement with the amount thought necessary to win in likely war scenarios. Inevitably, compromises are made that account for how much military the country is willing to buy. Generally speaking:

- The Army sizes to major warfighting requirements.
- The Marine Corps focuses on crisis response demands and the ability to contribute to one major operation.
- The Air Force attempts to strike a balance that accounts for historically based demand across the spectrum since air assets are shifted fairly easily from one theater of operations to another (“easily” being a relative term when compared to the challenge of shifting large land forces).
- The Navy is driven by global presence requirements. To meet COCOM requirements for a continuous fleet presence at sea, the Navy must have three to four ships in order to have one on station. As a simplistic example, a commander who wants one U.S. warship stationed off the coast of a hostile country needs use of four ships from the fleet—one on station, one that left station and is traveling home, one that just left home and is traveling to station, and one that fills in for one of the other ships when it needs maintenance or training time.

This report focuses on the forces required to win two major wars as the baseline force-sizing metric. The military’s effectiveness as a deterrent against opportunistic competitor states and a valued training partner in the eyes of other countries derives from its effectiveness (proven or presumed) in winning wars.

Our Approach

With this in mind, we assessed the state of military affairs for U.S. forces as it pertains to their ability to deliver hard power against an enemy in three areas:

- Capability,
- Capacity, and
- Readiness.

**Capability.** Examining the capability of a military force requires consideration of:

- The proper tools (material and conceptual) of sufficient design, performance characteristics, technological advancement, and suitability for it to perform its function against an enemy force successfully.
The appropriate variety of options to preclude strategic vulnerabilities in the force and give flexibilities to battlefield commanders.

The degree to which elements of the force reinforce each other in covering potential vulnerabilities, maximizing strengths, and gaining greater effectiveness through synergies that are not possible in narrowly stovepiped, linear approaches to war.

The capability of the U.S. Joint Force was on ample display in its decisive conventional war victory over Iraq in liberating Kuwait in 1991. Aspects of its capability have also been seen in numerous other operations undertaken since the end of the Cold War. While the conventional combat aspect at the “pointy end of the spear” of power projection has been more moderate in places like Yugoslavia, Somalia, Bosnia and Serbia, and Kosovo, and even against the Taliban in Afghanistan in 2001, the fact that the U.S. military was able to conduct highly complex operations thousands of miles away in austere, hostile environments and sustain those operations as long as required is testament to the ability of U.S. forces to do things that few, if any, other countries can do.

A modern-day “major combat operation”s along the lines of those upon which Pentagon planners base their requirements would feature a major opponent possessing modern integrated air defenses; naval power (surface and subsurface); advanced combat aircraft (to include bombers); a substantial inventory of short-range, medium-range, and long-range missiles; current-generation ground forces (tanks, armored vehicles, artillery, rockets, and anti-armor weaponry); cruise missiles; and (in some cases) nuclear weapons. Such a challenge involving an actor capable of threatening vital national interests would present a challenge that is comprehensively different from the challenges that the U.S. Joint Force has faced in past decades.

This Index ascertains the relevance and health of military service capabilities by looking at factors such as average age of equipment, generation of equipment relative to the current state of competitor efforts as reported by the services, and the status of replacement programs meant to introduce more updated systems as older equipment reached the end of its programmed service life. While some of the information is quite quantitative, other factors could be considered judgment calls made by acknowledged experts in the relevant area of interest or as addressed by senior service officials when providing testimony to Congress or addressing specific areas in other official statements.

It must be determined if the services possess capabilities that are relevant to the modern combat environment.

**Capacity.** The U.S. military must have a sufficient quantity of the right capability or capabilities. There is a troubling but fairly consistent trend that characterizes the path from requirement to fielded capability within U.S. military acquisition. After an extraordinary amount of detailed analysis, the military settles on a specific quantity of a certain capability, presumably based on what it believes it will need to defeat likely enemy forces and complete assigned objectives. Along the way to acquiring this capability, however, several linked things happen that result in far less of a presumed “critical capability” than supposedly was required.

- The manufacturing sector attempts to satisfy the requirements articulated by the military.
- “Unexpected” technological hurdles arise that take longer and much more money to solve than anyone envisioned.
- Programs are lengthened, and cost overruns are addressed (usually with more money).
- Then realization sets in that the country either cannot afford or is unwilling to pay the cost of acquiring the total number of platforms originally called for. The acquisition goal is adjusted downward (if not canceled), and the military finally fields fewer platforms than it originally said it needed to be successful in combat.

This does not mean that the full amount of the more modern capability had no validity in the first place or that it would not actually be needed to win a war against a major competitor, but the level of risk presumably accepted to win wars without the full amount of the capability is never quantified either during the deliberation process or after the fact. For example:
## Historical U.S. Force Allocation

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* Figures for engagements are numbers deployed; figures for documents are totals.
** Figures for Air Force bombers for Korean War, Vietnam War, Persian Gulf War, and Iraq are bomber squadrons. All other figures are bombers.
*** 2014 QDR prescribed nine heavy bomber squadrons, equaling 96 aircraft.

[heritage.org](http://heritage.org)
• B-2 Spirit nuclear-capable stealth bomber—Objective: 132; Fielded: 21.

• F-22 Raptor air superiority fighter—Objective: 650; Fielded: 183.

• DDG-1000 class destroyer—Objective: 32; Fielded: 3.

• Littoral Combat Ship (LCS)—Objective: 55; Fielded: 32 (as currently planned).

• Expeditionary Fighting Vehicle (EFV)—Objective: 1,013; Fielded: 0 (requirement was initially dropped to 573 before the program was canceled).

Similar examples can be cited regarding force structure size: the number of units and total number of personnel the services say they need to meet the objectives established by the Commander in Chief and his Secretary of Defense in their strategic guidance. The Marine Corps has stated that it needs 27 infantry battalions to fully satisfy the validated requirements of the regional combatant commanders, yet current funding for defense has the Corps on a path to 21. The Army was on a build toward 48 brigade combat teams, but funding reductions have it currently at 42, with an intermediate stop at 35 (assuming that Congress provides additional funding at sequestration levels mandated by the Budget Control Act of 2011) on its way to 24 BCTs by 2019—half the number that the Army originally thought necessary—if sequestration remains law.

It is therefore entirely possible to update older equipment with new avionics, sensors, weapons, armor, communications suites, or engines as appropriate to maintain some level of combat relevance. Commanders can also employ fewer units more expertly for longer periods of time in an operational theater. At some point, however, sheer numbers of updated, modern equipment are likely necessary to win in battle against a credible opponent when the crisis is profound enough to threaten a vital interest.

Capacity (numbers) can be viewed a few ways: compared to a stated objective for each category by each service, compared to amounts required to complete various types of operations across a wide range of potential missions as measured against a potential adversary, and as measured against a set benchmark for total national capability. This Index employs as a benchmark the two-MRC metric.

The two-MRC benchmark for force sizing is the minimum standard for U.S. hard-power capacity, because one will never be able to employ 100 percent of the force at the same time. There will always be some percentage of the force unavailable due to long-term maintenance overhaul (for Navy ships in particular), unit training cycles, employment in myriad engagement and small-crisis response tasks that continue even during major conflicts, and the need to keep some portion of the force uncommitted to serve as a strategic reserve.

If, for example, the historical record shows that the U.S. Army commits 21 BCTs on average to a major conflict, then a two-MRC standard would require 42 BCTs available for actual use; but an Army built to field only 42 BCTs would also be an Army that could find itself entirely committed to war, leaving nothing back as a strategic reserve, to replace combat losses, or to handle other U.S. security interests. Moreover, this Index assesses only the Active component of the services. The Army also has Reserve and National Guard components that together account for half of the total Army. The additional capacity needed to meet these “above two-MRC requirements” could be handled by these other components or mobilized to supplement Active-component commitments. In fact, this is how the Army thinks about meeting operational demands and is at the heart of the current debate within the total Army about the roles and contributions of the various Army components. A similar situation exists with the Air Force and Marine Corps.

The balance among Active, Reserve, and Guard elements is beyond the scope of this study. Our focus here is on establishing a minimum benchmark for the capacity needed to handle a two-MRC requirement.

A review was conducted of the major defense studies (1993 BUR, QDR reports, and independent panel critiques) that are publicly available and modern historical instances of major wars (Korea, Vietnam, Gulf War, Operation Iraqi Freedom) to see whether there was any consistent trend in U.S. force allocation. The results of our review are presented in Table 2. To this was added 20 percent to account for forces and platforms likely to be unavailable and to provide a strategic reserve to guard against unforeseen demands. Summarizing the totals, this Index concluded that a two-MRC capable Joint Force would consist of:
• Army: 50 BCTs.

• Navy: 346 ships, 624 strike aircraft.

• Air Force: 1,200 fighter/attack aircraft.

• Marine Corps: 36 battalions.

To conclude, the services establish their acquisition objectives derived from a number of factors, but the ultimate test is whether the force at a given size can handle the strategic demands as described herein.

The services must have the capacity to handle two major regional conflicts successfully.

Readiness. Faced with the current sharp reductions in funding mandated by sequestration, military service officials, senior DOD officials, and even Members of Congress have warned of the dangers of recreating the “hollow force” of the 1970s when units existed on paper but were staffed at reduced levels, minimally trained, and woefully equipped as a consequence of inadequate funding to conduct training, hone skills in exercises, and repair broken or replace worn-out equipment. To avoid this, the services have intentionally traded quantity/capacity and modernization to ensure that what they do have is “ready” for employment.

The service chiefs have stated repeatedly that current and projected levels of funding are taking a toll on the ability of units to maintain sufficient levels of readiness across the force. Some units have reduced manning. Some squadrons do not fly as many hours. Ground units have not gone to the range as often or participated in the types of combined arms and maneuver exercises they feel are necessary to develop and sustain high levels of proficiency in the complex tasks needed to succeed in battle. The Navy has regularly deferred major maintenance cycles for its ships because the ships that are available are at high demand from the COCOMs, and the Navy does not have a sufficient number both to perform scheduled maintenance and to keep enough hulls in the water for operational use.

It is one thing to have the right capabilities to defeat the enemy in battle. It is another thing to have a sufficient amount of those capabilities to sustain operations over time and many battles against an enemy, especially when attrition or dispersed operations are significant factors. But sufficient numbers of the right capabilities are rather meaningless if the force is unready to engage in the task.

Scoring. In our final assessments we tried very hard not to convey a higher level of precision than we think is achievable using unclassified, open-source, publicly available documents; not to reach conclusions that could be viewed as based solely on assertions or opinion; and not to rely solely on data and information that can be highly quantified, since simple numbers do not tell the whole story.

We believe the logic underlying our methodology is sound. This Index drew from a wealth of public testimony from senior government officials, and from recognized experts in the defense and national security analytic community and historical instances of conflict that seemed most appropriate to this project. This Index considered several questions, including:

• How does one place a value on the combat effectiveness of concepts such as Air-Sea Battle, Network-centric Operations, Global Strike, or Joint Operational Access?

• Is it entirely possible to assess accurately (1) how well a small number of newest-generation ships or aircraft will fare against a much larger number of currently modern counterparts; (2) when U.S. forces are operating thousands of miles from home; (3) orchestrated with a particular operational concept; (4) the enemy is leveraging a “home field advantage” that includes strategic depth and much shorter and perhaps better protected lines of communication; and (5) the enemy might be pursuing much dearer national objectives than the U.S. such that the political will to conduct sustained operations in the face of mounting losses might differ dramatically?

• How does one neatly quantify the element of combat experience, the health of a supporting workforce, the value of “presence and engagement operations,” and the related force structures and deployment/employment patterns that presumably deter war or mitigate its effects if it does occur?

This Index focused on the primary purpose of military power—to defeat an enemy in combat—and the historical record of major U.S. engagements for evidence of what the U.S. defense establishment has
thought was necessary to execute a major conventional war successfully. To this we added the two-MRC benchmark, on-the-record assessments of what the services themselves are saying about their status relative to validated requirements, and the analysis and opinions of various experts in and out of government who have covered these issues for many years.

Taking it all together, we rejected scales that would imply extraordinary precision and settled on one that conveys broader characterizations of status that range from very weak to very strong. Ultimately, any such assessment is a judgment call informed by quantifiable data, qualitative assessments, thoughtful deliberation, and experience. We trust that our approach makes sense, is defensible, and is repeatable.

### Overall U.S. Military Capability Score

This Index ultimately scores the U.S. military as “marginal,” a consequence of the cumulative effect of many years of simultaneous underinvestment and extensive operations.

Decades of underinvestment in modernization have resulted in aged weapons and other assets, while the current budget cuts have forced the services to shrink in size and reduce the amount of effort they put into training and material readiness. Unsurprisingly, funding is the single most important factor in fielding a military force that is modern, of sufficient size, and ready to be employed.

The final score resulted from the aggregated scores of the individual services:

- **Army as “Marginal.”** The Army was at the low end of the middle grade (marginal) in capacity and capability and scored quite low in readiness (as reported by the Army), with the three scores combining to place it in the low end of the middle category.

- **Navy as “Marginal.”** The Navy scored quite strong in readiness but at a cost to future capability. Deferred maintenance has kept ships at sea, but at some point in the near future, this will affect the ability of the Navy to deploy. Combined with a weak score in capability (due largely to old platforms and troubled modernization programs) and a marginal score in capacity, the Navy is currently just able to meet requirements.

- **Air Force as “Strong.”** The Air Force flies a lot and has significantly more aircraft than required for a two-MRC force, but it is an Air Force of aging aircraft, and its modernization programs are problematic. Still, its high scores in capacity and readiness placed it in the best position of all of the services.

- **Marine Corps as “Marginal.”** The Corps’ strongest suit was in readiness, but even here there are problems as stated by the Corps itself. While the fighting competency of the service is superb, it is hampered by old equipment, troubled replacement programs for its key ground vehicles, and a shrinking force. The progress it has made in replacing its rotary-wing aircraft is a notable bright spot in its modernization portfolio.

- **Nuclear Capabilities as “Marginal.”** Modernization, testing, and investment in the intellectual/talent underpinnings of this sector are the chief elements plaguing the U.S. nuclear enterprise. Delivery platforms are good, but the force depends on a very limited set of weapons (in number of designs) and models that are quite old in stark contrast to the aggressive programs of competitor states.

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Overall, the current U.S. military force is adequate to meeting the demands of a single major regional conflict while attending to the various presence and engagement activities that keep it so busy, but it does not meet the standard of two MRC. This certainly does not come as a surprise, since this is what the military is doing now and has done for the past two decades, but the decline in funding and shrinking of the force are serious problems. Essential maintenance is being deferred; fewer units (mostly the Navy’s platforms and the Special Operations Forces community) are being cycled through operational deployments more often and for longer periods; and old equipment is being extended while programmed replacements are problematic. The cumulative effect of such factors has resulted in a U.S. military that is marginally able to meet the demands of defending America’s vital national interests.

In the sections that follow, we discuss each service, describing how it is organized, its primary contributions to the nation’s warfighting abilities, and the drivers affecting its current and planned status. We then score each service across three categories—Capacity, Capability, and Readiness—as described in detail below. The nuclear component was measured in areas unique to that capability.

Scoring. The U.S. Capability section is scored by analyzing all four branches of the U.S. military across three separate categories: capacity, capability, and readiness.

- **Capacity** is a measurement of the size of the service and the amount of various capabilities that it provides.

- **Capability** is an overall assessment not just of the things a service can do, but also of the relevance and effectiveness of those abilities, specifically for combat roles. Capability is determined by the quality of weapon systems, such as the age of a system or how technically advanced it is. It is also affected by the health of current modernization programs that not only shore up current capability, but also ensure that future capabilities stay top of the line and utilize the most advanced technologies available to create the most effective weapon systems.

- **Readiness** is the ability of troops to deploy, fight effectively, and win. Each service has its own standards and requirements for an appropriate “ready” force.

The scoring uses a five-grade scale. Each category—capacity, capability, and readiness—has a different definition for each grade that reflects metrics appropriate to the category.

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**U.S. Military Power: Five-Grade Scale**

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| VERY WEAK | WEAK   | MARGINAL | STRONG  | VERY STRONG |
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**Capacity.** To score capacity, the service’s size (end strength or number of platforms) is compared to the force size required to meet a simultaneous or near-simultaneous two-MRC benchmark. This benchmark consists of the force needed to fight and win two MRCs and a 20 percent margin that serves as a strategic reserve. A strategic reserve is necessary because deploying 100 percent of the force at any one time is highly unlikely. Not only do ongoing requirements like training or sustainment and maintenance of equipment make it infeasible for the entirety of the force to be available for deployment, but committing 100 percent of the force would leave no resources available to handle unexpected situations.

Thus, a “marginal” capacity score would exactly meet a two-MRC force size, a “strong” capacity score would equate to a plus-10 percent margin for strategic reserve, and a “very strong” score would equate to a 20 percent margin.
Capacity Score Definitions:

- **Very Weak**: 0 percent–37 percent of two-MRC benchmark.
- **Weak**: 38 percent–74 percent of two-MRC benchmark.
- **Marginal**: 75 percent–82 percent of two-MRC benchmark.
- **Strong**: 83 percent–91 percent of two-MRC benchmark.
- **Very Strong**: 92 percent–100 percent of two-MRC benchmark.

Capability. Capability is scored based on the current state of combat equipment. This involves four factors:

- age of platforms relative to their expected life span,
- degree of modernity of equipment providing capability,
- degree to which program meets current and future requirements,
- existence of any technical or budgetary problems that impede incorporation of the equipment into the U.S. military.

This Index focuses on primary combat units and combat platforms (e.g., tanks, ships, and airplanes) and does not include the array of system and component upgrades that keep an older platform viable over time, such as a new radar, missile, or communications suite. New technologies grafted onto aging platforms ensure that U.S. military forces keep pace with technological innovations relevant to the modern battlefield, but at some point, the platforms themselves are no longer viable and must be replaced. Modernized sub-systems and components do not entirely substitute for aging platforms, and it is the platform itself that is usually the more challenging item to field. In this sense, primary combat platforms serve as representative measures of force modernity just as combat forces are a useful surrogate measure for the overall military that includes a range of support units, systems, and infrastructure.

In addition, we assume that modernization programs should replace current capacity at a one-to-one ratio; less than a one-to-one replacement assumes risk in that even if the newer system is presumably better than the older, until proven in actual combat, having fewer systems lessens the capacity of the force, which is an important factor if combat against a peer competitor carries with it the likelihood of attrition. For modernization programs, we scored only Major Defense Acquisition Programs (MDAPs).

The capability score uses a five-grade scale. Each service receives one capability score that is a non-weighted aggregate of scores for four categories: (1) Age of Equipment, (2) Modernity of Capability, (3) Size of Modernization Program, and (4) Health of Modernization Program. General criteria for the capability categories are explained below.

**Age of Equipment:**

- **Very Weak**: Equipment age is past 80 percent of expected life span.
- **Weak**: Equipment age is 61 percent–80 percent of expected life span.
- **Marginal**: Equipment age is 41 percent–60 percent of expected life span.
- **Strong**: Equipment age is 21 percent–40 percent of expected life span.
- **Very Strong**: Equipment age is 20 percent or less of expected life span.

**Capability of Equipment:**

- **Very Weak**: Majority (over 80 percent) of capability relies on legacy platforms.
- **Weak**: 60 percent–79 percent of capability relies on legacy platform.
- **Marginal**: 40 percent–59 percent of capability is legacy platforms.
- **Strong**: 20 percent–39 percent of capability is legacy platforms.
- **Very Strong**: Less than 20 percent of capability is legacy platforms.
Size of Modernization Program:
• **Very Weak:** Modernization program significantly too small or inappropriate to sustain current capability or program in place.
• **Weak:** Modernization programs smaller than current capability size.
• **Marginal:** Modernization programs appropriate to sustain current capability size.
• **Strong:** Modernization programs will increase current capability size.
• **Very Strong:** Modernization programs will vastly expand capability size.

Health of Modernization Program:
• **Very Weak:** Modernization programs facing significant problems; too far behind schedule (e.g., 5+ years); cannot replace current capability before retirement; lacking sufficient investment to advance; cost overruns including Nunn-McCurdy breach. (A Nunn-McCurdy cost breach, occurs when the cost of a new item exceeds 25 percent or more over the most recently approved amount or 50 percent or more over the amount originally approved. See Title 10, U.S.C. § 2433, Unit Cost Reports (UCRs).)
• **Weak:** Facing procurement problems; behind schedule (3–5 years); difficult to replace current equipment on time or insufficient funding; cost overruns enough to trigger an Acquisition Program Baseline (ABP) breach.
• **Marginal:** Facing few problems; behind schedule by 1–2 years but can replace equipment with some delay or experienced some funding cuts; some cost growth but not within objectives.
• **Strong:** Facing no procurement problems; can replace equipment with no delays; within cost estimates.
• **Very Strong:** Performing better than DOD plans, including lower actual costs.

Readiness. The readiness scores are from the military’s own assessments of readiness based on their requirements. These are not comprehensive reviews of all readiness input factors, but rather rely on the public statements of the military services regarding the state of their readiness.

It should be noted that even a “strong” or “very strong” score does not indicate that 100 percent of the force is ready; it simply indicates that the service is meeting 100 percent of its own readiness requirements. Often, these requirements assume that a percentage of the military at any one time will not be fit for deployment. Because of this, even if readiness is graded as “strong” or “marginal,” there is still a gap in readiness that will have significant implications for immediate combat effectiveness and the ability to deploy quickly. Thus, anything short of meeting 100 percent of readiness requirements assumes risk and is therefore problematic.

Readiness Score Definitions
• **Very Weak:** 0 percent–19 percent of service’s requirements.
• **Weak:** 20 percent–39 percent of service’s requirements.
• **Marginal:** 40 percent–59 percent of service’s requirements.
• **Strong:** 60 percent–79 percent of service’s requirements.
• **Very Strong:** 80 percent–100 percent of service’s requirements.
U.S. Army

The U.S. Army is the United States’ primary land warfare component. Although it addresses all types of operations across the range of ground force employment, its chief value to the nation is its ability to defeat enemy land forces in battle.

As is the case with all of the services, the U.S. Army has sought ways to absorb the budget cuts driven by the Budget Control Act in a responsible manner while still meeting the missions outlined in the 2012 Defense Strategic Guidance. In order to “maintain the proper balance between end strength, readiness and modernization,” the Army has decided to reduce its end strength and accept risk to its modernization programs to preserve readiness levels for a smaller force in the immediate term. In other words, the Army is sacrificing capacity and capability for readiness.

The Army’s reduction in force size, driven by budget cuts, was in fact accelerated by two years due to the severity of the sequester in FY 2013. From a height of 566,000 in FY 2011, the Army’s end strength in FY 2014 was on a downward slide to 490,000 Active Army soldiers by the end of the fiscal year. The ongoing debate between the White House and Congress (and within Congress) over funding levels as constrained by the Budget Control Act of 2011 will determine whether the Army is able to sustain a projected end strength of 450,000 or must reduce further to 420,000 soldiers.

Operationally, the Army has 150,090 soldiers forward stationed across 150 countries. This is a slight decline from previous-year levels of 168,520 soldiers. Of those 150,090 soldiers, the Army maintains an estimated 32,000 soldiers in Afghanistan, though with the conflict there drawing to a close, only 10,000 soldiers (a mix of Army and Marine Corps) are expected to be in theater in FY 2015.

Capacity

In FY 2014, the total Army end strength was 1,066,600 soldiers: 510,400 Active soldiers, 202,000 in the Army Reserve, and 354,200 in the Army National Guard. Within the Active Army, 20,400 soldiers (4 percent of the Active Army end strength) were paid for through Overseas Contingency Operations funding—in other words, outside of the defense base budget.

The Army also refers to its size in terms of brigade combat teams (BCTs). BCTs are the basic “building blocks” for employment of Army combat forces. They are normally employed within a larger framework of U.S. land operations but are sufficiently equipped and organized so that they can conduct independent operations as circumstances demand. A BCT averages 4,500 soldiers in strength depending on its variant: Stryker, Armored, or Infantry. A Stryker BCT is a mechanized infantry force organized around the Stryker ground combat vehicle. Armored BCTs are the Army’s principal armored unit and employ the Abrams main battle tank and the M2 Bradley fighting vehicle. An Infantry BCT is a highly maneuverable motorized unit.

The Army also has a separate air component organized into combat air brigades (CABs), which can also operate independently. CABs are made up
of Army rotorcraft, such as the AH-64 Apache, and perform various roles including attack, reconnaissance, and lift.

Stryker, Infantry, and Armored BCTs and CABs make up the Army’s main combat force, but they do not make up the entirety of the Army. About 92,000 troops that form the “institutional Army” and provide support, such as overseeing military schools, cannot be reduced at the same ratio as BCTs or CABs. In addition, a great number of functional or multi-functional support brigades provide air defense, engineering, explosive ordnance disposal (EOD), military police, military intelligence, and medical support among other types of battlefield support for BCTs.

While end strength is a valuable metric in understanding Army capacity, counting BCTs is a more telling measure of actual hard-power capacity. In FY 2014, the Active Army had 38 BCTs and 13 CABs. The reduction in end strength in the past year has had a disproportionate effect on BCTs. To illustrate, the Active Army had 45 BCTs (552,100 soldiers) in FY 2013 and is expected to have 32 BCTs (490,000 soldiers) in FY 2015. Thus, an 11 percent reduction in troop numbers resulted in a 29 percent reduction in BCTs. The Army states that it can meet the missions outlined in the 2012 DSG with this current force size.

**Capability**

The Army’s main combat platforms are ground vehicles and rotorcraft. The M1A1 Abrams and M2 Bradley vehicles are used in Armored BCTs, and as one would expect, Stryker BCTs are equipped with Stryker vehicles. Infantry BCTs rely on the inventory of M113 armored personnel carriers (APCs). CABs are made up of Army helicopters including AH-64 Apaches, UH-60 Black Hawks, and CH-47 Chinooks.

Overall, the Army’s equipment inventory is relatively healthy. While some equipment has been worn down due to usage in Afghanistan and Iraq, the Army is undertaking a “reset” initiative that is discussed below in the readiness section. The bulk of Army vehicles are young because of recent remanufacture programs for the Abrams and Bradley that have extended the service life of both vehicles. For example, the M1A1 Abrams main battle tank has recently been completely upgraded and is now only 4.5 years old. The Army also maintains an inventory of battlefield-tested and reliable rotorcraft, including its UH-60 Black Hawks, AH-64 Apaches, and CH-47 Chinooks.

The Army has been methodically replacing the oldest variants of its rotorcraft and upgrading others that have plenty of airframe service life remaining. Today, the UH-60M, a newer version of the UH-60A, makes up more than half of the total UH-60 inventory. Similarly, the Chinook, the Army’s heavy-lift helicopter, is expected to remain in service until 2030.

In addition to the viability of today’s equipment, the military must ensure the health of future programs. While future modernizing programs are not “current hard power capabilities” that can be applied against an enemy force, they are a significant indicator of a service’s overall fitness for sustained combat operations; that is, the service may be able to engage an enemy but be forced to do so with aging equipment and no program in place to maintain viability or endurance in sustained operations.

It is therefore always a challenge for the U.S. military services to decide how to best stay a step ahead of competitors in balancing investments in modernizing the force today with currently available technology or waiting to see what their investments in research and development produce years down the road. Technologies mature and proliferate, becoming more accessible to a wider array of actors over time. U.S. forces will be challenged by state and non-state competitors who will leverage the latest developments in matériel, computing, platform sciences, and designs.

Thus, despite its relative youth, much of the Army’s equipment was originally designed in the 1960s, ’70s, and ’80s. Even with upgrades and modifications, older designs cannot address all of the necessary requirements to meet evolving threats, as was seen in the vulnerability of legacy ground vehicles to improvised explosive devices (IEDs) and modern anti-armor weapons in Iraq.

The Army is currently undertaking several modernization programs to replace or improve its combat vehicles while maintaining its current rotorcraft fleet. However, as the Army has stated, an effort to focus on “rebuilding [the] readiness” of the current force has put “greater risk on [its] modernization efforts” to prepare for future operations. For example, current and projected budget pressures led the Army to cancel the ground combat vehicle (GCV) program, which was designed to replace the M2 Bradley fighting vehicle, to free funding for its readiness account.
The Army’s only Major Defense Acquisition Program (MDAP) vehicle program is the Joint Light Tactical Vehicle (JLTV), a joint program with the Marine Corps. The JLTV is a follow-on vehicle to the High Mobility Multipurpose Wheeled Vehicle (HMMWV), better known as the Humvee, featuring design improvements that will increase its survivability against anti-armor weapons and the now-commonly found IED threat. The JLTV is still in development, but the Army plans to purchase a total of 54,099 vehicles, replacing only a portion of the current HMMWV fleet. Several issues, including changed requirements and some technical obstacles in the early development phases, have delayed the program from its originally intended schedule by about one year.

The Army’s rotorcraft modernization programs do not include any new platform designs. Instead, the Army is upgrading current rotorcraft to account for more advanced systems.

The Army’s main modernization programs are not encumbered by any major problems, but there is concern about the future direction of Army capability. For example, the cancellation of the GCV program raises the question of replacing the M2 Bradley. The Army is also just starting the Armored Multi-Purpose Vehicle (AMPV) to replace its 1960s-vintage M113 APC. Because it is still in early development and is not yet an MDAP, the AMPV is not included in this year’s scoring.

### Readiness

Due to sequestration in FY 2013, the Army experienced a shortage in readiness funding that resulted in “significantly and rapidly degraded Army readiness, which [has] translated directly into FY 2014.” Recognizing the risk that this introduces into its ability to respond to an emergent threat, the Army chose to prioritize readiness over other expenditures for FY 2014. However, the ongoing need to prioritize readiness for soldiers meeting operational requirements, such as those deployed to Afghanistan, left the rest of the Army with training and sustainment shortfalls.

This tiered readiness strategy means that only a limited number of BCTs are available and ready for decisive action. According to the Vice Chief of Staff of the Army, General Daniel B. Allyn, the Army had “12 brigades that [were] postured and ready to deploy” by the end of FY 2014. The 12 ready BCTs account for 32 percent of the 38 BCTs in the Active Army. This is an improvement from earlier in the year when 80 percent of the Army was considered to be “at a lower readiness level.” As stated, the Army had prioritized funding in readiness over capacity and modernization, allowing them to regain some of the lost readiness as a result of sequestration the prior year.

Another key factor in readiness is the sustainment of equipment. At the most basic level, a unit’s equipment must work when the unit is deployed. As a result of extensive combat usage in Afghanistan and the lingering effects of nearly a decade of combat operations in Iraq, the Army is undertaking a process called “reset,” a program to restore used equipment to desired capability or to replace worn-out equipment for use in future engagements. The Army estimates that it will take three years after the “last piece of equipment has returned” to complete the reset program.

Reduced funding throughout FY 2013, a consequence of sequestration, has forced the Army to postpone the reset of several pieces of equipment, totaling “700 vehicles, 28 aircraft, and 2,000 weapons.” Thus, the Army is falling behind in its efforts to recover from recent operations and prepare for the future, a challenge that will grow as necessary funding continues to be reduced by the BCA. Kicking the “sustainment” can down the road will lead eventually to degraded readiness across the Army.

### Scoring the U.S. Army

**Capacity Score: Marginal**

Historical evidence shows that, on average, the Army needs 21 brigade combat teams to fight one major regional conflict. Based on a conversion of roughly 3.5 BCTs per division, the Army deployed 21 BCTs in Korea, 25 in Vietnam, 14 in the Persian Gulf War, and around four in Operation Iraqi Freedom—an average of 16 BCTs (or 21 if the much smaller OIF contingency is excluded). In the 2010 QDR, the Obama Administration recommended a
force capable of deploying 45 active BCTs. Previous government force-sizing documents discuss Army force structure in terms of divisions; they consistently advocate for 10–11 divisions, which equates to roughly 37 active BCTs.

Considering the varying recommendations of 35–45 BCTs and the actual experience of nearly 21 BCTs deployed per major engagement, 42 BCTs would be needed to fight two MRCs. Taking into account the need for a strategic reserve, the Active Army force should also include an additional 20 percent of the 42 BCTs.

- Two-MRC Benchmark: 50 brigade combat teams.
- Actual 2014 Level: 38 brigade combat teams.

The Army’s current Active-component BCT capacity meets 76 percent of the two-MRC benchmark and thus is scored at the low end of “marginal.”

**U.S. Military Power: Army**

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**Capability Score: Marginal**

The Army’s aggregate capability score is “marginal.” This is a result of “marginal” scores for “Age of Equipment,” “Size of Modernization Programs,” and “Health of Modernization Programs.” The Army scored “weak” for “Capability of Equipment.”

**Readiness Score: Weak**

As stated by the Army, only 12 BCTs were ready for action at the end of FY 2014. The Army had 38 BCTs; therefore, 32 percent of the Active Army was considered ready for combat. For that reason, this Index assesses Army readiness as “weak.”

**Overall U.S. Army Score: Marginal**

The Army’s overall score is calculated based on an unweighted average of its capacity, capability, and readiness scores. The average score was 2.7; thus, the overall Army score is “marginal.”
The Navy’s mandate is “to be where it matters, when it matters.” As the primary maritime arm of the military, the Navy enables the United States to project military power in the maritime and air domains, a critical capability in war, crisis response, and peacetime engagement missions. Unlike land forces (or even, to a large extent, air forces), which are tethered to a set of fixed, larger-scale support bases, the Navy is able to shift its presence wherever needed so long as the world’s oceans and seas permit. In addition to the ability to mass military power rapidly for combat anywhere in the world, the Navy’s peacetime forward presence supports missions that include securing sea lanes for the free flow of goods and services, assuring U.S. allies and friends, deterring adversaries, and providing a timely response to crises short of war.

Two key documents tell the Navy what it must be able to do on a day-to-day basis:

1. The 2012 Defense Strategic Guidance and


The 2012 Defense Strategic Guidance issued by the Secretary of Defense describes the 10 primary missions for all branches of the U.S. military. In addition, the U.S. Navy must meet forward presence requirements laid out in the FY 2014 GFMAP, which states the force presence needed around the world as determined by the combatant commanders and the Secretary of Defense.

Capacity

For the Navy, capacity is measured by the number of ships rather than the number of sailors. Furthermore, not all ships are counted equally. The Navy focuses mainly on the size of its “Battle Force,” which is composed of ships considered to be directly related to its combat mission.

It should be noted that the Navy is changing how it defines “Battle Force” ships starting in FY 2015. This change will make it more difficult to compare the fleet size over time, because some ships that were not previously considered to be part of the Battle Force are now considered to be part of the Force, and others that were part of the Force at a specific level of readiness or availability will still be included even if their actual availability would not meet the previous definition. As a result, the overall ship count attributed to the Battle Force will increase in FY 2015 even though there will not be an increase in the number of actual hulls the Navy owns.

As stated by the Navy, the current requirement for Battle Force ships is 306, derived from the Defense Strategic Guidance and the Global Force Management Allocation Plan. For FY 2014, the Navy had about 282 Battle Force ships. This is a slight decline from previous years by several ships. The highest ship count in the past five years was 288 in FY 2010.

As of FY 2014, the biggest shortfall is in small surface combatants: Littoral Combat Ships, frigates,
and mine countermeasures (MCM) ships. The main driver of this gap is the retirement of seven Oliver Hazard Perry-class frigates in FY 2014.\(^40\) In larger Battle Force ships, such as destroyers, cruisers, and aircraft carriers, the aircraft carrier fleet currently has a shortfall of one vessel (10 instead of 11), but that is considered to be temporary.

The carrier gap resulted from the delayed delivery of the first Ford-class carrier, which was supposed to enter the fleet as the USS Enterprise was decommissioned in 2012. The USS Gerald R. Ford is now expected to be commissioned in 2016. In the future, the aircraft carrier fleet may remain at 10 carriers if Congress allows DOD to cancel the refuel and complex overhaul (RCOH) maintenance cycle for the USS George Washington, effectively retiring the ship from the fleet 25 years early.\(^41\) Other shortfalls are due to underinvestment in the Shipbuilding and Conversion, Navy (SCN) budget to procure new hulls quickly enough to increase the size of the Navy.\(^42\) The Navy’s modernization effort will be discussed further below.

In the next five years, the ship count will likely decline drastically relative to previous years. The Navy ship count could hit 274 ships in FY 2015 (using the original Battle Force ship count rules).\(^43\) Due to topline budget pressures, the Navy is proposing to decommission one aircraft carrier and 10 frigates, though Congress has yet to finalize whether or not the Navy will be able to retire these ships.\(^44\) Should sequestration occur in FY 2016 and following years, the Battle Force ship count will continue to decrease, potentially falling as low as 255 by FY 2020.\(^45\)

As important as the total number of ships is, we must also consider the number of ships that are forward deployed to meet operational demands. Not all ships in the Battle Force are at sea at the same time. The majority of ships are based in the continental U.S. (CONUS) to undergo routine maintenance and training, as well as to limit the deployment time for sailors. However, given the COCOMs’ requirements for naval power presence in their regions, there is an impetus to have as many ships forward deployed as possible. Striking a balance between deploying ships to meet operational demands and keeping them in port to perform needed maintenance and provide relief to sailors is a constant challenge.

Today, the Navy has 104 ships deployed globally—just over 36 percent of the total available fleet. This is a slight increase from the 101 ships deployed in FY 2013.\(^46\) The Navy has tried to increase forward presence by emphasizing non-rotational deployments: having a ship “home-ported” overseas or keeping the ship forward stationed.\(^47\)

### Navy Requirements and Current Inventory

This chart compares the Navy’s stated fleet requirement from its January 2013 report to Congress with their battle force ship inventory in 2014 as reported in the Naval Vessel Register.

<table>
<thead>
<tr>
<th>Ship Type</th>
<th>FY 2014 Requirement</th>
<th>FY 2014 Inventory</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aircraft Carriers</td>
<td>11</td>
<td>10</td>
<td>-1</td>
</tr>
<tr>
<td>Large Surface Combatant</td>
<td>88</td>
<td>85</td>
<td>-3</td>
</tr>
<tr>
<td>Small Surface Combatant</td>
<td>52</td>
<td>26</td>
<td>-23</td>
</tr>
<tr>
<td>SSN Attack Submarines</td>
<td>48</td>
<td>55</td>
<td>7</td>
</tr>
<tr>
<td>SSGN Cruise Missile Submarines</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>SSBN Ballistic Missile Submarine</td>
<td>12</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>AWS Amphibious Warfare Ships</td>
<td>33</td>
<td>31</td>
<td>-2</td>
</tr>
<tr>
<td>CLF Combat Logistics Force</td>
<td>29</td>
<td>31</td>
<td>2</td>
</tr>
<tr>
<td>Support Ships</td>
<td>33</td>
<td>26</td>
<td>-7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>306</strong></td>
<td><strong>282</strong></td>
<td><strong>-24</strong></td>
</tr>
</tbody>
</table>

- **Home-ported:** The ships, crew, and their families, are stationed at the port or base abroad.

- **Forward Stationed:** Only the ships will be based abroad while crews are rotated out to the ship.\(^{48}\)

Both of these non-rotational deployment options require cooperation from friends and allies to permit the Navy’s use of their facilities as well as investment in additional facilities abroad. However, these options allow one ship to provide a greater level of presence than four ships based in CONUS and in rotational deployment since they offset the time necessary to deploy ships to distant theaters.\(^{49}\)

The Navy maintains that it currently will be able to meet the FY 2014 GFMAP requirements and 10 missions outlined in the DSG.\(^{50}\)

**Capability**

Scoring the U.S. Navy’s capability does not just involve counting the fleet. The quality of the Battle Force is also important in determining the strength of the Navy.

A comprehensive measure of platform capability would involve a comparison of each ship and its weapons systems relative to the military capabilities of other nations. For example, a complete measure of naval capabilities would have to assess not only how U.S. platforms would match up against an enemy’s weapons, but also whether operational concepts like the often discussed Air-Sea Battle would be effective in a conflict. This assessment would then have to be replicated for each potential conflict. While this is a necessary exercise and one in which the military currently engages, it is beyond the scope of this Index because such details and analysis are routinely classified.

Capability can be usefully assessed based on the age of ships, the modernity of the platform, and whether or not modernization programs will maintain the fighting edge of the fleet. The Navy has several classes of ships that are nearing the end of their lifespan, and this will precipitate a consolidation of ship classes in the Battle Force. In the next couple of years, the Navy will retire its entire fleet of Oliver Hazard Perry-class frigates. The Tarawa and Austin amphibious ship classes will be retiring soon as well. In the 2020s, the last Avenger-class mine countermeasures ships and Los Angeles-class attack submarines will also go out of service.

The Navy is putting the Ticonderoga-class cruiser fleet into lay-up status in order to extend its service time into the 2030s, even though the ships average 24.2 years out of an expected 35-year service life.\(^{51}\) Similarly, the Navy’s two current LSD classes of amphibious ships, Whidbey Island and Harpers Ferry, are receiving extensions to remain in service until about 2038.

Many of the ships on which the Navy sails are also legacy platforms. Of the 18 classes of ships in the Navy, only seven are currently in production. For example, 76 percent of the attack submarines are Los Angeles-class submarines, an older platform that is being replaced with a more modern and capable Virginia class. This will shift as the Navy continues to purchase more ships.

The procurement of ships is a critical aspect of meeting Navy capacity requirements and maintaining ship capabilities. Modernization programs are intended to replace current platforms as they reach the end of their planned service lives, build up forces to meet capacity requirements, and introduce new technologies to the operating forces.

Because ships take such a long time to build, only a few shipyards are capable of building them, and shipbuilding programs require carefully orchestrated, long lead-time planning to account for sequencing in the shipyards, supply chain and workforce management, and multi-year funding, the Navy publishes a 30-year plan as its top-level document that captures objectives by class and sequencing of replacements as older ships reach the end of their service lives.\(^{52}\) According to the current 30-year plan, the Navy will reach its 306-ship requirement by FY 2022 (using original counting rules).\(^{53}\)

However, the 30-year shipbuilding plan is not limited to programs of record and assumes procurement programs that have yet to materialize. The plan is often considered optimistic for that reason. For example, the goal of 306 ships stated in the Navy’s most recent 30-year plan included an objective for 52 small multi-role surface combatants, despite the Navy’s recently issued guidance that it is reducing its fleet purchase to 32 Littoral Combat Ship (LCS) hulls.\(^{54}\) To make up the gap, the 30-year plan assumes that the Navy will procure another type of small surface combatant following the LCS program, but there is as yet no such program. This Index therefore relies on budget and programmatic data from programs of record to determine the state of Navy modernization.
The most glaring problem with the Navy’s current modernization program has to do with how many ships it plans to purchase. While the Navy has stated its intent to purchase additional attack submarines, the current Virginia-class program of record is slated to produce a total of 30 submarines. This is well short of the 48 attack submarines the Navy requires. At this current rate, assuming the Seawolf-class has been retired, there will be an 18-attack submarine shortfall to the Navy’s 306-ship requirement. The Navy has stated that it will attempt to lengthen deployments and possibly perform service life extensions on some of the existing attack submarines to account for this shortfall. The shortfall in small surface combatants is similarly alarming.

The Avenger-class MCM and Oliver Hazard Perry-class frigate are being retired, which means that the Littoral Combat Ship will assume the entire small surface combatant fleet requirement. Originally, the requirement was to purchase 52 ships, but the number has recently been reduced to 32 ships. The Navy has stated plans to reassess the LCS and develop a path forward to account for the shortfall of 20 small surface combatants after the 32 ships are procured. However, this alternative program does not yet exist.

Timing for the small surface combatants will also be an issue. The remaining frigates are being retired in FY 2015, but the LCS procurement schedule is not rapid enough to make up the loss. The result is a projected shortfall of seven small surface combatants in FY 2015–FY 2018.

Of the seven classes of ships the Navy is building, some have been relatively successful, whereas others are more problematic. Both the Virginia-class submarines and Arleigh Burke-class destroyers have a steady production rate. Both are also being considered for upgrades to improve their capabilities. The newer Arleigh Burke-class Flight III design would be able to support a new and larger Air and Missile Defense Radar (AMDR). The Navy is also considering extending the Virginia-class’s hull to provide space for additional missiles or torpedoes. The San Antonio-class LPD-17 program has largely come to a close unless it is expanded from 11 to 12 total ships procured.

On the other hand, the Ford-class, America-class, DDG-1000, and Littoral Combat Ship have had a multitude of problems. The Zumwalt class ostensibly has been cancelled, reducing the program from 32 ships to three. The delivery of CVN-78, the first of the new Gerald R. Ford class of aircraft carriers, was delayed by a year, causing a shortfall in the number of aircraft carriers (down to 10) in the U.S. fleet. The America-class and Littoral Combat Ship both are also facing delays and adjustments of requirements. The America class will produce only two ships of the current design, and the survivability and strike requirements for the LCS are being questioned. All four programs have experienced cost growth, with the Zumwalt-class, Ford-class, and America-class ships incurring cost breaches.

Despite these difficulties, the Navy regards its fleet as capable of handling today’s threats, albeit with increased risk.

The Navy’s long-range strike capability derives from its ability to launch various missiles and combat aircraft. Of the two, naval aircraft are much more expensive and difficult to modernize as a class. Not too long ago, the Navy operated several models of strike aircraft that included the F-14 Tomcat, A-6 Intruder, A-4 Skyhawk, and F/A-18 Hornet. Over the past 20 years, this variety has been winnowed to a single model: the F/A-18. While the F/A-18 A–D variants were first introduced in 1983 and have already undergone service life extensions, the Navy flies a significant number of F/A-18 E/F Super Hornets that are not only newer, but also considered to be extremely capable. The Navy is implementing efforts to extend the life of some of the older variants but plans to have a mix of the F-35C and F/A-18 E/F Super Hornets.

The F-35C is the Navy’s largest aviation modernization program. It is a fifth-generation fighter (F/A-18s are considered fourth-generation) that will have greater stealth capabilities and state-of-the-art electronic systems, allowing it to communicate with multiple other platforms. The Navy plans to purchase 280 F-35Cs to replace a current inventory of 455 F/A-18 A–Ds. The F-35 is supposed to be a more capable aircraft relative to the F/A-18, but at 280 aircraft, it will not be enough to make up for the Hornets the Navy will need to replace.

In addition, like the other F-35 variants, the F-35C is facing development problems. The system has recently been grounded because of engine problems, and software development issues have threatened further delay. The aircraft has also grown more expensive through the development process. The F-35C is expected to reach initial operating capability (IOC) by FY 2018 or FY 2019. This is later than the initial expectation of IOC by FY 2015.
The Navy’s other aircraft programs, EA-18G and E-2D, have been very successful. The EA-18G program has completed its planned procurement of 135 aircraft in FY 2014. There is a desire to expand the program by 22 aircraft in FY 2015, partly due to requirements as well as the desire to keep the Boeing product line open, but as with all other military programs, this will depend on the availability of funding. The E-2D program is on a steady procurement schedule, though it had to reduce its annual procurement rate from the original five aircraft to four because of budget cuts.

Readiness

Although the Navy can still deploy forces to meet the GFMAP requirements, other factors indicate a decline in readiness. Due to cuts brought on by the sequester in FY 2013, the Navy experienced shortfalls in “facilities maintenance, fleets spares, aviation depots, and weapons maintenance.” Despite partial alleviation of the shortfall as a result of FY 2014 funding under the Bipartisan Budget Act, that shortfall still exists and will proceed into future years. Shortfalls in FY 2013 include meeting only 57 percent of facilities sustainment requirements (a reduction of 30 percent); operating at 90 percent of base operations requirement; and cancellation of five carrier strike group deployments. This Index assumes that the FY 2014 readiness levels are higher than those of previous years, though still not at 100 percent.

In May 2013, only a third of the Navy was fully mission-capable. Historically, 50 percent of the fleet has been certified for major combat operations due to maintenance requirements.

The Navy has stated that despite this maintenance shortfall, it can still “support the FY2014 GFMAP,” but it is doing so by deferring yard maintenance to keep ships at sea instead of in the shipyards, extending the length of deployments, and counting days spent in transit through an area of responsibility (which a ship sometimes must do to get to an assigned AOR) as credit toward GCC/GFMAP requirements. However, the impact that will be felt is in the Navy’s surge capacity. In addition to the two carrier strike groups and two amphibious ready groups that are fully mission-capable, the Navy will have one extra carrier and amphibious ready group that are fully mission-capable and available to deploy quickly as a surge capacity. According to the Navy, this is “one-third of the normal surge capacity.”

Scoring the U.S. Navy

Capacity Score: Marginal

The Navy is unusual relative to the other services in that its capacity requirements must meet two separate objectives. First, during peacetime, the Navy must maintain a forward presence around the world. The Navy’s ongoing peacetime requirement to be present around the world is the driving force behind ship count requirements: a set total number to ensure that the required number of ships is actually available to provide necessary presence around the globe.

On the other hand, the Navy must also be able to fight and win wars. In this case, the expectation is to be able to fight and win two simultaneous or nearly simultaneous MRCs. When thinking about naval combat power in this way, the defining metric is not necessarily a total ship count, but rather the carrier strike groups, amphibious ships, and submarines deemed necessary to win both the naval component of a war and the larger war effort by means of strike missions inland or cutting off the enemy’s maritime access to sources of supply.

An accurate assessment of Navy capacity takes into account both sets of requirements and scores to the larger requirement.

It should be noted that the scoring in this Index includes the Navy’s fleet of ballistic missile and fast attack submarines to the extent that they contribute to the overall size of the Battle Fleet and with general comment on the status of their respective modernization programs. Because of their unique characteristics and the missions they perform, their detailed readiness rates and actual use in peacetime and planned use in war are classified. Still, the various references consulted are fairly consistent in the numbers recommended for the overall fleet and in the Navy’s shipbuilding plan.

The role of SSBNs (fleet ballistic missile submarines) as one leg (arguably the most survivable component) of America’s nuclear triad capability is well-
known; perhaps less well-known are the day-to-day tasks undertaken by the SSN (attack submarines) force, which can include collection, surveillance, and support to the special operations community and whose operations often take place apart from the operations of the surface Navy.

**Two-MRC Requirement.** The primary elements of naval combat power during a major regional contingency operation derive from carrier strike groups (which include squadrons of strike aircraft and support ships) and amphibious assault capacity. Since the Navy is constantly deployed around the globe during peacetime, many of its fleet requirements are beyond the scope of the two-MRC construct. However, it is important to observe the historical context of naval deployments during a major theater war.

- **13 Deployable Carrier Strike Groups.** The average number of aircraft carriers deployed in the Korean War, Vietnam War, Persian Gulf War, and Operation Iraqi Freedom was between five and six. This correlates with the figures recommended in the 1993 Bottom Up Review and subsequent government force-sizing documents, each of which recommended at least 11 aircraft carriers. Assuming that 11 aircraft carriers are needed to engage simultaneously in two MRCs, and assuming that the Navy ideally should have a 20 percent strategic reserve in order to avoid having to commit 100 percent of its carrier groups and account for scheduled maintenance, the Navy should have 13 carrier strike groups.

An aircraft carrier is the centerpiece of a carrier strike group, composed of one guided-missile cruiser, two guided-missile destroyers, one attack submarine, and a supply ship in addition to the carrier itself. Therefore, based on the requirement for 13 aircraft carriers, the following numbers of ships are necessary for 13 deployable carrier strike groups:

- 13 aircraft carriers,
- 13 cruisers,
- 26 destroyers, and
- 13 attack submarines.

- **13 Carrier Air Wings.** Each carrier deployed for combat operations was equipped with a carrier air wing, meaning that five to six air wings were necessary for each of those major contingencies. The strategic documents differ slightly in this regard because they each suggest one less carrier air wing than the number of aircraft carriers.

A carrier air wing usually includes four strike fighter squadrons. Twelve aircraft typically comprise one Navy strike fighter squadron, so at least 48 strike fighter craft are required for each carrier air wing. To support 13 carrier air wings, the Navy therefore needs a minimum of 624 strike fighter aircraft.

- **50 Amphibious Ships.** The 1993 BUR recommended a fleet of 45 large amphibious vessels to support the operations of 2.5 Marine Expeditionary Brigades (MEBs). Since then, the Marine Corps has expressed a need to be able to perform two MEB-level operations simultaneously, with a resulting fleet of 38 amphibious vessels required. The 1996 and 2001 QDRs each recommended 12 “amphibious ready groups” (ARG). One ARG typically includes one amphibious assault ship (LHA/LHD); one amphibious transport dock ship (LPD); and one dock landing ship (LSD). Therefore, the 12-ARG recommendation equates to 36 amphibious vessels.

The number of amphibious vessels required in combat operations has declined since the Korean War, where 34 amphibious vessels were used; 26 were deployed in Vietnam, 21 in the Persian Gulf War, and only seven in Operation Iraqi Freedom (which did not require as large a sea-based expeditionary force). The Persian Gulf War is the most pertinent example for today, because similar vessels were used and modern requirements for an MEB most closely resemble this engagement.

While the Marine Corps has consistently advocated for a fleet of 38 amphibious vessels to execute its two-MEB strategy, it is more prudent to field a fleet of at least 42 such vessels based on the Persian Gulf engagement. Similarly, if the USMC is to have a strategic reserve of 20 percent, the ideal number of amphibious ships would be 50.
Total Ship Requirement. The bulk of the Navy’s Battle Force ships are not directly tied to a carrier strike group. Some surface vessels and attack submarines are deployed independently, which is often why their requirements exceed those of a carrier strike group. The same can be said of the ballistic missile submarine (nuclear missiles) and guided missile submarine (conventional cruise missiles), which operate independently of an aircraft carrier.

This Index uses the benchmark set by previous government reports, mainly the 1993 BUR, which was one of the most comprehensive reviews of military requirements. Similar Navy fleet size requirements have been echoed in follow-on reports.

The numerical values used in the score column refer to the five-grade scale explained earlier in this section, where 1 is “very weak” and 5 is “very strong.” Taking the full Navy requirement of 346 ships as the benchmark, the Navy’s capacity is scored as “marginal.”

Capability Score: Weak

The overall capability score for the Navy is “weak.” This was consistent across all four components of the capability score: “Age of Equipment,” “Capability of Equipment,” “Size of Modernization Program,” and “Health of Modernization Programs.” Given the number of programs, ship classes, and types of aircraft involved, the details that informed the capability assessment are more easily presented in in a tabular format as shown in the Appendix.

This Index does not include an assessment of future programs such as the Ohio-Class Replacement SSBN(X); Unmanned Carrier-Launched Airborne Surveillance and Strike (UCLASS); and LX(R) because these are not yet MDAPs.

Readiness Score: Strong

The Navy’s current readiness score is “strong.” In FY 2014, the Navy improved its current levels of readiness from the previous year. While no precise information is provided for the exact levels of current readiness, the Navy has been able to make up previous readiness shortfalls that resulted from sequester in FY 2013. In FY 2013, 66 percent of the Navy was not assessed to be full-mission capable, compared to a 50 percent average. The previous 16 percent gap will not affect immediate deployments, but it will reduce the Navy’s ability to surge in response to a major conflict.
As stated by the Navy, the FY 2014 funding allowed some of this gap to be closed.

The Navy faces a more serious issue with other factors that will affect future readiness. For example, in FY 2013, the Navy met 57 percent of facilities sustainment requirements and 90 percent of base operations requirements. These shortfalls will inevitably create a backlog in sustainment and maintenance, thereby affecting the ability of equipment, mainly ships, to be forward deployed.

**Overall U.S. Navy Score: Marginal**

The Navy’s overall score is “marginal.” This was derived by aggregating the scores for capacity (“marginal”); capability (“weak”); and readiness (“strong”).

### U.S. Military Power: Navy

<table>
<thead>
<tr>
<th></th>
<th>VERY WEAK</th>
<th>WEAK</th>
<th>MARGINAL</th>
<th>STRONG</th>
<th>VERY STRONG</th>
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</thead>
<tbody>
<tr>
<td>Capacity</td>
<td></td>
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<td>Capability</td>
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<td>Readiness</td>
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<tr>
<td><strong>OVERALL</strong></td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
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</tr>
</tbody>
</table>
The U.S. Air Force (USAF) provides military dominance in the air and space domains that enables the Joint Force to project power quickly anywhere in the world at any time. The Air Force holds that it must be able to respond rapidly to contingencies and be the first force in the fight. With that as its goal, the Air Force focuses on five main missions: (1) air and space superiority; (2) intelligence, surveillance, and reconnaissance (ISR); (3) mobility and lift; (4) global strike; and (5) command and control (C2).

The Air Force used the 2012 Defense Strategic Guidance as its framework for determining investment priorities and posture. As a result of the DSG and fiscal constraints, the Air Force has decidedly “traded size for quality” by aiming to be a “smaller, but superb, force that maintains the agility, flexibility, and readiness to engage a full range of contingencies and threats.”

Capacity

Due to fiscal constraints, the Air Force prioritized capability over capacity. The USAF is on track to reduce the size of its force to the smallest in its history. As of FY 2014, the Air Force has 329,500 active airmen and 7,750 reservists and fields a total of 5,032 aircraft, including 40 combat coded squadrons. The size of today’s Air Force is now below demand from combatant commanders; although the number of fighter squadrons is equal to requirements, bomber and ISR platforms fall short.

The Air Force’s capacity in terms of number of aircraft has been on a constant downward slope since 1952. Unlike the other services, the Air Force did not grow during the post-9/11 buildup. The reduction in capacity is expected to continue in the future due to continued budgetary pressure. Under sequestration, the Air Force will shrink to 26 tactical aircraft (TACAIR) squadrons.

The figures mentioned above illustrate the difficulty of assessing the Air Force’s capacity, as the service uses a variety of inventory categorizations. “Tactical aircraft” refers to air superiority fighters (specializing in air-to-air engagements); strike fighters (dual-role aircraft); and attack planes (those with a primary mission of attacking ground targets). “Combat-coded aircraft” refers to “aircraft assigned to meet the primary aircraft authorization to a unit for the performance of its wartime mission” and can include both tactical aircraft and strategic aircraft such as the B-2 and B-52 strategic bombers.

The total count of 5,032 aircraft includes all manned and unmanned aircraft in the Air Force’s inventory. This report assesses the Air Force’s fleet of tactical aircraft which, as noted in the introduction and described below, requires 1,200 planes to execute a two-MRC strategy.

Capability

Per the 2012 DSG and budget constraints, the Air Force is offsetting cuts in capacity to preserve capability, arguing that it prefers to have fewer aircraft that can win against the advanced fighters and
anti-aircraft missiles being developed by top-tier potential adversaries like China and Russia rather than greater numbers of its current fleet of aircraft, which it states are becoming obsolete.

The state of aircraft capability includes not only the incorporation of advanced technologies, but also the overall state of the inventory, age being a large determinant. According to the USAF, the average age of its aircraft is 27 years. Most aircraft have an original lifespan of 20 to 30 years, largely determined by estimated flying hours and dependent on the severity of the flying environment. Thus, without modification, the bulk of Air Force capability is nearing the end of its expected life cycle. While the Air Force has stated that it is prioritizing capability over capacity, it still has had to reduce investment in modernization, an element critical to ensuring future capability. This reduction resulted from the prioritization of readiness, meaning even at the expense of modernization.

On average, the Air Force’s main combat platforms (fighter aircraft, bombers and strike platforms, mobility and lift) are nearing the end of their service lives. Air superiority is overwhelmingly being supported by the F-15, which makes up 71 percent of the air superiority platforms but has consumed 90 percent of its estimated 30-year service life. With the eventual retirement of the 438 F-15s, 177 F-22s will make up the main arm of air superiority with eventual support from the F-35. The F-16, the most numerous platform at 913 aircraft, has consumed 80 percent of its expected life span. The KC-135 comprises 87 percent of the Air Force’s tankers and is over 50 years old. The aircraft’s reliability is at risk due to problems linked to its age and high usage rate.

The Air Force’s ISR and lift capabilities do not face the same problem. The bulk (289 of 338) of the Air Force’s ISR aircraft are now unmanned aerial vehicles (UAVs), which are relatively young (though they have shorter lifespans than manned aircraft) and less expensive to procure, operate, and maintain.

A service’s investment in modernization ensures that future capability remains healthy. Investment programs aim not only to procure enough to fill current capacity requirements, but also to advance current capabilities with new technology.

The Air Force’s number one priority is the F-35A. It is the next-generation fighter that will be replacing several of the service’s legacy planes like the A-10 and F-16. Interestingly, if the Air Force is able to fund its full program of 1,763 aircraft, it will procure more aircraft than the current inventory of F-16s and A-10s combined (1,341). The Air Force has not explicitly stated the rationale behind the size of the F-35A plan, and this has led some to speculate that the F-35A could also replace the F-15s. If one tallies the F-16s, A-10s, and F-15s (1,808 aircraft), the total inventory is much closer to the F-35A program objective of 1,763 aircraft.

The service states officially that the F-35A will complement the F-22, much as the F-16 ground attack aircraft complements the F-15 air combat aircraft. However, the Air Force did not procure enough F-22s to replace the F-15s. The Active Air Force currently has 438 F-15s to its 177 F-22s, and with the eventual retirement of the F-15, there are concerns about what will fill this gap. The F-35A was not designed to do so; rather, the F-35A, like the F-16 and A-10s that it is replacing, is suited for air-to-ground combat.

Like the other variants, the F-35A is riddled with problems (including technological delays, significant cost growth, production delays, and budget cuts) that have slowed development. As a result, the IOC date has been pushed from 2013 to 2016. Given the age of the aircraft the F-35A will be replacing, there is little room for further slippage in the F-35 program.

The second priority for the USAF is the KC-46 air refueling tanker aircraft replacement for the legacy KC-135. The KC-46 is still in development and is also experiencing delays, which is troublesome given the advanced age (averaging 51 years) and condition of the current KC-135 system. In addition, the KC-46 program of record is for 179 aircraft, indicating that this system will replace less than half of the current tanker inventory of 391 aircraft.

**Readiness**

The Air Force’s readiness is affected by several inputs: training (for example, flying hours); weapon system sustainment; facilities; and installations. The decision to reduce the size of the Air Force to COCOM requirements now requires that the entire force must be ready at all times, which means no strategic reserve capacity for the service to respond to unanticipated requirements. Maintaining this very high state of readiness is necessary if the Air Force is going to continue to be the world’s dominant air superiority force.
According to the Air Force, however, readiness has been declining since 2003. This trend was further aggravated in FY 2013 by the implementation of sequester, which cut spending on readiness. In FY 2013, flying hours were reduced by 18 percent, and 17 combat-coded squadrons of 40 (43 percent) were temporarily stood down. In FY 2014, the Air Force prioritized its funding on readiness to make up those shortfalls, but the investment was not sufficient to make up the loss, and the shortfall in readiness still exists in FY 2014 and will persist into FY 2015.

In addition to insufficient funding, making up readiness losses takes significant time. For example, standing down a unit for 60 days results in a degraded (unfit for combat) unit. To return the unit to desired levels of proficiency will take six months to a year. Similarly, because of depot delays, “[i]t can take two-to-three years to recover full restoration of depot workforce productivity and proficiency.”

Scoring the U.S. Air Force

Capacity Score: Strong

The preponderant element of combat power in the U.S. Air Force is its fleet of fighter aircraft. The Air Force has deployed an average of 28 squadrons to major combat engagements since World War II.

Based on an average of 18 aircraft per fighter squadron, around 500 fighter aircraft are necessary to execute one MRC. Of the government force-sizing documents that counted fighter aircraft, squadrons, or wings, an average of 55 squadrons, or 990 aircraft, is required to field a two-MRC capable force. By doubling the historical combat average, one arrives at a force of 1,000 fighter aircraft. This Index looks for 1,200 fighters, to account for the 20 percent reserve necessary when considering availability for deployment and risk of employing 100 percent of fighters at any one point in time.

- Two-MRC Level: 1,200 fighter aircraft.
- Actual 2014 Level: 1,098 fighter aircraft.

The Air Force is operating at 91 percent of the benchmark requirement of 1,200, and its capacity is therefore scored as “strong.” The 91 aircraft over the 1,000 necessary to fight two major conflicts (based on historical averages) serves to reduce operational risk and provide a strategic buffer or reserve capacity but is still short of the 200 additional aircraft to reach the benchmark.

Capability Score: Marginal

The Air Force capability score is “marginal,” a result of being scored “strong” in “Size of Modernization Program,” “marginal” for “Age of Equipment” and “Health of Modernization Programs,” but “weak” for “Capability of Equipment.”

Readiness Score: Strong

The Air Force scores “strong” in readiness. Due to its need to respond quickly to an emergent crisis, the Air Force requires full readiness of its combat airpower, but it has been suffering from degraded readiness since 2003, and the recent 2013 sequester has further aggravated the problem. Similar to the other services, the FY 2014 budget allowed the USAF to make up some of its readiness shortfalls. However, there is little information in the public domain about the current state of readiness in FY 2014.

This Index assumes that today’s readiness levels are better than those in FY 2013 when flying hours were reduced by 18 percent and nearly half of combat-coded squadrons were stood down. Assuming that the Air Force was able to rebuild some of these losses, the Index assumes a range of 60 percent–79 percent in meeting USAF readiness requirements.

Overall U.S. Air Force Score: Strong

The Air Force’s score for overall capability is “marginal.” This is an unweighted average of its capacity score of “strong,” capability score of “marginal,” and readiness score of “strong.”
### U.S. Military Power: Air Force

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The U.S. Marine Corps (USMC) has positioned itself for crisis response and has evolved its concepts to leverage its equipment more effectively to support operations in a heavily contested maritime environment such as the one found in the Western Pacific. In 2014, 4,000 Marines were still fighting in Afghanistan, though force levels have been decreasing as operations draw down. The military will be deploying 10,000 troops to Afghanistan in 2015, and the Marines will make up a portion of those troops. Throughout the year, Marines also engage in various operations elsewhere; for example, they provided humanitarian assistance to the Philippines in the aftermath of Typhoon Haiyan.

Per the Defense Strategic Guidance, maintaining the Corps’ crisis response capability is critical. Thus, given the fiscal constraints imposed, the Marines have prioritized “near-term readiness” for “long-term health.” Specifically, this means prioritizing readiness at the expense of capacity and capability. This trade-off is a short-term fix to meet immediate needs, but in the long run, the degradation of investment in equipment will lead to lowered readiness.

**Capacity**

The Marine Corps has managed the reduction in funding by cutting capacity. Similar to the Army, the Corps’ measures of capacity are end strength and units (battalions for the Marines and brigades for the Army). End strength has been decreased from a force of 202,100 Active personnel in FY 2012 to 188,800 in FY 2014. Of these 188,800 Marines, 6,700 were funded from the Overseas Contingency Operations budget. As of now, the drawdown is expected to continue until FY 2015, when the Corps will reach an end strength of 182,100 Active personnel. If sequestration were to occur in FY 2016, end strength would be cut further to 175,000 by FY 2017.

The Marine Corps organizes itself in infantry battalions, which are its basic combat unit. A battalion has about 900 Marines and includes three rifle companies, a weapons company, and a headquarters and service company. The overall reductions in end strength left the USMC with 25 infantry battalions in FY 2014. By FY 2015, the Corps will have 23 infantry battalions. Under full sequestration, USMC end strength will be able to support only 21 infantry battalions.

In 2010, the USMC determined that its ideal force size would be 186,800. However, given the budget pressures from the Budget Control Act of 2011 and the new 2012 Defense Strategic Guidance, the Corps decided that a force size of “182,100 active component Marines could still be afforded with reduced modernization and infrastructure support.”

One impact of reduced capacity is a reduction in dwell time. The stated ideal deployment-to-dwell time ratio is 1:3 (three months at home for every month deployed), which is possible with 186,000 troops. If the USMC were to shrink to 175,000 troops, the deployment-to-dwell time ratio would be 1:2. This increase in deployment frequency would worsen the degradation of readiness: People and equipment would be used more frequently, with less time to recover between deployments.
Capability

The nature of the Marine Corps’ crisis response role requires capabilities that span all domains. The USMC ship requirement is managed by the Navy and is covered in that respective section.

Of the Marine Corps’ current fleet of vehicles, its amphibious vehicles—specifically, the Assault Amphibious Vehicle (AAV-7A1) and Light Armored Vehicle (LAV)—are the oldest, averaging 35 and 23 years, respectively. Comparatively, the Corps’ M1A1 Abrams inventory is 13 years old with an estimated 34-year life span, and its fleet of light tactical vehicles such as HMMWVs (“Humvees”) are relatively young, averaging five years.

The Corps’ main combat vehicles all entered service in the 1970s and ’80s, and while service life extensions, upgrades, and new generations of designs have allowed the platforms to remain in service, these vehicles are quickly becoming ill-suited to the changing threat environment. For example, with the advent of IEDs, the flat-bottom hulls found on most legacy vehicles are ineffective compared to the more blast-resistant V-shaped hulls incorporated in modern designs.

The Corps’ aircraft have age profiles similar to the Navy’s. The USMC has 237 F/A-18 A–Ds and 29 EA-6Bs, which are nearing (if they have not already surpassed) their intended lifespans. Unlike the Navy, the Corps did not acquire the newer F/A-18 E/F Super Hornets; thus, the older F/A-18 Hornets are going through a service life extension program to extend their lifespan to 10,000 flight hours from the original 6,000 hours. This is to bridge the gap to when the F-35Bs and Cs enter service to replace the Harriers and most of the Hornets. The AV-8B Harrier, designed to take off from the LHAs and LHDs, will be retired in 2024.

The Marine Corps has one MDAP vehicle program. The Joint Light Tactical Vehicle (JLTV) is a joint program with the Army to acquire a more survivable light tactical vehicle to replace a percentage of the older HMMWV fleet, originally introduced in 1985. The Marines intend to purchase 5,500 vehicles (10 percent of a total of 54,599). The program is still in development but has experienced about a one-year delay due to a change in requirements, a contract award protest, and concerns regarding technical maturity.105

It should be noted that the Marine Corps has plans to replace the AAV-7A1 and LAV, but those programs are not yet MDAP programs, largely because of recent cancellations and program restructure. The AAV-7A1 was to be replaced by the Expeditionary Fighting Vehicle (EFV), a follow-on to the cancelled Advanced AAV. However, the EFV was also cancelled in 2011 due to technical obstacles and cost overruns. The follow-on to the EFV was the Amphibious Combat Vehicle (ACV). Similarly, the Corps planned to replace the LAV inventory with the Marine Personnel Carrier (MPC), which would serve as a Light Armored Vehicle with modest amphibious capabilities but be designed with enhanced survivability.

In 2014, the Marine Corps decided to restructure its modernization programs, essentially combining both efforts, cancelling the development efforts for a completely new ACV, and instead opting to upgrade a portion of the AAV-7A1 fleet. In addition, the Corps will purchase new vehicles based on the MPC concept. In the future, it is likely that this program will become an MDAP.

In FY 2014, the Marine Corps’ largest investment program was the F-35B program. As planned, the F-35B variant will be the first operational variant of the F-35 family and is estimated to reach IOC by late 2015. The Corps is also purchasing 80 F-35Cs. The service’s total procurement of 340 F-35s will not be enough to replace the current inventory of F/A-18s, AV-8Bs, and EA-6Bs, totaling 408 aircraft. Like the F-35A, the F-35B and F-35C variants are subject to development delays, cost overruns, budget cuts, and production problems. The F-35B in particular was placed on probation in 2011 because of its technical challenges. Although probation has since been lifted, a delay in the program timeline is pushing the F-35B IOC date from its original 2012 to 2015.

Today, the MV-22 program is operating with few problems and nearing completion of the full acquisition objective of 460 aircraft. It has been steadily replacing the CH-46, a lift platform dating from the Vietnam War. The USMC heavy lift replacement program, the CH-53K, is a bit more problematic. The CH-53K will replace the Corps’ CH-53E, which averages 25 years. However, the CH-53K is still in development, and critical technologies necessary to achieve the lift requirements are still unproven.

Readiness

The Marine Corps’ first priority is to be the crisis response force for the military, which is why investment in readiness has been prioritized over capac-
ity and capability. However, in order to invest in readiness in a time of downward fiscal pressure, the Corps has been forced to reduce end strength and delay investment in modernization. The Corps has stated that “over the long-term, resourcing short-term readiness by borrowing-forward from long-term investment resources is unsustainable, and will eventually degrade unit readiness to an unacceptable level.”

Despite the emphasis on readiness, in FY 2014, “60 percent of [the Corps’] non-deployed units [were] experiencing degraded readiness in their ability to execute core missions.” This constitutes about 48 percent of the total USMC force. Because the Marine Corps expects to be the first to respond to a situation or crisis, this dictates that all units, even non-deployed units, should be “ready.” The Corps has stated that “over the long-term, resourcing short-term readiness by borrowing-forward from long-term investment resources is unsustainable, and will eventually degrade unit readiness to an unacceptable level.”

Scoring the U.S. Marine Corps

Capacity Score: Weak
Based on the deployment of Marines across major engagements since the Korean War, the Corps requires roughly 15 battalions for one MRC. Therefore, it would need a force of around 30 battalions to fight two MRCs simultaneously. The government force-sizing documents that discuss Marine Corps composition support this. Though the documents that make such a recommendation count the Marines by divisions, not battalions, they are consistent in arguing for three Active Marine Corps divisions, which in turn requires roughly 30 battalions. With a 20 percent strategic reserve, the ideal USMC capacity for a two-MRC force-sizing construct is 36 battalions.

More than 33,000 Marines were deployed in Korea, and over 44,000 were deployed in Vietnam. In the Persian Gulf, one of the largest Marine Corps missions in U.S. history, some 90,000 Marines were deployed, and around 66,000 were deployed for Operation Iraqi Freedom. As the Persian Gulf War is the most pertinent example for this construct, a force of 180,000 Marines is a reasonable benchmark. This is supported by government documents, which have advocated for a force as low as 174,000 (1993 BUR) and as high as 202,000 (2010 QDR), with an average of 185,000 end strength being recommended.

- Two-MRC Level: 36 battalions.
- Actual 2014 Level: 25 battalions.

The Corps is operating with 69 percent of the number of battalions relative to the two-MRC benchmark. Its capacity is therefore scored as “weak.”

Capability Score: Marginal
The Corps received a “weak” score for “Capability of Equipment,” scores of “marginal” for “Age of Equipment” and “Health of Modernization Programs,” but a “strong” score for “Size of Modernization Program.” Therefore the aggregate score for Marine Corps capability is “marginal.”

Excluded from the scoring are various ground vehicle programs that have been cancelled and are now being reprogrammed. This includes redesign of the Amphibious Combat Vehicle program and the Marine Personnel Carrier.

Readiness Score: Marginal
In FY 2014, 48 percent of the USMC experienced degraded readiness. As a crisis response force, the USMC requires that all units, whether deployed or non-deployed, be ready. Thus, this Index scores the Corps’ readiness as “marginal” because the USMC is meeting 52 percent of its readiness requirement.

Overall U.S. Marine Corps Score: Marginal
The Marine Corps is scored as “marginal” overall. Though its capacity was in the “weak” category, the Corps’ overall score was buoyed by a rather healthy modernization program.
## U.S. Military Power: Marine Corps

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U.S. Nuclear Weapons Capability

Assessing the state of U.S. nuclear weapons capabilities presents several challenges. First, the U.S. has elected to maintain the weapons—based on designs from the 1970s—that were in the stockpile when the Cold War ended rather than develop new weapons. Second, detailed data about the readiness of nuclear forces, their capabilities, and weapon reliability are not publicly available, and this makes analysis difficult. Third, the U.S. nuclear enterprise is comprised of many components, some of which are also involved in supporting conventional missions. For example, bombers do not fly with nuclear weapons today as they routinely did during the Cold War (although they are capable of doing so again if the decision should ever be made to resume this practice). Also, the U.S. National Nuclear Laboratories perform a variety of functions related to nuclear nonproliferation, medical research, and nuclear detection, among many others, as opposed to focusing solely on the nuclear weapons mission.

Thus, assessing the extent to which any one piece of the nuclear enterprise is sufficiently funded, focused, and effective with regard to the nuclear mission is problematic.

The second important factor is flexibility and resilience of the nuclear weapons complex that underpins the U.S. nuclear deterrent. If the U.S. detects a game-changing nuclear weapons development in another country, the capability of the U.S. nuclear weapons complex to adjust would be of concern.

The U.S. does maintain an inactive stockpile that includes near-term hedge warheads that can be put back into operational status within six to 24 months. Extended hedge warheads can be made ready within 24 to 60 months. The U.S. preserves some of this upload capability on its strategic delivery vehicles. For example, the U.S. Minuteman III ICBM can carry up to three nuclear warheads, though it is currently deployed with only one.

Presidential Decision Directive-15 (PDD-15) requires the U.S. to maintain the ability to conduct a nuclear test within 24 to 36 months of a presidential decision to do so. However, successive governmental reports have found continued deterioration of technical and diagnostics equipment and an inability of the National Nuclear Laboratories to fill technical positions supporting nuclear testing readiness.

The National Nuclear Laboratories are beset by talent and recruitment challenges of their own. Thomas D’Agostino, former Under Secretary of Energy for Nuclear Security and Administrator of the National Nuclear Security Administration (NNSA), stated that in about five years, the United States will not have a single active engineer who had “a key hand in the design of a warhead that’s in the existing stockpile and who was responsible for that particular design when it was tested back in the early 1990s.” This is a significant problem because for the first time since the dawn of the nuclear age, the U.S. will have to rely on the scientific judgment of people who were not directly involved in nuclear tests of weapons that they had designed and develop-
oped and were certifying. It is unclear how much of the existing inactive stockpile will go through the life extension program. Hence, our ability to reconstitute nuclear forces will probably decline with the passage of time.

The uncertainty regarding the funding and direction of the nuclear weapons complex is one of the factors that complicate the National Laboratories’ efforts to attract and maintain young talent. The shift of focus away from the nuclear mission after the end of the Cold War caused the National Laboratories to lose their sense of purpose and to feel compelled to reorient their mission focus and change their relationship with the government. The NNSA was supposed to address these problems, but it has largely failed in this task, partly because “the relationship with the NNSA and the National security labs appears to be broken.”

In 1999, the Commission on Maintaining U.S. Nuclear Weapons Expertise concluded that 34 percent of the employees supplying critical skills to the weapons program were more than 50 years old. The number increased to 40 percent in 2009. This is more than the average in the U.S. high-technology industry. In 2012, a number of employees of the Los Alamos National Laboratory were laid off in anticipation of a $300 million shortfall. The lack of resources is undermining the morale of the workforce.

The third important indication of the health of the overall force is the readiness of forces that actually operate U.S. nuclear systems. Since the end of the Cold War, the Air Force, which currently operates two of the three legs of the nuclear triad, has faced significant challenges regarding its operation of U.S. nuclear forces. In 2006, the Air Force mistakenly shipped ICBM components to Taiwan. A year later, the Air Force transported nuclear-armed cruise missiles without authorization (or apparently even awareness that it was doing so) across the U.S. These serious incidents led to the establishment of a Task Force on DOD Nuclear Weapons Management, which found that “there has been an unambiguous, dramatic, and unacceptable decline in the Air Force’s commitment to perform the nuclear mission and, until very recently, little has been done to reverse it” and that “the readiness of forces assigned the nuclear mission has seriously eroded.”

Following these incidents, the Air Force instituted broad changes to improve oversight and management of the nuclear mission and inventory of nuclear weapons, including creating the Global Strike Command to organize, train, and equip intercontinental-range ballistic missile and nuclear-capable bomber crews as well as other personnel to fulfill a nuclear mission and implement a stringent inspections regime.

The U.S. government currently uses two metrics to evaluate the Department of Defense’s Strategic Objective of “Maintain[ing] a safe, secure, and effective nuclear arsenal to deter attack on the U.S. and on our allies and partners.” They are:

- “[The] Number of formal Department of Defense-led meetings with international partners to reaffirm U.S. commitments to extended deterrence” and

- “[The] Passing percentage rate for Defense Nuclear Surety Inspections (DNSIs).

In the first category, the Department of Defense exceeded its goals in FY 2011, FY 2012, and FY 2013. In the second category, passing percentage rates were 71 percent in FY 2008, 77 percent in FY 2009, 73 percent in FY 2010, 85.7 percent in FY 2011, 100 percent in FY 2012, and 91.7 percent in FY 2013, with the target being 100 percent. While these indicate an improved trend, the Air Force is currently undergoing a major review following a string of additional missteps in 2013 and 2014.

This calls the credibility and relevance of the metrics into question. It is also not clear how the number of meetings contributes to affirming the U.S. commitment to extended deterrence absent evaluation of capabilities and requirements that allies consider necessary for assurance.

Fiscal uncertainty and a steady decline in resources for the nuclear weapons enterprise have negatively affected U.S. nuclear weapons readiness. Admiral C. D. Haney, Commander, U.S. Strategic Command (STRATCOM), recently testified that “[i]n recent years the percentage of spending on nuclear forces has gradually declined to only 2.5% of total DOD spending in 2013—a figure near historic lows,” although he also stated that he fully believes STRATCOM “remains capable and ready to meet our assigned missions.”

Admiral Haney went on to note that the sequestration-level reductions in FY 2013 had negatively
affected STRATCOM’s readiness and had the potential to further affect U.S. capabilities in the future. While he noted that it was impossible to tell just what effects sequestration would have, he observed that the existing freeze on hiring new personnel and furlough of the workforce during the summer of 2013 had diminished the human capacity needed, resulting in a lessening of STRATCOM’s readiness through lack of research and development, modernization, and know-how.

**Implications for U.S. National Security**

U.S. nuclear forces are not designed to shield the nation from all types of attacks from all adversaries. They are designed to deter large-scale attacks, including nuclear attacks, against the U.S. homeland, forward-deployed troops, and allies.

In addition, U.S. nuclear forces have played an important role in the global nonproliferation regime. U.S. assurances to NATO, Japan, and South Korea have led these allies either to keep the number of their nuclear weapons lower than otherwise would be the case (France, the U.K) or to forgo their development and deployment altogether. North Korea has proven that a country with very limited intellectual and financial resources can develop a nuclear weapon if it decides to do so. This makes U.S. nuclear assurances for advanced industrial nations ever more important.

Certain negative trends could undermine U.S. nuclear deterrence if problems are not addressed. From an aging nuclear weapons infrastructure and workforce, to the need to recapitalize all three legs of the nuclear triad, to the need to conduct life extension programs while maintaining a self-imposed nuclear weapons test moratorium, to limiting the spread of nuclear know-how and the means to deliver nuclear weapons, to adversaries who are modernizing their nuclear forces, there is no shortage of challenges on the horizon.

Deterrence is a complex interplay between one’s conventional and nuclear forces and the beliefs of both allies and adversaries that one will use these forces to protect allies and defend both one’s own interests and their interests. The requirements of deterrence and warfighting may be quite different and thus should be considered within their own context and then balanced against each other to ensure that the U.S. nuclear portfolio is structured in capacity, capability, variety, and readiness to meet both types of demands. In addition, military requirements and specifications for nuclear weapons might be different depending on different circumstances and who one wants to deter from doing what.

Due to the complex interplay between policy, actions that states take in international relations, and other actors’ perceptions of the world around them, it is quite possible that one might never know precisely when deterrence became less credible. Nuclear weapons capabilities take years to develop, and the infrastructure supporting them takes years to deteriorate. But we can be reasonably certain that a robust, well-resourced, focused, and reliable nuclear enterprise is more likely to sustain its deterrent value than is a weakened, unfocused, and questionable one.

We know that the U.S. is capable of incredible mobilization when dangers materialize. The evidence points to just such a danger maturing on our doorstep with regard to nuclear affairs. The nuclear threat environment is dynamic and proliferating, with old and new actors developing new capabilities while the U.S. enterprise is moribund. This is a worrisome situation because of its implications both for the security of the United States and for the security of its allies and the free world generally.

**Scoring U.S. Nuclear Weapons Capabilities**

The U.S. nuclear weapons enterprise is composed of several key elements that include warheads, delivery systems, and the physical infrastructure that designs, manufactures, tests, and maintains U.S. nuclear weapons. The complex also includes the talent of people, from physicists to maintainers and operators, without which none of this would be possible.

The factors selected below are the most important elements of the nuclear weapons complex. The set of factors below is judged on a five-grade scale, where “very strong” means that a sustainable, viable, and funded plan is in place and “very weak” means that the U.S. is not meeting its security requirements, which has the potential to
damage vital national interests if the situation is not corrected.

**U.S. Warhead Surety Score: Marginal**

U.S. warheads must be reliable. The Department of Energy (DOE) defines reliability as “the ability of the weapon to perform its intended function at the intended time under environments considered to be normal.”\(^{129}\) The DOE also describes reliability as “the probability of achieving the specified yield, at the target, across the Stockpile-to-Target Sequence of environments, throughout the weapon’s lifetime, assuming proper inputs.”\(^{130}\) Since 1993, reliability has been determined through non-nuclear experiments (that is, without the use of nuclear testing); sophisticated calculations using high-performance computers; and related evaluations. Nuclear warhead reliability also becomes more important as the number and diversity of nuclear weapons in the stockpile become lower. U.S. leaders and allies must be confident that U.S. nuclear warheads will perform as expected.\(^{131}\)

An aged nuclear warhead presents serious problems. Aged nuclear warheads may not be able to perform their mission as expected, and this might significantly complicate military planning. Despite creating impressive amounts of knowledge about nuclear weapons physics, the U.S. is not completely certain about the long-term effects of aging components that comprise a nuclear weapon. Former NNSA spokesman Bryan Wilkes said, “We know that plutonium pits have a limited lifetime.”\(^{132}\) A plutonium pit is a crucial component of a nuclear weapon.\(^{133}\)

Safety and security remain serious concerns when it comes to nuclear weapons. Security of long-term storage sites, potential problems introduced by improper handling, or unanticipated effects stemming from long-term handling could compromise the integrity of U.S. warheads. In 2013, for example, a group of activists got close to the Oak Ridge Y-12 complex without proper authorizations.\(^{134}\) The nuclear warheads themselves contain security measures that are designed to make it difficult, if not impossible, to detonate a weapon absent a proper authorization.

**Grade:** The DOE and Department of Defense are required to certify the reliability of the nuclear stockpile annually. This assessment does not include delivery systems, although the U.S. Strategic Command does assess overall weapons system reliability, which includes both the warhead and delivery platforms. Absent nuclear weapons testing, the assessment of weapons reliability becomes subjective opinion rather than fact. While certainly an educated opinion, it is not a substitute for the type of objective data obtained through nuclear testing. Testing was used to diagnose potential problems and to certify the effectiveness of the fixes to the problems.

According to the late Major General Robert Smolen, some of the nuclear weapon problems the U.S. now faces “in the past would have [been] resolved with nuclear tests.”\(^{135}\) By 2003–2005, a consensus emerged in the National Nuclear Laboratories that it would “be increasingly difficult and risky to attempt to replicate existing warheads without nuclear testing and that creating a reliable replacement warhead should be explored.”\(^{136}\) When the U.S. did nuclear testing, it was frequently found that small changes in the tested configuration of a weapon sometimes had dramatic impact on weapons performance. In fact, the 1958–1961 testing moratorium resulted in weapons with serious problems being introduced into the U.S. stockpile.\(^{137}\)

The latest certification of the stockpile was reported as “successful.” This means that, based on the advice from the Directors of the National Laboratories and Commander of STRATCOM, the Secretary of Defense and the Secretary of Energy signed a document stating that the stockpile was reliable and did not require nuclear testing.

The lack of nuclear weapons testing does create some uncertainty concerning the adequacy of fixes to the stockpile when problems are found. This includes updates made in order to correct problems that were found in the weapons or changes in the weapons resulting from life extension programs. It is simply impossible to duplicate exactly weapons that were designed and built many decades ago. According to former Defense Threat Reduction Agency Director Dr. Stephen Younger, we have had “a number of problems that were never anticipated” and had to fix them by using “similar but not quite identical parts.”\(^{138}\) The high costs of having to certify weapons without nuclear testing are resulting in fewer types of weapons and, as a consequence, a greater impact across the inventory if there is an error in the certification process.

Secretary of Defense Robert Gates warned in October 2008 that, “[t]o be blunt, there is absolutely
no way we can maintain a credible deterrent and reduce the number of weapons in our stockpile without either resorting to testing our stockpile or pursuing a modernization program.”110 The U.S. is pursuing warhead life extension programs that replace aging components before they can cause reliability problems. However, the national commitment to this modernization program, including the necessary funding over the long term, is still uncertain. As a result, this indicator earns only a “marginal” grade.

Reliability of U.S. Delivery Platforms Score: Strong

Reliability encompasses not only the warhead, but the strategic delivery vehicles as well. This includes a successful missile launch, the separation of missile boost stages, the performance of the missile guidance system, the disengagement of the multiple re-entry vehicle warheads from the missile, and the accuracy of the final re-entry vehicle in reaching its target.110

The U.S. conducts ICBM and SLBM flight tests every year to ensure the reliability of its systems. Anything from electrical wiring to faulty booster separations could degrade the efficiency and safety of the U.S. strategic deterrent if it were to malfunction. U.S. strategic, long-range bombers regularly conduct intercontinental training and receive upgrades in order to sustain a high-level of combat readiness.

Grade: U.S. ICBMs and SLBMs are flight tested annually, and these tests were successful in FY 2014. To the extent that data from these tests are publicly available, these data provide objective evidence of the delivery systems’ reliability. The aged systems, however, occasionally have reliability problems.111 Overall, this factor earns a “strong” grade.

Nuclear Warhead Modernization Score: Weak

During the Cold War, the United States maintained a strong focus on designing and developing new nuclear warhead designs in order to counter Soviet advances and modernization efforts. Today, the United States is not developing any new nuclear warheads even though other countries are doing so. Typically, weapons and delivery vehicles are not replaced until they are well beyond their designed life span, and this increases the risk of failure due to aging components. Nearly every other nuclear power is carrying out a modernization program that involves warhead and delivery system upgrades.

New weapon designs could allow U.S. engineers and scientists to improve previous designs and address new military requirements (for example, the need to destroy deeply buried hardened targets) that have emerged since the end of the Cold War. The safety and security of U.S. weapons can be enhanced in ways that may not be possible without nuclear testing.

An ability to work on new weapon designs would also help U.S. experts to remain engaged and knowledgeable. As the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile noted, “Only through work on advanced designs will it be possible to train the next generation of weapon designers and producers. Such efforts are also needed to exercise the DoD/NNSA weapon development interface.”142 New warhead development, coupled with possible use of very low-yield nuclear weapons tests, allows some other states to maintain their levels of proficiency and improve nuclear weapons designs.

Grade: A lack of nuclear weapons modernization plans and restrictions on thinking about new designs that might be able to accomplish the deterrence mission in the 21st century more effectively earn nuclear warhead modernization a “weak” grade.

Nuclear Delivery Systems Modernization Score: Weak

The age of U.S. platforms can have a significant impact on the operational capacity of the U.S. strategic deterrent. The older the weapons, the more at risk they are from faulty components or malfunctioning equipment. Age can degrade reliability by increasing the potential for systems to break down or fail to respond in a timely manner. Corrupted systems, defective electronics, or performance degradation due to long-term storage defects (in the case of nuclear warheads) or improper handling can have serious implications for U.S. deterrent and assur-
ance of allies. If a strategic delivery vehicle cannot be counted on to operate at all times, its deterrent and assurance value becomes significantly reduced.

The U.S. plans to replace each leg of the nuclear triad in the next several decades. Current ICBMs and submarines are expected to remain in service until 2032 and 2042, respectively, and new bombers are planned to enter into service in 2023. The new bombers are not scheduled to be nuclear-certified until about 15 years after they enter the service. Further uncertainty is caused by sequestration.

Maintenance issues caused by aging and worn parts for U.S. SSBNs or long-range bombers could make it difficult to deploy units overseas for long periods of time or remain stealthy in enemy hotspots. As Bradley Thayer and Thomas Skypek have noted, “Using 2009 as a baseline, the ages of the current systems of the nuclear triad are 39 years for the Minuteman III, 19 years for the Trident II D-5 SLBM, 48 years for the B-52H, 12 years for the B-2, and 28 years for the Ohio Class SSBNs.” Currently, there is “more computing power in a first-generation iPhone than our ICBM force.” It is also very difficult to remanufacture some parts of the weapons since some of the manufacturers are no longer in business or the materials that constituted the original weapons are no longer available (for example, due to environmental restrictions).

**Grade:** While U.S. nuclear weapons and delivery platforms go through periodic maintenance cycles, their advanced age is causing doubts about whether their mission can be accomplished successfully before the forces are modernized. Uncertainty regarding when the new platforms will enter into force and be nuclear-certified and uncertainty regarding U.S. future stockpile strategy earn this indicator a “weak” grade.

**Nuclear Weapons Complex Score: Weak**

A large part of maintaining a reliable and effective nuclear stockpile is the facilities where U.S. devices and components are created, assessed, tested, and produced. These facilities constitute the foundation of our strategic arsenal and include the:

- Los Alamos National Laboratories,
- Lawrence Livermore National Laboratories,
- Sandia National Laboratory,
- Nevada National Security Site,
- Pantex Plant,
- Kansas City Plant,
- Savannah River Site, and
- Y-12 National Security Complex.

These complexes test, develop, and produce the weapons in the U.S. nuclear arsenal. Their maintenance is of critical importance. As the 2010 NPR stated:

In order to remain safe, secure, and effective, the U.S. nuclear stockpile must be supported by a modern physical infrastructure—comprised of the national security laboratories and a complex of supporting facilities—and a highly capable workforce with the specialized skills needed to sustain the nuclear deterrent.

A flexible and resilient infrastructure is an essential hedge in the event that components fail or the U.S. is surprised by the nuclear weapon capabilities of potential adversaries. While U.S. research and development efforts and the industrial base that supports modernization of delivery systems are an important part of this indicator, this section does not attempt to address them.

Maintaining a safe, secure, and effective nuclear stockpile requires facility expertise and tools to repair any malfunctions quickly, safely, and securely and produce new nuclear weapons if they are required. The current U.S. nuclear weapons complex is not fully functional. The U.S. cannot produce more than a trivial number of new warheads. Dr. John Foster has reported that the U.S. can no longer “serially produce many crucial components of our nuclear weapons.”

If the facilities are not properly funded, the U.S. will gradually lose the ability to conduct high-quality experiments. Obsolete facilities and poor working environments make maintaining a safe, secure, reliable, and militarily effective nuclear stockpile exceedingly difficult, in addition to demoralizing the workforce and hampering further recruitment. According to the Obama Administration’s Section
1251 Report to Congress, recapitalization of the nuclear weapons infrastructure would cost $8.4 billion in FY 2014. In reality, the National Nuclear Security Administration received about $0.6 billion. Since 1993, the DOE has not had a facility dedicated to production of plutonium pits, one of the main components of U.S. nuclear weapons. The U.S. currently keeps about 5,000 plutonium pits in a strategic reserve. There are significant disagreements as to the effect of aging on U.S. pits and whether the U.S. will be able to maintain them indefinitely without nuclear weapons testing. Currently, the U.S. can produce about 20 plutonium pits a year. Russia, the closest U.S. competitor and potential adversary, can produce around 2,000 pits a year.

Manufacturing non-nuclear components can be extremely challenging either because some materials may no longer exist or because manufacturing processes have been forgotten and must be retrieved. There is a certain element of art to the process of building a nuclear weapon, and such a skill can be acquired and maintained only through actual hands-on experience.

**Grade:** On one hand, the U.S. maintains some of the most advanced nuclear facilities in the world. On the other, their focus is not solely on the nuclear weapon mission. Some parts of the complex have not been modernized since the 1950s. The U.S. currently does not have a viable long-term infrastructure recapitalization plan, in part because of the uncertain effects of the budget sequestration. Thus, the infrastructure received a “weak” grade.

**Quality of People Working in the National Nuclear Laboratories Score: Marginal**

Combined with nuclear facilities, U.S. nuclear weapons scientists and engineers are critical to the health of the complex and the stockpile. The 2010 NPR emphasizes that:

[A] highly skilled workforce [is] needed to ensure the long-term safety, security, and effectiveness of our nuclear arsenal and to support the full range of nuclear security work to include non-proliferation, nuclear forensics, nuclear, counter-terrorism, emergency management, intelligence analysis and treaty verification.

The U.S.’s ability to maintain and attract a high-quality workforce has serious implications for the future of the U.S. nuclear deterrent.

The U.S. currently relies on non-yield–producing laboratory experiments, flight tests, and the judgment of experienced nuclear scientists and engineers to ensure continued confidence in the safety, security, and effectiveness of its nuclear deterrent. Without their insights and work, the U.S. nuclear weapons complex could not function. A basic problem is that there are now few scientists or engineers at the NNSA that have either nuclear weapons design or testing experience. It is essential that the complex attract and retain the best and brightest. Between 2013 and 2014, the NNSA lost 94 people of a total of 2,446 employed as of March 2014. The average age of the workforce increased to 47.7 years.

**Grade:** Despite employing world-class experts, the NNSA complex continues to face serious challenges when it comes to talent attraction and retention. Almost all nuclear weapon scientists and engineers are retired, which means that nuclear warhead certifications will rely on the judgments of people who have never tested or designed a nuclear weapon. The NNSA’s management challenges and a lack of focus on the nuclear weapon mission contribute to the lowering of morale in the NNSA complex. Because these issues have to do more with policy than with the quality of people per se, the complex earns a “marginal” score.

**Readiness of Forces Score: Marginal**

The readiness of forces is a vital component of the U.S.’s strategic forces. It is essential that the military personnel operating the three legs of the nuclear triad are properly trained and equipped. It is also essential that these systems be maintained in a high state of readiness.

During FY 2014, the services realigned resources to preserve U.S. strategic capabilities in the short term, but the long-term impacts are uncertain. Continued decline in U.S. general forces could eventually affect nuclear forces, especially the bomber leg of the nuclear triad. The Air Force is already facing morale issues and is under yet another Secretary of Defense–mandated review prompted by a string of ICBM airmen scandals.

**Grade:** Morale issues and uncertainty regarding the further potential impacts of sequestration earn this indicator a “marginal” grade.

**Allied Assurance Score: Strong**

The number of weapons that U.S. allies keep is an important element when speaking about the credi-
bility of U.S. extended deterrence. Allies that already have nuclear weapons can coordinate action with other powers or act independently. During the Cold War, the U.S. and the U.K. cooperated to the point where joint targeting was included. France maintains its own independent nuclear arsenal. How U.S. allies conduct their nuclear policies has direct implications for U.S. strategy. The U.S. also deploys gravity bombs to Europe as a visible manifestation of its commitment to its NATO allies.

The U.S., however, must concern itself not just with allied nuclear nations, but with non-nuclear partners as well. The United States provides nuclear assurances to other nations around the world, most notably Japan and South Korea, both of which are technologically advanced industrial economies facing nuclear-armed adversaries and potential adversaries. If they do not perceive U.S. assurances as credible, they have the capability and know-how to build their own nuclear weapons. That would be a major setback for U.S. nonproliferation policies.

**Grade:** At this time, no U.S. allies are seriously considering developing their own nuclear weapons. European members of NATO continue to express their commitment to and appreciation for NATO as a nuclear alliance. Doubts about the modernization of dual-capable aircraft and even about the weapons themselves, as well as NATO’s lack of attention to the nuclear mission and its intellectual underpinning, preclude assigning a score of “very strong.” Thus, allied assurance merits a “strong” grade.

**Nuclear Test Readiness Score: Weak**

Testing is one of the key elements of maintaining a safe, secure, and effective nuclear weapons deterrent. While the U.S. is currently under a self-imposed nuclear moratorium, it maintains nuclear test readiness at the Nevada National Security Site (formerly Nevada Test Site). This is critical in case the U.S. discovers a flaw in one or more types of its nuclear weapons and when fixing the flaw requires a yield-producing experiment. The U.S. might need to test to develop a weapon with new characteristics that can be validated only by testing and to verify render-safe procedures. Yield-producing experiments can also play an important role if the U.S. needs to react strongly to other nations’ nuclear weapons tests and communicate its resolve or to understand their new nuclear weapons.

For these reasons, it is required that the U.S. be prepared to conduct a nuclear weapons test within a maximum of 36 months after a presidential decision to do so. The current state of test readiness is between 24 and 36 months, although both the NNSA and Congress required the NNSA to be ready within 18 months in the past. The U.S. could meet this requirement only if certain domestic regulations, agreements, and laws were to be waived.

Test readiness refers to a single or a very short series of tests, not a sustained nuclear testing program. The NNSA has been unable to achieve this goal because of a shortage of resources. The test readiness program is supported by experimental programs at the Nevada Test Site, nuclear laboratory experiments, and advanced diagnostics development.

**Grade:** The U.S. can meet the readiness requirement mandated by the law only if certain laws are waived. In addition, the U.S. is not prepared to sustain testing activities beyond a few limited experiments, which certain scenarios might require. Thus, testing readiness earned a “weak” grade.

**Overall U.S. Nuclear Weapons Capability Score: Marginal**

Averaging the subscores across the nuclear enterprise results in an overall score of “marginal.” Though modernization programs for warheads and delivery systems are quite deficient, the infrastructure supporting nuclear programs is aged, and nuclear test readiness has revealed troubling problems within the forces, those weak spots are offset by strong delivery platform reliability and allies who remain confident in the U.S. nuclear umbrella.
### U.S. Military Power: Nuclear

<table>
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<tr>
<th>Category</th>
<th>Very Weak</th>
<th>Weak</th>
<th>Marginal</th>
<th>Strong</th>
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<td>✔</td>
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<td>Warhead Modernization</td>
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<td>Delivery Systems Modernization</td>
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<td>National Labs Talent</td>
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<td>Nuclear Test Readiness</td>
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<td><strong>OVERALL</strong></td>
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<td>✔</td>
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Endnotes:


2. Ibid., p. 8.


4. The United States has not had to contend in combat with any credible opposing air force since the Vietnam War, but U.S. air planners are increasingly concerned about an enemy’s ground-based, anti-air missile capability. For naval planners, ship-based, air-based, and shore-based anti-ship cruise missiles are of much greater concern than the number of conventional surface combatants armed with large-caliber guns that an enemy navy has. Likewise, ground forces have to consider the numbers and types of guided anti-armor weapons that the enemy possesses or whether the opposing force has guided artillery, mortar, or rocket capabilities. Guided/precision weapons are less expensive (by orders of magnitude) than the platforms they target, which means that countries can produce far more guided munitions than primary weapons platforms. Some examples: Harpoon ASCM ($2 million)/DDG-51 Arleigh Burke-Class destroyer ($2 billion); AT4 anti-armor weapon ($1,500)/M1A1 Abrams main battle tank ($9 million); 120mm guided mortar round ($10,000) or 155mm guided artillery round ($100,000)/M198 155mm howitzer ($500,000); S-300 anti-air missile ($1 million)/F/A-18 Hornet ($60 million) or F-35A Lightning II ($180 million).


6. Ibid., p. 4 (emphasis in original).


8. Defense references to war have varied over the past few decades from “major combat operations” (MCO) and “major theater war” (MTW) to the current “major regional contingency” (MRC). Arguably, there is a supporting argument for such shifts as planners attempt to find the best words to describe the scope and scale of significant military efforts, but the terms are basically interchangeable.

9. The U.S. Marine Corps and U.S. Navy have Reserve components but no National Guard equivalents to those of the Army and Air Force. The Marine Corps’ Reserve elements are units with equipment, structured similarly to their Active-component counterparts, while the Navy’s Reserve force consists of people but not ships. The entirety of the Navy’s combat fleet, surface and subsurface, is in the Active component.

10. The Department of Defense, through the Joint Staff and Geographic Combatant Commanders, manages a relatively small set of real-world operational plans (OPLANS) focused on specific situations where the U.S. feels it is most likely to go to war. These plans are reviewed and updated regularly to account for changes in the Joint Force or with the presumed enemy. They are highly detailed and account not only for the amount of force the U.S. expects it will need to defeat the enemy, but also for which specific units would deploy; how the force would actually flow into the theater (the sequencing of units); what ports and airfields it would use; how much ammunition, fuel, and other supplies it would need at the start; how much transportation or “lift” would be needed to get the force there (by air, sea, trucks, or rail); and the basic plan of attack. The Pentagon also routinely develops, explores, and refines various notional planning scenarios in order to better understand the implications of different sorts of contingencies, which approaches might be more effective, how much of what type of force might be needed, and the regional issue or issues for which there would have to be an accounting. These types of planning events inform service efforts to develop, equip, train, and field military forces that are up to the task of defending national security interests. All of these efforts and their products are classified national security information and therefore not available to the public.


12. Original statements indicated that force reductions would occur until FY 2017. This latest force posture statement indicates that the target reduction to 490,000 will be accomplished by FY 2015.


17. Ibid.

19. Ibid.
27. Ibid., p. 28.
28. Ibid.
29. Note that the first figures derive from an average BCT size of 4,500 and average division size of 15,000. The second set of numbers derives from the current average of around 3.5 BCTs per division and analysis of the structure of each Army division.
30. Freedberg, “New Army Vice ‘Extremely Concerned’ on Readiness.”
34. Ibid.
36. This would be the first change since 1981. The change will now include ships that are often requested by COCOMS, specifically 10 Patrol Craft Cyclone (PC-1), two hospital ships, and one high-speed transport. It would exclude three MCMs because they are not self-deployable. Ronald O’Rourke, “Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress,” Congressional Research Service, August 1, 2014, pp. 17–18, http://fas.org/sgp/crs/weapons/RL32665.pdf (accessed August 12, 2014).
38. U.S. Department of the Navy, Office of the Chief of Naval Operations, Deputy Chief of Naval Operations (Integration of Capabilities and Resources), Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for FY2014, May 2013, p.11, http://projects.militarytimes.com/pdfs/USN-Plan-FY2014.pdf (accessed August 12, 2014). If the new counting rules are to be applied retroactively, the ship count will be 289. Getting the exact Battle Force ship count is problematic because the Navy will often report different numbers. This is partly due to changes in ship inventory during the year (for example, a ship’s being delivered). Other times, the Navy is not consistent or is obscure as to how they are counting ships. For references on different ship counts, see Greenert, “FY 2015 Department of the Navy Posture,” p. 3.
44. Eleven cruisers will also be placed in “Reduced Operating Status” but will be included in the ship count as they are not being retired.
47. Rotational deployments involve a ship sailing to a location for a set amount of time and returning to the United States.
49. On average, rotational deployments require four ships for one ship being forward deployed. This is because one ship is sailing out to location, one is at location, one is sailing back to the CONUS, and one is in the CONUS for maintenance.
52. There are four shipbuilders and seven shipyard locations that build major naval vessels. The four shipbuilders are General Dynamics, Huntington Ingalls, Austal USA, and Marinette Marine Corporations. General Dynamics has three shipyards, Huntington Ingalls has two, and the remaining two shipbuilders have one each.
56. O’Rourke, “Navy Force Structure and Shipbuilding Plans.”
58. Staff Writer, “Navy Aircraft,” Military Factory, last updated March 5, 2014, http://www.militaryfactory.com/ aircraft/navy-carrier-aircraft.asp (accessed August 26, 2014). The last of each of these aircraft were retired in 1997 (A-6); 2003 (A-4); and 2006 (F-14).
61. Ibid., p. 3.
62. Ibid.
63. Ibid.
64. Ibid.
65. This requirement is derived from the BUR’s requirement for 4-5 carrier strike groups per MRC; however, this Index finds that number low by historical accounts and recommends one additional carrier per MRC.
68. The full array of aircraft actually embarked on a carrier is more than just the strike aircraft counted here and includes E-2 Hawkeye early warning, C-2 Greyhound cargo, and various helicopter aircraft, among others, that are fielded in a ratio that is roughly proportional to the number of aircraft carriers in the fleet.
70. The size and capability of amphibious ships have also grown over time, with smaller amphibs like the old LST replaced by the much larger LSD and LPD classes. Consequently, fewer ships are needed to lift the same or even larger amphibious force.
75. Ibid., p. 6.


83. Ibid., p. 7.


86. “USAF Almanac 2014.”


92. Ibid.


95. Ibid., p. 3.


97. Ibid.


102. Ibid., p. 12.

103. Ibid.

104. Ibid.


107. Ibid. p. 10.


111. This count is based on the average number of divisions deployed to major wars (1.5) and an average of 10–11 battalions per division.


113. Ibid.


120. Ibid.


130. Ibid.


152. Ibid.
# Glossary of Terms and Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>A2/AD</td>
<td>anti-access/area-denial</td>
</tr>
<tr>
<td>AAV</td>
<td>Amphibious Assault Vehicle</td>
</tr>
<tr>
<td>ADIZ</td>
<td>Air Defense Identification Zone</td>
</tr>
<tr>
<td>AEHF</td>
<td>Advanced Extremely High Frequency (satellite system)</td>
</tr>
<tr>
<td>AEW</td>
<td>airborne early warning</td>
</tr>
<tr>
<td>AFAFRICA</td>
<td>U.S. Air Forces Africa</td>
</tr>
<tr>
<td>AFP</td>
<td>Armed Forces of the Philippines</td>
</tr>
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<td>AFRICOM</td>
<td>U.S. Africa Command</td>
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<td>AFSOC</td>
<td>U.S. Air Force Special Operations Command</td>
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<td>AMDR</td>
<td>Air and Missile Defense Radar</td>
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<tr>
<td>AN/TPY-2</td>
<td>Army Navy/Transportable Radar Surveillance</td>
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<td>ANZUS</td>
<td>Australia–New Zealand–U.S. Security Treaty</td>
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<tr>
<td>AOR</td>
<td>area of responsibility</td>
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<tr>
<td>APC</td>
<td>armored personnel carrier</td>
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<tr>
<td>AQAP</td>
<td>al-Qaeda in the Arabian Peninsula</td>
</tr>
<tr>
<td>AQIM</td>
<td>al-Qaeda in the Islamic Maghreb</td>
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<tr>
<td>ARG</td>
<td>amphibious ready group</td>
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<tr>
<td>ASW</td>
<td>anti-submarine warfare</td>
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<td>anti-surface warfare</td>
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<td>air warfare</td>
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### 2015 INDEX OF U.S. MILITARY STRENGTH

**B**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>BCA</td>
<td>Budget Control Act of 2011</td>
</tr>
<tr>
<td>BCT</td>
<td>brigade combat team</td>
</tr>
<tr>
<td>BDCA</td>
<td>border defense cooperation agreement</td>
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<tr>
<td>BMD</td>
<td>ballistic missile defense</td>
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<tr>
<td>BUR</td>
<td>Bottom-Up Review</td>
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**C**

<table>
<thead>
<tr>
<th>Acronym</th>
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<tr>
<td>C2</td>
<td>command and control</td>
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<tr>
<td>C4ISR</td>
<td>command, control, communications, computers, and intelligence, surveillance, and reconnaissance</td>
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<tr>
<td>CA</td>
<td>civil affairs</td>
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<tr>
<td>CAB</td>
<td>combat air brigade</td>
</tr>
<tr>
<td>CCT</td>
<td>Combat Controller</td>
</tr>
<tr>
<td>CELAC</td>
<td>Community of Latin American and Caribbean States</td>
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<td>CENTCOM</td>
<td>U.S. Central Command</td>
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<td>Central Intelligence Agency</td>
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<td>Combined Joint Task Force-Horn of Africa</td>
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<td>CMRR</td>
<td>Chemistry and Metallurgy Research Replacement</td>
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<td>Combatant Command</td>
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<td>CONUS</td>
<td>continental United States</td>
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<td>carrier strike group</td>
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<td>CSO</td>
<td>Critical Skills Operator</td>
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<td>counterterrorism</td>
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<td>Combined Task Force</td>
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<td><strong>D</strong></td>
<td><strong>Definition</strong></td>
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<tr>
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</tr>
<tr>
<td>DA-KKV</td>
<td>direct-ascent kinetic-kill vehicle</td>
</tr>
<tr>
<td>DDPR</td>
<td>Deterrence and Defense Posture Review</td>
</tr>
<tr>
<td>DMZ</td>
<td>demilitarized zone</td>
</tr>
<tr>
<td>DNI</td>
<td>Director of National Intelligence</td>
</tr>
<tr>
<td>DOD</td>
<td>U.S. Department of Defense</td>
</tr>
<tr>
<td>DOS</td>
<td>denial of service</td>
</tr>
<tr>
<td>DDOS</td>
<td>distributed denial of service</td>
</tr>
<tr>
<td>DPRK</td>
<td>Democratic People's Republic of Korea (North Korea)</td>
</tr>
<tr>
<td>DSR</td>
<td>Defense Strategic Review</td>
</tr>
<tr>
<td><strong>E</strong></td>
<td><strong>Definition</strong></td>
</tr>
<tr>
<td>EDCA</td>
<td>Enhanced Defense Cooperation Agreement</td>
</tr>
<tr>
<td>EEZ</td>
<td>exclusive economic zone</td>
</tr>
<tr>
<td>EOD</td>
<td>explosive ordinance disposal</td>
</tr>
<tr>
<td>EMP</td>
<td>electromagnetic pulse</td>
</tr>
<tr>
<td>ESG</td>
<td>Expeditionary Strike Group</td>
</tr>
<tr>
<td>EUCOM</td>
<td>U.S. European Command</td>
</tr>
<tr>
<td>EW</td>
<td>electronic warfare</td>
</tr>
<tr>
<td><strong>F</strong></td>
<td><strong>Definition</strong></td>
</tr>
<tr>
<td>FCS</td>
<td>Future Combat Systems</td>
</tr>
<tr>
<td>FTA</td>
<td>free trade agreement</td>
</tr>
<tr>
<td><strong>G</strong></td>
<td><strong>Definition</strong></td>
</tr>
<tr>
<td>GCC</td>
<td>geographic combatant commander</td>
</tr>
<tr>
<td>GCC</td>
<td>Gulf Cooperation Council</td>
</tr>
<tr>
<td>GCV</td>
<td>Ground Combat Vehicle</td>
</tr>
<tr>
<td>GFMAP</td>
<td>Global Force Management Allocation Plan</td>
</tr>
<tr>
<td>GEO</td>
<td>geosynchronous orbit</td>
</tr>
<tr>
<td>GPF</td>
<td>general purpose forces</td>
</tr>
<tr>
<td>GPS</td>
<td>Global Positioning System</td>
</tr>
<tr>
<td>Acronym</td>
<td>Definition</td>
</tr>
<tr>
<td>---------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>HA/DR</td>
<td>humanitarian assistance/disaster relief</td>
</tr>
<tr>
<td>HEO</td>
<td>highly elliptical orbit</td>
</tr>
<tr>
<td>ICBM</td>
<td>intercontinental ballistic missile</td>
</tr>
<tr>
<td>ICS</td>
<td>industrial control systems</td>
</tr>
<tr>
<td>IDF</td>
<td>Israel Defense Forces</td>
</tr>
<tr>
<td>IFV</td>
<td>infantry fighting vehicle</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>INEW</td>
<td>Integrated Network Electronic Warfare</td>
</tr>
<tr>
<td>INF</td>
<td>Intermediate-Range Nuclear Forces (treaty)</td>
</tr>
<tr>
<td>IOC</td>
<td>initial operating capability</td>
</tr>
<tr>
<td>IRGC</td>
<td>Islamic Revolutionary Guard Corps</td>
</tr>
<tr>
<td>ISAF</td>
<td>International Security Assistance Force</td>
</tr>
<tr>
<td>ISIS</td>
<td>Islamic State of Iraq and Syria</td>
</tr>
<tr>
<td>ISR</td>
<td>intelligence, surveillance, and reconnaissance</td>
</tr>
<tr>
<td>JOAC</td>
<td>Joint Operational Access Concept</td>
</tr>
<tr>
<td>JSF</td>
<td>Joint Strike Fighter (F-35 Lightning II)</td>
</tr>
<tr>
<td>JSOC</td>
<td>Joint Special Operations Command</td>
</tr>
<tr>
<td>JSTAR</td>
<td>Joint Surveillance and Target Attack Radar System</td>
</tr>
<tr>
<td>JLTV</td>
<td>Joint Light Tactical Vehicle</td>
</tr>
<tr>
<td>JTF North</td>
<td>Joint Task Force North</td>
</tr>
<tr>
<td>L</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LAF</td>
<td>Lebanese Armed Forces</td>
</tr>
<tr>
<td>LCS</td>
<td>littoral combat ship</td>
</tr>
<tr>
<td>LeT</td>
<td>Lashkar-e-Taiba</td>
</tr>
<tr>
<td>LHA</td>
<td>landing helicopter assault (amphibious ship)</td>
</tr>
<tr>
<td>LHD</td>
<td>landing helicopter dock (amphibious ship)</td>
</tr>
<tr>
<td>LNG</td>
<td>liquefied natural gas</td>
</tr>
<tr>
<td>LoC</td>
<td>Line of Control</td>
</tr>
<tr>
<td>LPD</td>
<td>landing platform/dock or amphibious transport dock (amphibious ship)</td>
</tr>
<tr>
<td>LRA</td>
<td>Lord’s Resistance Army</td>
</tr>
<tr>
<td>LSD</td>
<td>landing ship, dock (amphibious ship)</td>
</tr>
<tr>
<td>M</td>
<td></td>
</tr>
<tr>
<td>MAGTF</td>
<td>Marine Air-Ground Task Force</td>
</tr>
<tr>
<td>MANPADS</td>
<td>man-portable air-defense systems</td>
</tr>
<tr>
<td>MARCENT</td>
<td>U.S. Marine Corps Forces Central Command</td>
</tr>
<tr>
<td>MARFORAF</td>
<td>U.S. Marine Corps Forces Africa</td>
</tr>
<tr>
<td>MARFOREUR</td>
<td>U.S. Marine Corps Forces Europe and Africa</td>
</tr>
<tr>
<td>MARFORPAC</td>
<td>U.S. Marine Corps Forces, Pacific</td>
</tr>
<tr>
<td>MARSOC</td>
<td>U.S. Marine Corps Special Operations Command</td>
</tr>
<tr>
<td>MCM</td>
<td>mine countermeasure (ship)</td>
</tr>
<tr>
<td>MCO</td>
<td>major combat operation (see MRC, MTW)</td>
</tr>
<tr>
<td>MCMV</td>
<td>mine countermeasure vessel (ship)</td>
</tr>
<tr>
<td>MDAP</td>
<td>Major Defense Acquisition Program</td>
</tr>
<tr>
<td>MEB</td>
<td>Marine Expeditionary Brigade</td>
</tr>
<tr>
<td>MISO</td>
<td>Military Information Special Operations</td>
</tr>
<tr>
<td>MNLA</td>
<td>National Movement for the Liberation of Azawad</td>
</tr>
<tr>
<td>MNLF</td>
<td>Moro National Liberation Front</td>
</tr>
<tr>
<td>MNNA</td>
<td>major non-NATO ally</td>
</tr>
<tr>
<td>MOJWA</td>
<td>Movement for Oneness and Jihad in West Africa</td>
</tr>
<tr>
<td>MRC</td>
<td>major regional conflict (see MTW, MCO)</td>
</tr>
<tr>
<td>MRAP</td>
<td>Mine-Resistant Ambush-Protected (vehicle)</td>
</tr>
<tr>
<td>MRBM</td>
<td>medium-range ballistic missile</td>
</tr>
<tr>
<td>MTW</td>
<td>major theater war (see MCO, MRC)</td>
</tr>
</tbody>
</table>
### NATO
- **NATO**: North Atlantic Treaty Organization

### NAVAF
- **NAVAF**: U.S. Naval Forces Africa

### NAVEUR
- **NAVEUR**: U.S. Naval Forces Europe

### NDN
- **NDN**: Northern Distribution Network

### NDP
- **NDP**: National Defense Panel

### New START
- **New START**: New Strategic Arms Reduction Treaty

### NNSA
- **NNSA**: National Nuclear Security Administration

### NPR
- **NPR**: Nuclear Posture Review

### NPRIS
- **NPRIS**: Nuclear Posture Review Implementation Study

### NSWC
- **NSWC**: Naval Special Warfare Command

### OAS
- **OAS**: Organization of American States

### OCO
- **OCO**: overseas contingency operations

### OEF
- **OEF**: Operation Enduring Freedom

### OIF
- **OIF**: Operation Iraqi Freedom

### ONA
- **ONA**: Office of Net Assessment

### OPCON
- **OPCON**: operational control

### PACAF
- **PACAF**: U.S. Pacific Air Forces

### PACOM
- **PACOM**: U.S. Pacific Command

### PACFLT
- **PACFLT**: U.S. Pacific Fleet

### PKO
- **PKO**: peacekeeping operation

### PLA
- **PLA**: People’s Liberation Army

### PLAAF
- **PLAAF**: People’s Liberation Army Air Force

### PLAN
- **PLAN**: People’s Liberation Army Navy

### PNI
- **PNI**: Presidential Nuclear Initiative

### PNT
- **PNT**: positioning, navigation, and timing

### PRC
- **PRC**: People’s Republic of China

### PSF
- **PSF**: Peninsular Shield Force
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QDR</td>
<td>Quadrennial Defense Review</td>
</tr>
<tr>
<td>QNSTR</td>
<td>Quadrennial National Security Threats and Trends</td>
</tr>
<tr>
<td>RCOH</td>
<td>refueling and complex overhaul (nuclear-powered ship)</td>
</tr>
<tr>
<td>RDJTF</td>
<td>Rapid Deployment Joint Task Force</td>
</tr>
<tr>
<td>ROK</td>
<td>Republic of Korea (South Korea)</td>
</tr>
<tr>
<td>SAM</td>
<td>surface-to-air missile</td>
</tr>
<tr>
<td>SAR</td>
<td>search and rescue</td>
</tr>
<tr>
<td>SBIRS</td>
<td>Space-Based Infrared System (satellite system)</td>
</tr>
<tr>
<td>SCN</td>
<td>Shipbuilding and Conversion, Navy (budget category)</td>
</tr>
<tr>
<td>SEAL</td>
<td>Sea Air Land operator (Navy)</td>
</tr>
<tr>
<td>SEATO</td>
<td>Southeast Asia Treaty Organization</td>
</tr>
<tr>
<td>SIGINT</td>
<td>signals intelligence</td>
</tr>
<tr>
<td>SLBM</td>
<td>submarine-launched ballistic missile</td>
</tr>
<tr>
<td>SMU</td>
<td>special mission unit</td>
</tr>
<tr>
<td>SOCAFRICA</td>
<td>U.S. Special Operations Command Africa</td>
</tr>
<tr>
<td>SOCCENT</td>
<td>U.S. Special Operations Command Central</td>
</tr>
<tr>
<td>SOCEUR</td>
<td>U.S. Special Operations Command Europe</td>
</tr>
<tr>
<td>SOCPAC</td>
<td>U.S. Special Operations Command Pacific</td>
</tr>
<tr>
<td>SOF</td>
<td>U.S. Special Operations Forces</td>
</tr>
<tr>
<td>SORT</td>
<td>Strategic Offensive Reductions Treaty</td>
</tr>
<tr>
<td>SRBM</td>
<td>short-range ballistic missile</td>
</tr>
<tr>
<td>SSBN</td>
<td>ballistic missile submarine, nuclear-powered</td>
</tr>
<tr>
<td>SSGN</td>
<td>guided missile submarine, nuclear-powered</td>
</tr>
<tr>
<td>SSN</td>
<td>attack submarine, nuclear-powered</td>
</tr>
<tr>
<td>SSP</td>
<td>Stockpile Stewardship Program</td>
</tr>
<tr>
<td>STRATCOM</td>
<td>U.S. Strategic Command</td>
</tr>
<tr>
<td>SUW</td>
<td>surface warfare</td>
</tr>
</tbody>
</table>
### T
- **TACAIR** tactical air
- **TCO** transnational criminal organization
- **TLAM/N** Tomahawk Land Attack Missile/Nuclear
- **TNW** tactical nuclear weapon
- **TRA** Taiwan Relations Act
- **TRANS.COM** U.S. Transportation Command
- **TSOC** Theater Special Operations Command

### U
- **UAV** unmanned aerial vehicle
- **UNASUR** Unión de Naciones Suramericanas (Union of South American Nations)
- **USAF** U.S. Air Force
- **USAFCENT** U.S. Air Forces Central
- **SAFE** U.S. Air Forces Europe
- **USARAF** U.S. Army Africa
- **USARCENT** U.S. Army Central
- **USARPAC** U.S. Army Pacific
- **USAREUR** U.S. Army Europe
- **USASOC** U.S. Army Special Operations Command
- **USFJ** U.S. Forces Japan
- **USFK** U.S. Forces Korea
- **USNAVCENT** U.S. Naval Forces Central
- **USNORTHCOM** U.S. Northern Command
- **USSOCOM** U.S. Special Operations Command
- **USSOUTHCOM** U.S. Southern Command
- **USW** undersea warfare

### V
- **VLS** vertical launching system

### W
- **WGS** Wideband Global SATCOM (satellite system)
- **WMD** weapons of mass destruction
- **WWTA** Worldwide Threat Assessment
The assessment portion of the Index of U.S. Military Strength is composed of three major sections that address America’s military power, the operating environments within or through which it must operate, and threats to U.S. vital national interests.

The authors of this study used a five-category scoring system that ranged from “very poor” to “excellent” or “very weak” to “very strong” as appropriate to each topic. This particular approach was selected to capture meaningful gradations while avoiding the appearance that a high level of precision was possible given the nature of the issues and the information that was publicly available.

Some factors are quantitative and lend themselves to discrete measurement; others are very qualitative in nature and can be assessed only through an informed understanding of the material that leads to a judgment call. While this is not entirely satisfactory when it comes to reaching conclusions on the status of a given matter, especially the adequacy of military power (and will be quite unsatisfactory for some readers), we understand that senior officials in decision-making positions will never have a comprehensive set of inarguable hard data on which to base a decision.

Purely quantitative measures alone tell only part of the story when it comes to the relevance, utility, and effectiveness of hard power. In fact, assessing military power or the nature of an operating environment using only quantitative metrics can lead to misinformed conclusions. Raw numbers are a very important component, but they tell only a part of the story of war. On a related note, experience and demonstrated proficiency are often decisive factors in war, but they are nearly impossible to measure.

This Index’s assessment of the global operating environment focused on three key regions—Europe, the Middle East, and Asia—because of their importance relative to U.S. vital security interests.

For threats to U.S. vital interests, the Index identifies the countries that pose the greatest current or potential threats to U.S. vital interests based on two overarching factors: their behavior and their capability. The classic definition of “threat” considers the combination of intent and capability, but intent cannot be clearly measured, so “observed behavior” is used as a reasonable surrogate since it is the clearest manifestation of intent. The selection of threat countries is based on their historical behavior and explicit policies or formal statements vis-à-vis U.S. interests, scoring them in two areas: the degree of provocative behavior they exhibited during the year and their ability to pose a credible threat to U.S. interests irrespective of intent.

Finally, the status of U.S. military power is addressed in three areas: capability (or modernity), capacity, and readiness. All three are fundamental to success even if they are not de facto determinants of success, something we explain further in the section. Also addressed is the condition of the United States’ nuclear weapons capability, assessing it in areas that are unique to this military component and critical to understanding its real-world viability and effectiveness as a strategic deterrent.
Assessing the Global Operating Environment

Not all of the factors that characterize an operating environment are equal, but each contributes to the degree in which a particular operating environment is favorable or unfavorable toward future U.S. military operations. Our assessment of the operating environment utilized a five-point scale, ranging from “very poor” to “excellent” conditions and covering four regional characteristics of greatest relevance to the conduct of military operations:

1. **Alliances.** Alliances are important for interoperability and collective defense as allies would be more likely to lend support to U.S. military operations. There are various indicators that give insight into the strength or health of an alliance. These include whether the U.S. trains regularly with countries in the region and has good interoperability with the forces of an ally, and whether the U.S. shares intelligence with nations in the region.

2. **Political Stability.** Political stability brings predictability for military planners when considering such matters as transit, basing, and overflight rights for U.S. military operations. Relevant considerations include whether the region’s overall political stability indicates that U.S. military actions would be hindered or enabled, whether transfers of power in the region are generally peaceful, and whether there have there been any recent instances of political instability in the region.

3. **U.S. Military Positioning.** Having military forces based or equipment and supplies staged in a region greatly facilitates the United States’ ability to respond to crises and, presumably, achieve successes in critical “first battles” more quickly. Being routinely present in a region also assists in maintaining familiarity with its characteristics and the various actors that might try to assist or thwart U.S. actions. With this in mind, we assessed whether or not the U.S. military was well-positioned in the region. Again, indicators included bases, troop presence, prepositioned equipment, and recent examples of military operations (including training and humanitarian) launched from the region.

4. **Infrastructure.** Modern, reliable, and suitable infrastructure is essential to military operations. Airfields, ports, rail lines, canals, and paved roads enable the U.S. to stage and launch operations and logistically sustain combat operations. We combined expert knowledge of regions with publicly available information on critical infrastructure to arrive at our overall assessment of this metric.

Each regional characteristic was assessed as follows:

1. **Very Poor:** Significant hurdles exist for military operations. Physical infrastructure is insufficient or nonexistent, and the region is politically unstable. In addition, the U.S. military is poorly placed or absent, and alliances are nonexistent or diffuse.

2. **Unfavorable:** A challenging operating environment is marked by inadequate infrastructure, weak alliances, and recurring political instability. The U.S. military is inadequately placed in the region.

3. **Moderate:** The operating environment is neutral to moderately favorable, with adequate infrastructure, a moderate alliance structure, and acceptable levels of political stability in the region. The U.S. military is adequately placed.

4. **Favorable:** The operating environment includes good infrastructure, strong alliances, and a stable political environment. The U.S. military is well placed in the region for future operations.

5. **Excellent:** The region has a well-established and well-maintained infrastructure, strong and capable allies, and a stable political environment. The U.S. military is exceptionally well placed to defend U.S. interests.

Assessing Threats to U.S. Vital Interests

To make the threats identified herein measurable and relatable to the challenges of operating environments and adequacy of American military power, Index staff and outside reviewers evaluated separately the threats according to their level of provocation (i.e., their observed behavior) and their actual capability to pose a credible threat to U.S. interests.
on a scale of 1 to 5, with 1 representing a very high threat capability or level of belligerency. This scale corresponds to the tone of the five-point scales used to score the operating environment and military capabilities in that 1 is bad for U.S. interests and 5 is very favorable.

Based on these evaluations, provocative behavior was characterized according to five descending categories: benign (5); assertive (4); testing (3); aggressive (2); and hostile (1). Staff also characterized the capabilities of a threat actor according to five categories: marginal (5); aspirational (4); capable (3); gathering (2); and formidable (1). Those characterizations—behavior and capability—form two halves of the overall threat level.

Assessing U.S. Military Power

Also assessed is the adequacy of the United States’ defense posture as it pertains to a conventional understanding of “hard power,” defined as the ability of American military forces to engage and defeat an enemy’s forces in battle at a scale commensurate with the vital national interests of the U.S. The assessment draws on both quantitative and qualitative aspects of military forces, informed by an experience-based understanding of military operations and the expertise of external reviewers.

It is important to note that military effectiveness is as much an art as it is a science. Specific military capabilities represented in weapons, platforms, and military units can be used individually to some effect. Practitioners of war, however, have learned that combining the tools of war in various ways and orchestrating their tactical employment in series or simultaneously can dramatically amplify the effectiveness of the force committed to battle.

The point here is that a great number of factors make it possible for a military force to locate, close with, and destroy an enemy, but not many of them are easily measured. The scope of this specific project does not extend to analysis of everything that makes hard power possible; it focuses on the status of the hard power itself.

This Index assesses the state of military affairs for U.S. forces in three areas: capability, capacity, and readiness.

Capability. Capability is scored based on the current state of combat equipment. This involves four factors: the age of key platforms relative to their expected life span; whether the required capability is being met by legacy or modern equipment; the scope of improvement or replacement programs relative to the operational requirement; and the overall health and stability (financial and technological) of modernization programs.

This Index focused on primary combat units and combat platforms (e.g., tanks, ships, and airplanes) and elected not to include the array of system and component upgrades that keep an older platform viable over time, such as a new radar, missile, or communications suite. New technologies grafted onto aging platforms ensure that U.S. military forces keep pace with technological innovations relevant to the modern battlefield, but at some point, the platforms themselves are no longer viable and must be replaced. Modernized sub-systems and components do not entirely substitute for aging platforms, and it is the platform itself that is usually the more challenging item to field. In this sense, primary combat platforms serve as representative measures of force modernity just as combat forces are a useful surrogate measure for the overall military that includes a range of support units, systems, and infrastructure.

In addition, it is assumed that modernization programs should replace current capacity at a one-to-one ratio; less than a one-to-one replacement assumes risk in that even if the newer system is presumably better than the older, until proven in actual combat, having fewer systems lessens the capacity of the force, which is an important factor if combat against a peer competitor carries with it the likelihood of attrition. For modernization programs, only Major Defense Acquisition Programs (MDAPs) are scored.

The capability score uses a five-grade scale. Each service receives one capability score that is a non-weighted aggregate of scores for four categories: (1) Age of Equipment, (2) Modernity of Capability, (3) Size of Modernization Program, and (4) Health of Modernization Program. General criteria for the capability categories are:

Age of Equipment
- **Very Weak:** Equipment age is past 80 percent of expected life span.
- **Weak:** Equipment age is 61 percent–80 percent of expected life span.
- **Marginal**: Equipment age is 41 percent–60 percent of expected life span.
- **Strong**: Equipment age is 21 percent–40 percent of expected life span.
- **Very Strong**: Equipment age is 20 percent or less of expected life span.

**Capability of Equipment**
- **Very Weak**: Majority (over 80 percent) of capability relies on legacy platforms.
- **Weak**: 60 percent–79 percent of capability relies on legacy platforms.
- **Marginal**: 40 percent–59 percent of capability is legacy platforms.
- **Strong**: 20 percent–39 percent of capability is legacy platforms.
- **Very Strong**: Less than 20 percent of capability is legacy platforms.

**Size of Modernization Program**
- **Very Weak**: Modernization program significantly too small or inappropriate to sustain current capability or program in place.
- **Weak**: Modernization programs smaller than current capability size.
- **Marginal**: Modernization programs appropriate to sustain current capability size.
- **Strong**: Modernization programs will increase current capability size.
- **Very Strong**: Modernization programs will vastly expand capability size.

**Health of Modernization Program**
- **Very Weak**: Modernization programs facing significant problems; too far behind schedule (five-plus years); cannot replace current capability before retirement; lacking sufficient investment to advance; cost overruns including Nunn-McCurdy breach. (A Nunn-McCurdy cost breach occurs when the cost of a new item exceeds 25 percent or more over the most recently approved amount or 50 percent or more over the amount originally approved. See Title 10, U.S.C. § 2433, Unit Cost Reports (UCRs).)
- **Weak**: Facing procurement problems; behind schedule (three–five years); difficult to replace current equipment on time or insufficient funding; cost overruns enough to trigger an Acquisition Program Baseline (APB) breach.
- **Marginal**: Facing few problems; behind schedule by one–two years but can replace equipment with some delay or experienced some funding cuts; some cost growth but not within objectives.
- **Strong**: Facing no procurement problems; can replace equipment with no delays; within cost estimates.
- **Very Strong**: Performing better than DOD plans, including lower actual costs.

**Capacity.** To score capacity, the service’s size (be it end strength or number of platforms) is compared to the force size required to meet a simultaneous or near-simultaneous two-war or two-major regional contingency (MRC) benchmark. This benchmark consists of the force needed to fight and win two MRCs and a 20 percent margin that serves as a strategic reserve. A strategic reserve is necessary because deploying 100 percent of the force at any one time is highly unlikely. Not only do ongoing requirements like training or sustainment and maintenance of equipment make it infeasible for the entirety of the force to be available for deployment, but committing 100 percent of the force would leave no resources available to handle unexpected situations.

Thus, a “marginal” capacity score would exactly meet a two-MRC force size, a “strong” capacity score would equate to a plus-10 percent margin for strategic reserve, and a “very strong” score would equate to a 20 percent margin.

**Capacity Score Definitions**
- **Very Weak**: 0 percent–37 percent of the two-MRC benchmark.
- **Weak**: 38 percent–74 percent of the two-MRC benchmark.
• **Marginal:** 75 percent–82 percent of the two-MRC benchmark.

• **Strong:** 83 percent–91 percent of the two-MRC benchmark.

• **Very Strong:** 92 percent–100 percent of the two-MRC benchmark.

**Readiness.** The readiness scores are from the military services’ own assessments of readiness based on their requirements. These are not comprehensive reviews of all readiness input factors, but rather rely on the public statements of the military services regarding the state of their readiness.

It should be noted that even a “strong” or “very strong” score does not indicate that 100 percent of the force is ready; it simply indicates that the service is meeting 100 percent of its own readiness requirements. Often, these requirements assume that a percentage of the military at any one time will not be fit for deployment. Because of this, even if readiness is graded as “strong” or “marginal,” there is still a gap in readiness that will have significant implications for immediate combat effectiveness and the ability to deploy quickly. Thus, anything short of meeting 100 percent of readiness requirements assumes risk and is therefore problematic.

**Readiness Score Definitions**

- **Very Weak:** 0 percent–19 percent of service’s requirements.
- **Weak:** 20 percent–39 percent of service’s requirements.
- **Marginal:** 40 percent–59 percent of service’s requirements.
- **Strong:** 60 percent–79 percent of service’s requirements.
- **Very Strong:** 80 percent–100 percent of service’s requirements.
Appendix: Military Capabilities and Corresponding Modernization Programs
## Army Scores

**Main Battle Tank**

<table>
<thead>
<tr>
<th>Platform</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>Modernization Program</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1A1/2 Abrams</td>
<td></td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 2,330</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 4.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 1980</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Abrams is the main battle tank used by the Army in its armored brigade combat teams (BCTs). The Abrams went through a remanufacture program to extend its life to 2045.

**Infantry Fighting Vehicle**

<table>
<thead>
<tr>
<th>Platform</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>Modernization Program</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 Bradley</td>
<td></td>
<td></td>
<td>N/A—Ground Combat Vehicle (GCV) cancelled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 6,547</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 1981</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Bradley is a tracked infantry fighting vehicle (IFV) meant to transport infantry and provide covering fire. The Bradley complements the Abrams tank in armored BCTs. Originally intended to be replaced by the Ground Combat Vehicle (now canceled), the Bradley underwent a remanufacture program to extend the life of the platform. The Army plans to keep the Bradley in service until 2045.

**Armored Fighting Vehicle**

<table>
<thead>
<tr>
<th>Platform</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>Modernization Program</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stryker</td>
<td></td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 3,604</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 2002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Stryker is a wheeled armored fighting vehicle that makes up the Stryker BCTs. The program was considered an interim vehicle to serve until the arrival of the Future Combat System (FCS), but that program was cancelled due to technology and cost hurdles. The Stryker is undergoing modifications to receive a double-v hull (DVH) to increase survivability. The Stryker is expected to remain in service for 30 years.

**Armored Personnel Carrier**

<table>
<thead>
<tr>
<th>Platform</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>Modernization Program</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>M113 Armored Personnel Carrier</td>
<td></td>
<td></td>
<td>N/A—Armored Multi-Purpose Vehicle (AMPV) not yet a Major Defense Acquisition Program (MDAP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 3,900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 1960</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The M113 is a tracked APC that plays a supporting role for armored BCTs and infantry BCTs. The APC was also to be replaced by the GCV. Plans are to use the platforms to 2045.

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
### Light Wheeled Vehicle

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMMWV</td>
<td>1</td>
<td>1</td>
<td>Joint Light Tactical Vehicle (JLTV)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TIMELINE: 2015–2040</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The HMMWV is a light wheeled vehicle used to transport troops under some level of protection. The expected life span of the HMMWV is 15 years. Some HMMWVs will be replaced by the Joint Light Tactical Vehicle (JLTV).

### Attack Helicopter

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH-64 A-D Apache</td>
<td>2</td>
<td>4</td>
<td>AH-64E Reman</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TIMELINE: 2010–2025</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Apache is an attack helicopter that makes up the Army Combat Aviation Brigades. There are currently two variants, the AH-64A and AH-64D. The AH-64A is being retired. AH-64D makes up the 90 percent of the inventory and entered service in 1998. The expected life cycle is about 20 years.

| AH-64E | 5 | 1 | AH-64E New Build | 3 | 4 |
|        |   |    | TIMELINE: 2013–2026 |            |              |

The AH-64E variant of the Apache is a remanufactured version with substantial upgrades in powerplant, avionics, communications, and weapons capabilities. The expected life cycle is about 20 years.

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
## Medium Lift

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UH-60A Black Hawk</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 592 Fleet age: 23 Date: 1979</td>
<td>1</td>
<td></td>
<td><strong>UH-60M Black Hawk</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Black Hawk UH-60A is a medium-lift utility helicopter. The expected life span is about 25 years. This variant of the Black Hawk is now being replaced by the newer UH-60M variant.</td>
<td></td>
<td></td>
<td>Timeline: 2005-2025</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td><strong>UH-60M Black Hawk</strong></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 698 Fleet age: 8 Date: 2006</td>
<td></td>
<td></td>
<td><strong>DELIVERY</strong></td>
<td>577</td>
<td>798</td>
</tr>
<tr>
<td>The Black Hawk UH-60M is a medium-lift utility helicopter that is a follow on to the UH-60A. As the UH-60A is retired, the M variant will be the main medium-lift rotorcraft used by the Army. Expected to remain in service until 2030.</td>
<td></td>
<td></td>
<td><strong>SPENDING ($ millions)</strong></td>
<td>$12,680</td>
<td>$13,559</td>
</tr>
</tbody>
</table>

## Heavy Lift

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CH-47D Chinook</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 208 Fleet age: 26 Date: 1962</td>
<td>1</td>
<td></td>
<td><strong>CH-47F</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Chinook is a heavy-lift helicopter. It has an expected life cycle of 20 years. The CH-47Ds were originally upgraded from earlier variants of the CH-47s.</td>
<td></td>
<td></td>
<td>Timeline: 2003-2017</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td><strong>CH-47F Chinook</strong></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 189 Fleet age: 3.4 Date: 2001</td>
<td></td>
<td></td>
<td><strong>DELIVERY</strong></td>
<td>334</td>
<td>216</td>
</tr>
<tr>
<td>CH-47F is “a remanufactured version of the CH-47D with a new digital cockpit and modified airframe to reduce vibrations.” It also includes a common aviation architecture cockpit and advanced cargo-handling capabilities. The expected life span is 35 years.</td>
<td></td>
<td></td>
<td><strong>SPENDING ($ millions)</strong></td>
<td>$12,232</td>
<td>$2,786</td>
</tr>
</tbody>
</table>

## Intelligence, Surveillance, and Reconnaissance (ISR)

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MQ-1C Gray Eagle</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 99 Fleet age: 2 Date: 2009</td>
<td>5</td>
<td></td>
<td><strong>MQ-1C Gray Eagle</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Gray Eagle is a medium-altitude long-endurance (MALE) UAV used to conduct ISR missions. The use of MALE UAVs is a new capability for the Army. The Gray Eagle is currently in production.</td>
<td></td>
<td></td>
<td>Timeline: 2010-2015</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>DELIVERY</strong></td>
<td>12</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SPENDING ($ millions)</strong></td>
<td>$4,159</td>
<td>$539</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.

**Source:** Heritage Foundation research using data from government documents and websites.
### Aircraft Carrier

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nimitz-Class Aircraft Carrier (CVN-68)</td>
<td>3</td>
<td>1</td>
<td>2008-2018</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Inventory: 10</td>
<td>Fleet age: 23.5</td>
<td>Date: 1975</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The expected life of the Nimitz-class nuclear aircraft carrier is 50 years. The class will start retiring in mid-2020s and will be replaced by the Ford-class carriers.

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ford-Class Aircraft Carrier (CVN-78)</td>
<td>1</td>
<td>2</td>
<td>Through FY 2014</td>
<td>Pending</td>
<td></td>
</tr>
<tr>
<td>Timeline: 2008-2018</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Currently in production, the Ford-class will replace the current Nimitz-class aircraft carriers. The acquisition program has had some delays due to development issues. The delivery of the first Ford-class was delayed a year, causing the carrier fleet to drop to 10. The program has also experienced significant cost growth of 22 percent. The Ford-class will increase aircraft sorties by 25 percent, require a crew of several hundred fewer sailors, and be able to handle more advanced weapon systems.

#### DELIVERY

- All 3 pending

#### SPENDING ($ millions)

- $19,147
- $20,850

### Large Surface Combatant

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ticonderoga-Class Cruiser (CG 47)</td>
<td>2</td>
<td>1</td>
<td>2007-2009</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Inventory: 22</td>
<td>Fleet age: 24.2</td>
<td>Date: 1983</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Ticonderoga-class guided missile cruiser has a life expectancy of 35 years. There are plans to lay up half of the cruiser fleet starting in FY 2015 through FY 2026 to modernize it and extend its life into the 2030s. There are no replacements currently planned.

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zumwalt-Class Destroyer (DDG-1000)</td>
<td>1</td>
<td>1</td>
<td>Through FY 2014</td>
<td>Pending</td>
<td></td>
</tr>
<tr>
<td>Timeline: 2007-2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The DDG-1000 was designed to be a new-generation destroyer capable of handling more advanced weapon systems, modern gun systems, and a hull design aimed to reduce radar detectability. The DDG-1000 program was intended to produce a total of 32 ships, but this number has been reduced to 3, essentially ending the acquisition program.

#### DELIVERY

- All 3 pending

#### SPENDING ($ millions)

- $20,118
- $1,541

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arleigh Burke-Class Destroyer (DDG-51)</td>
<td>4</td>
<td>4</td>
<td>1985-2019</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Inventory: 62</td>
<td>Fleet age: 13.3</td>
<td>Date: 1991</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Arleigh Burke-class guided missile destroyer is the only operating class of large surface combatant currently in production. The DDG-51 has a 35-year life expectancy.

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arleigh Burke-Class Destroyer (DDG-51)</td>
<td>3</td>
<td>4</td>
<td>Through FY 2014</td>
<td>Pending</td>
<td></td>
</tr>
<tr>
<td>Timeline: 1985-2019</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The DDG-51 has been procured since 1985, but was restarted in FY 2013 to make up for the reduction in DDG-1000 acquisitions. Future DDG-51s will be upgraded to a Flight III design, which will include the Advanced Missile Defense Radar (AMDR), a more capable missile defense radar. The DDG-51 will make up the bulk of the Navy’s large surface combatant requirement of 88.

#### DELIVERY

- 62

#### SPENDING ($ millions)

- $75,738
- $18,286

---

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
### NAVY SCORES

#### Small Surface Combatant

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oliver Hazard Perry-Class Frigate (FFG-7)</strong></td>
<td></td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 11</td>
<td>Fleet age: 28.8</td>
<td>Date: 1977</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Of the 51 Oliver Hazard Perry-class guided missile frigates built for the U.S., 40 have been retired. The remaining 11 ships have nearly reached the class’s expected life span of 30 years. There are proposals to retire the remaining frigates in FY 2015. No replacements are planned for this class.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Littoral Combat Ship (LCS)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 4</td>
<td>Fleet age: 3.3</td>
<td>Date: 2008</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Littoral Combat Ship includes two classes: the Independence-class and the Freedom-class, both of which are in the early phases of production. The ship is expected to have a service life of 25 years. The LCS is designed to meet multiple missions and make up the entirety of the small surface combatant requirement.</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avenger-Class Mine Counter Measure (MCM-1)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 8</td>
<td>Fleet age: 22.1</td>
<td>Date: 1987</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Designed for mine sweeping and hunting/killing, 8 of the 14 Avenger-class ships built are still active. The class has a 30-year life span. The remaining MCMs are expected to be decommissioned throughout the 2020s. There is no replacement in production for this class of ship, but the Navy plans to fill its mine countermeasure role with the LCS.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### SSNG Cruise Missile Submarine

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ohio-Class (SSGN-726)</strong></td>
<td></td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 4</td>
<td>Fleet age: 31.6</td>
<td>Date: 1981</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rather than retiring the four oldest Ohio-class ballistic missile submarines early, the Navy converted them to SSGN-726 guided missile submarines, equipping them with conventional Tomahawk cruise missiles rather than Trident ballistic missiles tipped with nuclear warheads. The SSGNs provide the Navy with a large stealthy strike capability. The conversion began in 2002 and was completed in 2007. Since the conversion, they are expected to be retired in the late 2020s. The Navy has no planned replacement for the SSGNs once they retire.</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
### NAVY SCORES

#### Attack Submarines

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seawolf-Class (SSN-21)</strong></td>
<td></td>
<td></td>
<td><strong>Virginia-Class (SSN–774)</strong></td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Inventory: 3</td>
<td></td>
<td></td>
<td>Timeline: 1998–2019</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 14.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 1997</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Larger and equipped with more torpedo tubes than the U.S. Navy’s other current nuclear-powered attack submarines the class was cancelled after 3 submarines were purchased due to budget constraints in the 1990s. The Seawolf-class submarines are expected to be retired in 15 years. Meant to replace the Los Angeles-class, the Seawolf has been replaced by the Virginia-class attack submarine.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Los Angeles-Class (SSN-688)** | 1 |                   |                         |            |              |
| Inventory: 41                 |   |                  |                         |            |              |
| Fleet age: 25.5               |   |                  |                         |            |              |
| Date: 1976                    |   |                  |                         |            |              |
| The Los Angeles-class comprises the largest portion of the Navy’s attack submarine fleet. The class has a 30 year service life. Of the 62 built, 21 have been decommissioned. The last Los Angeles-class submarine is expected to retire in the late 2020s. The Virginia-class is replacing this submarine class. | | | | | |

| **Virginia-Class (SSN-774)** | 5 |                   |                         |            |              |
| Inventory: 10                |   |                  |                         |            |              |
| Fleet age: 5.3               |   |                  |                         |            |              |
| Date: 2004                   |   |                  |                         |            |              |
| The Virginia-class is the U.S. Navy’s next-generation attack submarine. The life expectancy of the Virginia-class is 33 years. The Virginia-class is in production and will replace the Los Angeles-class and Seawolf-class attack submarines as they are decommissioned. | | | | | |

#### SSBN Ballistic Missile Submarine

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ohio-Class (SSBN)</strong></td>
<td></td>
<td></td>
<td>N/A—SSBN(X) not yet a Major Defense Acquisition Program (MDAP)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Inventory: 14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 23.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 1981</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The SSBN Ohio-class is one of the three legs of the U.S. military’s nuclear triad. The Ohio-class’s expected service life is 42 years per boat. The Ohio-class fleet will begin retiring in 2027 at an estimated rate of one submarine per year until 2039. The Navy plans to replace the Ohio-class with the SSBN(X) or next-generation “Ohio replacement program.”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
### Amphibious Warfare Ship

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tarawa-Class Amphibious Assault Ship (LHA-1)</strong></td>
<td>1</td>
<td>1</td>
<td><strong>America-class (LHA 6)</strong></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Inventory: 1  Fleet age: 34.3  Date: 1976</td>
<td></td>
<td></td>
<td>Timeline: 2007-2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Tarawa-class is an amphibious assault ship capable of carrying aircraft like the AV-8B Harrier and MV-22 Osprey. The first four Tarawa-class ships were decommissioned between 2005 and 2011. The Navy plans to deactivate the remaining ship in FY 2015.</td>
<td></td>
<td></td>
<td>The America-class is in production with two LHA-6s already procured. There has been significant cost growth in this program resulting in a Nunn–McCurdy cost breach. The program is also experiencing a 19-month delay because of design problems. One problem was caused by the level of heat from the F-35B STOVL’s exhaust. The LHA-7 will follow designs from the LHA-6; however, the third and final LHA-6 is being redesigned to include a well deck that was removed to increase aviation support spaces. The requirements for this last ship have not yet been completed.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Wasp-Class Amphibious Assault Ship (LHD-1)** | 3 | 1 | | | |
| Inventory: 8  Fleet age: 17.5  Date: 1989 | | | | | |
| The Wasp-class is the Navy’s current amphibious landing helicopter deck, meant to replace the Tarawa-class LHA. This ship has a 35-year life span. This class is no longer in production and will be replaced by the new America-class. | | | | | |

| **America-Class Amphibious Assault Ship (LHA-6)** | 5 | | | | |
| Inventory: 1  Fleet age: 0  Date: 2014 | | | | | |
| The America-class, the Navy’s new class of large-deck amphibious assault ships, is meant to replace the retiring Wasp-class LHDs. The lead ship was delivered in April 2014. The America-class is designed to accommodate the Marine Corps’ F-35Bs. | | | | | |

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
## Amphibious Warfare Ship

**Austin-Class Amphibious Transport Dock (LPD-4)**

Inventory: 1  Fleet age: 45.8  Date: 1965

A transport dock ship, the Austin-class is being retired. The last ship, USS Denver, is scheduled to be decommissioned this year. The class is being replaced by the San Antonio-class LPDs.

**San Antonio-Class Amphibious Transport Dock (LPD-17)**

Inventory: 9  Fleet age: 4.6  Date: 2006

The San Antonio-class is the replacement for the Austin-class LPD and makes up most of the LPD inventory. The LPDs have well decks that allow the USMC to transfer the vehicles and supplies carried by the ship to the shore via landing craft. The LPD can also carry 4 CH-46s or 2 MV-22s. The class has a 40-year life expectancy.

**Whidbey Island-Class Dock Landing Ship (LSD-41)**

Inventory: 8  Fleet age: 25.5  Date: 1985

The Whidbey Island-class is a dock landing ship, which transports Marine Corps units, equipment, and supplies for amphibious operations through use of its large stowage and well decks. Although 2 LSD-41s are planned for retirement in FY 2015, the rest are planned to stay in service until 2038. The Whidbey Island-class and Harpers Ferry-class ships are to be replaced by the LX(R) program, which is in early developmental stages.

**Harpers Ferry-Class Dock Landing Ships (LSD-49)**

Inventory: 4  Fleet age: 18.4  Date: 1995

A follow-on to the Whidbey Island-class, the Harpers Ferry-class LSDs have a larger well deck with more space for vehicle stowage and landing craft. Like the Whidbey Island-class, these ships should remain in service until 2038. The Whidbey Island-class and Harpers Ferry-class ships are planned to be replaced by the LX(R) program, which is in early developmental stages.

**Modernization Delivery and Spending:**

<table>
<thead>
<tr>
<th>Platform</th>
<th>Score</th>
<th>Score</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Antonio-Class Amphibious Transport Dock (LPD-17)</td>
<td>5</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whidbey Island-Class Dock Landing Ship (LSD-41)</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harpers Ferry-Class Dock Landing Ships (LSD-49)</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
### 2015 INDEX OF U.S. MILITARY STRENGTH

#### NAVY SCORES

See Methodology for descriptions of scores.

##### Airborne Early Warning

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E-2C Hawkeye</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 68  Fleet age: 30  Date: 1964</td>
<td>1</td>
<td>1</td>
<td>E-2D Advanced Hawkeye</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>The E-2C Hawkeye is a battle management and airborne early warning aircraft. While still operational, the E-2C is nearing the end of its service life and is being replaced by the E-2D Advanced Hawkeye. The E-2C fleet received a series of upgrades to mechanical and computer systems around the year 2000.</td>
<td></td>
<td></td>
<td>Timeline: 2009–2023</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **E-2D Advanced Hawkeye** | | | | | |
| Inventory: 16  Fleet age: 2.5  Date: 2013 | 5 | | | | |
| A more advanced version of the E-2C, the E-2D provides improved battle management capabilities. The program recently started production. | | | | | |

##### Electronic Attack Aircraft

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EA-6B Prowler</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 20  Fleet age: 30  Date: 1971</td>
<td>1</td>
<td></td>
<td>EA-18G Growler</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>The EA-6B Prowler is the Navy’s legacy electronic countermeasure platform. The few remaining are being retired and replaced by the EA-18G Growler.</td>
<td></td>
<td></td>
<td>Timeline: 2006–2014</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **EA-18G Growler** | | | | | |
| Inventory: 104  Fleet age: 2  Date: 2010 | 5 | | | | |
| The EA-18G electronic warfare aircraft is replacing the legacy EA-6B Prowlers. The platform is still in production and is relatively new. | | | | | |

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.

---

**Modernization Delivery and Spending:**

- **Through FY 2014**
- **Pending**

**DELIVERY**

- **SPENDING ($ millions)**
## NAVY SCORES

### Fighter/Attack Aircraft

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>F/A-18 A-D Hornet</td>
<td></td>
<td></td>
<td>F-35C Joint Strike Fighter</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Inventory: 455</td>
<td>Fleet age: 23.5 Date: 1983</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Timeline: 2009–2033</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DELIVERY</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SPENDING ($ millions)</td>
<td>255</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$90,886</td>
<td>$307,699</td>
</tr>
<tr>
<td>F/A-18 E/F Super Hornet</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Inventory: 563</td>
<td>Fleet age: 12.4 Date: 2001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

The F/A-18 is the Navy’s older carrier-based fighter and strike attack aircraft. The Navy has been trying to extend the life of the later variants (C-D) from 6,000 flight hours to potentially 10,000. However, some are being retired and eventually will be replaced by the F/A-18 E/F Super Hornet and F-35C variant.

The F-35C is the Navy’s variant of the Joint Strike Fighter. The Joint Strike Fighter has faced many issues during its developmental stages, including engine problems, software development delays, cost overruns incurring a Nunn–McCurdy breach, and structural problems. The F-35C variant was always scheduled to be the last one to reach initial operational capability (IOC). Like the other variants, the IOC date was pushed back three years from March 2015 to late 2018.

---

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service. The Navy is also buying 80 F-35Cs for the U.S. Marine Corps, which are excluded here. The total program dollar value reflects the full F-35 joint program including engine procurement.

**Source:** Heritage Foundation research using data from government documents and websites.
### Strategic Bomber

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-52</td>
<td></td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 72</td>
<td>Fleet age: 52.7</td>
<td>Date: 1955</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The B-52, the oldest of the bombers, can provide global strike capabilities with conventional or nuclear payloads, although it largely has made up the core of the strategic bomber force. The aircraft entered service in 1955 and was in production until 1962.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-1</td>
<td></td>
<td></td>
<td>F-35A</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Inventory: 63</td>
<td>Fleet age: 27</td>
<td>Date: 1986</td>
<td>Timeline: 2007-2038</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The B-1, originally designed to carry nuclear weapons, was reconfigured for conventional weapons in the early 1990s. The program entered service in 1986 and completed production in 1988. The B-1B will remain in service until 2040.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 19</td>
<td>Fleet age: 20.1</td>
<td>Date: 1997</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The B-2 bomber provides the USAF with global strike capabilities. It can carry both nuclear and conventional payloads. Initially deployed in 1997, the aircraft communication modules are being upgraded. It is expected to remain in service until 2058.</td>
<td></td>
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</tr>
</tbody>
</table>

### Ground Attack Aircraft

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-10 Thunderbolt II</td>
<td></td>
<td></td>
<td>F-35A</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Inventory: 359</td>
<td>Fleet age: 32</td>
<td>Date: 1977</td>
<td>Timeline: 2007-2038</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The A-10 provides the USAF with global strike capabilities with a variety of conventional munitions. The aircraft is the only USAF platform designed solely for close air support. The USAF has proposed retiring the aircraft earlier than the planned 2028 date for budget reasons.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-16</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Inventory: 913</td>
<td>Fleet age: 23.9</td>
<td>Date: 1978</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The F-16 is a multirole aircraft and is the most numerous aircraft in USAF’s inventory. The aircraft was in production from 1976 to 1999 and included multiple variants and block upgrades. The aircraft was expected to last about 30 years.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-35A</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Inventory: 27</td>
<td>Fleet age: 0.9</td>
<td>Date: 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The F-35 is the Air Force’s next-generation stealth multirole fighter. There are three variants of the F-35, the USAF variant F-35A is meant to replace the F-16. The aircraft is still in early stages of production.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
## Fighter Aircraft

See Methodology for descriptions of scores.

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-15</td>
<td></td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>Pending</td>
</tr>
<tr>
<td>F-22</td>
<td></td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>Pending</td>
</tr>
</tbody>
</table>

### F-15

- **Inventory:** 438
- **Fleet age:** 26.7
- **Date:** 1979

The F-15 is a legacy fixed-wing fighter aircraft that supports the air and space superiority mission. The F-15 makes up for over 70 percent of the Air Force air dominance aircraft. It is currently out of production. The earlier variant of F-15 Eagles will be retired, while the newer variant F-15E Strike Eagles will remain in the fleet until 2025 to supplement the F-22.

### F-22

- **Inventory:** 177
- **Fleet age:** 6.9
- **Date:** 2005

The F-22 is a fixed-wing fighter aircraft designed to be the preeminent air superiority platform used to gain and maintain air dominance. The stealth aircraft completed production in 2009; 750 were envisioned, but only 187 were produced. It is currently being modified.

## Tanker

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>KC-10</td>
<td></td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>Pending</td>
</tr>
<tr>
<td>KC-46</td>
<td></td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>Pending</td>
</tr>
<tr>
<td>KC-135</td>
<td></td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>Pending</td>
</tr>
</tbody>
</table>

### KC-10

- **Inventory:** 59
- **Fleet age:** 29.6
- **Date:** 1981

An aerial refueling tanker supporting the USAF's Mobility and Lift mission, the KC-10 was deployed in 1981. The aircraft was purchased to increase the number of tankers available, which the Air Force posited did not meet current requirements. The aircraft is no longer in production, but is planned to remain in inventory until 2040.

### KC-46

- **Timeline:** 2015–2027

The KC-46 is meant to replace the KC-135. It is currently in development and has been delayed by a year due to “design changes and late parts.” This is a top program for the Air Force and has an aggressive development and test schedule that may be problematic.

### DELIVERY

- All 179 pending

### SPENDING ($ millions)

- $5,153
- $44,308

### Notes:

Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
**Heavy Lift**

### C-5

- **Inventory:** 74
- **Fleet age:** 34.5
- **Date:** 1970

The C-5 is the USAF’s largest mobility and lift aircraft, enabling it to transport a greater amount of cargo (270,000 pounds) compared with other transport aircraft. Originally deployed in 1970, the aircraft has undergone three modification cycles. The latest started in 2009 to upgrade the platform to a C-5M. The modification program is currently ongoing. The aircraft will remain in service until the 2030s.

**C-5 RERP**

- **Timeline:** 2008–2014
- **Description:** This program is modernizing the C-5 to improve “reliability, maintainability, and availability.” It is currently experiencing a delivery delay of 4 months due to production issues. The C-5 is having its engine replaced with the new F138. The new engine experienced several issues that are in the process of being mitigated.

<table>
<thead>
<tr>
<th>DELIVERY</th>
<th>SPENDING ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>36</td>
</tr>
<tr>
<td>$6,807</td>
<td>$332</td>
</tr>
</tbody>
</table>

### C-17

- **Inventory:** 228
- **Fleet age:** 11
- **Date:** 1993

The C-17 is a large fixed-wing transport aircraft in support of USAF’s mobility and lift mission. The aircraft can lift 170,900 pounds and land on short runways. The aircraft entered service in 1995. The program was expanded from 120 aircraft to 223 aircraft. The procurement program for the C-17 was recently completed. The aircraft was originally planned to last 30 years, but more frequent usage may shorten that life span.

### C-130

- **Inventory:** 338
- **Fleet age:** 21.9
- **Date:** 1956

The family of C-130 aircraft supports the USAF’s tactical mobility and lift capability. Unlike the other transport aircraft, the C-130s can land on rough dirt strips. It can carry about 42,000 pounds and is expected to last 25 years.

**C-130J**

- **Timeline:** 1994–2021
- **Description:** The program provides the Air Force with an upgraded medium-lift capability. The C-130J can lift over 40,000 pounds of cargo. The frame supports various other types of aircraft, such as the USMC tanker KC-130J. There are few issues with the current acquisition of C-130Js.

<table>
<thead>
<tr>
<th>DELIVERY</th>
<th>SPENDING ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>117</td>
<td>51</td>
</tr>
<tr>
<td>$10,622</td>
<td>$5,148</td>
</tr>
</tbody>
</table>

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
## Intelligence, Surveillance, and Reconnaissance (ISR)

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ-4 Global Hawk</td>
<td>5</td>
<td></td>
<td>RQ-4</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DELIVERY</td>
<td>40</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SPENDING ($ millions)</td>
<td>$8,273</td>
<td>$857</td>
</tr>
<tr>
<td>MQ-1 Predator</td>
<td>4</td>
<td></td>
<td>MQ-9</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Inventory: 137</td>
<td>Fleet age: 7.4</td>
<td>Date: 2005</td>
<td>Timeline: 2002–2019</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DELIVERY</td>
<td>163</td>
<td>183</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SPENDING ($ millions)</td>
<td>$6,070</td>
<td>$5,796</td>
</tr>
<tr>
<td>MQ-9 A/B</td>
<td>3</td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 121</td>
<td>Fleet age: 4.1</td>
<td>Date: 2007</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC-135 Rivet Joint</td>
<td>1</td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 22</td>
<td>Fleet age: 51</td>
<td>Date: 1964</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U-2</td>
<td>4</td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 27</td>
<td>Fleet age: 31.6</td>
<td>Date: 1956</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
## Command and Control

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-3 AWACS</td>
<td></td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 32</td>
<td>Fleet age: 36.1</td>
<td>Date: 1978</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The E-3 is an airborne warning and control system (AWACS) that provides USAF with command and control and battle management capabilities. The aircraft entered service in 1978. No longer in production, the current inventory is undergoing modifications to upgrade computing systems. The fleet is currently intended to remain in service until 2025.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-8 JSTARS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 17</td>
<td>Fleet age: 13.7</td>
<td>Date: 1997</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The E-8 is a newer command and control aircraft that provides battle management and C4ISR capabilities, mainly by providing ground surveillance to various air and ground commanders in theater. The aircraft first entered service in 1997 and is not currently in production. The Air Force plans to retire the JSTARs in the early 2030s.</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Space Superiority

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Positioning System (GPS)</td>
<td></td>
<td></td>
<td>GPS III</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 31</td>
<td>Fleet age: 29.6</td>
<td>Date: 1990</td>
<td>Timeline: 2012–2014</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>GPS satellites are part of USAF’s Air and Space Superiority mission and provide the joint force with navigation data. The GPS constellation was completed in 1995. It is currently being updated by the follow-on GPS III. These satellites have an average of 7.5 years lifespan though the newest Block IIF has a 12-year life span.</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spaced-Based Infrared System (SBIRS)</td>
<td></td>
<td></td>
<td>SBIRS High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: n/a</td>
<td>Fleet age: n/a</td>
<td>Date: 2010</td>
<td>Timeline: 2009–2013</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>The SBIRS satellite system, part of Air and Space Superiority mission, provides early missile warning for missile defense and battlespace awareness purposes. The SBIRS High constellation is still in procurement, and one increment has been launched.</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
- Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
- The full F-35 joint program includes engine procurement.
- Source: Heritage Foundation research using data from government documents and websites.
## MARINE CORPS SCORES

![Image of MARINE CORPS SCORES]

### Main Battle Tank

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1A1/2 Abrams</td>
<td>4</td>
<td>5</td>
<td>None</td>
</tr>
</tbody>
</table>

The M1A1 Abrams Main Battle Tank provides the Marine Corps with heavy-armor direct fire capabilities. It is expected to remain in service until 2050.

### Light Wheeled Vehicle

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMMWV</td>
<td>1</td>
<td>1</td>
<td>Joint Light Tactical Vehicle (JLTV)</td>
</tr>
</tbody>
</table>

The HMMWV is a light wheeled vehicle used to transport troops with some measure of protection against light arms, blast, and fragmentation. The expected life span of the HMMWV is 15 years. Some HMMWVs will be replaced by the Joint Light Tactical Vehicle (JLTV).

**JLTV**

- **Timeline:** 2015–2040
- **Delivery:**
  - 40
  - 5,519
- **Spending ($ millions):**
  - $277
  - $2,711

Currently in development, the JLTV is a vehicle program meant to replace some of the HMMWVs and improve reliability, survivability, and strategic and operational transportability. So far the program has experienced a one-year delay due to changes in vehicle requirements. This is a joint program with Army. The program is slated to begin low-rate initial production with one manufacturer in 2015.

### Amphibious Assault Vehicle

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAV-7A1</td>
<td>1</td>
<td>1</td>
<td>N/A—Amphibious Combat Vehicle (ACV) 2.0 not yet a Major Defense Acquisition Program (MDAP)</td>
</tr>
</tbody>
</table>

The Amphibious Assault Vehicle transports troops and cargo from ship to shore. The AAV-7 has been through a service life extension to extend the expected life to 42 years. There are current plans to replace the AAV (not yet an MDAP).

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAV-25</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

The LAV is a wheeled light armv vehicle with modest amphibious capability used for armored reconnaissance and highly mobile fire support. It has undergone several service life extensions to expand its life span to 42 years and will be in service until 2035.

*Notes:* Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
### Marine Corps Scores

#### Attack Helicopters

<table>
<thead>
<tr>
<th>Platform</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>Modernization Program</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH-1W Cobra</td>
<td>2</td>
<td>2</td>
<td>AH-1Z</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Inventory: 120</td>
<td>Fleet age: 23</td>
<td>Date: 1986</td>
<td>Timeline: 2004–2020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Super Cobra is an attack helicopter that provides the Marines with close air support and armed reconnaissance. The Super Cobra will remain in service until 2021, when it will be replaced with the AH-1Z.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| AH-1Z Viper       | 2         | 2                | DELIVERY: 37 | SPENDING ($ millions): 8,027 |
| Inventory: 38     | Fleet age: 2 | Date: 2010    |            | 4,998        |
| The AH-1Z Viper is the follow on to the AH-1W Cobra attack helicopter. The Viper will have greater speed, payload, and range, as well as a more advanced cockpit. It is expected that the AH-1Z will fully replace the AH-1W Cobra in 2021. The expected operational life span of the Viper is 30 years. |

#### Airborne Electronic Attack Aircraft/Ground Attack Aircraft

<table>
<thead>
<tr>
<th>Platform</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>Modernization Program</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA-6B</td>
<td>1</td>
<td>1</td>
<td>F-35B/C</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Inventory: 29</td>
<td>Fleet age: 26</td>
<td>Date: 1971</td>
<td>Timeline: 2008–2033</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Prowler provides the USMC with an electronic warfare capability. It will be retired in 2019 and will be replaced by the F-35B.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| F-35B/C           | 3         | 1                | DELIVERY: 30 | SPENDING ($ millions): 90,886 |
| Inventory: 30     | Fleet age: 2015 | Date: 2015    |            | 307,699       |
| The F-35B is the Marine Corps’ short takeoff and vertical landing variant meant to replace the AV-8B Harrier. Despite some development problems, the F-35B is expected to enter service in late 2015. |

| Inventory: 237    | Fleet age: 22.5 | Date: 1978    |            |              |
| The F/A-18 fleet has logged about 6,800 hours compared with the originally intended 6,000. Currently the life span has been extended to 8,000 flight hours, which translates to extending the fleet life until 2030. This is necessary to bridge the gap to when the F-35Bs and F-35Cs are available. |

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
## MARINE CORPS SCORES

See Methodology for descriptions of scores.

### Medium Lift

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CH-46E Sea Knight</strong></td>
<td>1</td>
<td></td>
<td><strong>MV-22B</strong></td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Inventory: 116</td>
<td>Fleet age: 45</td>
<td>Date: 1964</td>
<td>Timeline: 1997-2031</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Sea Knight provides medium-lift capabilities for amphibious operations ashore. The platform will be replaced by the Osprey. The service life of the CH-46E is 50 years and the fleet is expected to begin retirement by FY 2017.</td>
<td></td>
<td></td>
<td>The Osprey is in production, and the platform is meeting performance requirements. The modernization program is not facing any serious issues.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MV-22</strong></td>
<td>4</td>
<td></td>
<td></td>
<td>257</td>
<td>203</td>
</tr>
<tr>
<td>Inventory: 210</td>
<td>Fleet age: 4</td>
<td>Date: 2007</td>
<td>SPENDING ($ millions)</td>
<td>$41,680</td>
<td>$13,263</td>
</tr>
<tr>
<td>The Osprey is a vertical takeoff and landing tilt-rotor platform designed to support expeditionary assault, cargo lift, and raid operations. The program is still in production. The program life expectancy of the MV-22 is 23 years.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Heavy Lift

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CH-53E Super Stallion</strong></td>
<td>2</td>
<td>1</td>
<td><strong>CH-53K</strong></td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Inventory: 151</td>
<td>Fleet age: 25</td>
<td>Date: 1981</td>
<td>Timeline: 2017-2028</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The CH-53E is a heavy-lift rotorcraft. The aircraft will be replaced by the CH-53K, which will have a greater lift capacity. The program life of the CH-53E is 41 years.</td>
<td></td>
<td></td>
<td>The program is in development. It is meant to replace the CH-53E and provide increased range, survivability, and payload. The program still has not fully developed the critical technology necessary. The program is experiencing delays and cost growth.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Tanker

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KC-130J</strong></td>
<td>5</td>
<td>5</td>
<td><strong>KC-130J</strong></td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Inventory: 74</td>
<td>Fleet age: 7</td>
<td>Date: 2004</td>
<td>Timeline: 1997-2031</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The KC-130J is both a tanker and transport aircraft. It can transport troops, provide imagery reconnaissance, and perform tactical aerial refueling. This platform is currently in production. The airframe is expected to last 38 years.</td>
<td></td>
<td></td>
<td>The KC-130J is both a tanker and transport aircraft. The procurement program for the KC-130J is not facing acquisition problems, but the original procurement quantity for FY 2014 was reduced from 2 to 1.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service. For the F-35 program, note that the U.S. Marine Corps is also purchasing 80 F-35Cs, which are included here. The total program dollar value reflects the full F-35 joint program including engine procurement. The MV-22B program also includes some costs from the U.S. Air Force procurement. The AH-1Z costs include costs of UH-1 procurement.

**Source:** Heritage Foundation research using data from government documents and websites.
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