2016 INDEX OF
U.S. Military Strength
Assessing America’s Ability to Provide for the Common Defense

DAVIS INSTITUTE FOR
NATIONAL SECURITY
AND FOREIGN POLICY

Edited by
Dakota L. Wood
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This work is dedicated to the memory of Douglas Allison.
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Any views presented in, or reflecting the results of any prepublication review of, this document by an officer or employee of the United States are rendered in his or her individual capacity and do not necessarily represent the views of the United States or any agency thereof.
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While no publication of this type is possible without the contributions of a great many people, there are usually a few special contributors whose talents, work ethic, and willingness to go the extra mile make it something quite special.

Policy Analyst for Defense and Security Studies Brian Slattery took on the additional responsibilities of project management, working with the team of authors, editors, and graphics and production professionals that made this Index a reality, both in print and on the Web.

Charles “Cully” Stimson, Senior Legal Fellow and Manager of the National Security Law Program in our Kathryn and Shelby Cullom Davis Institute for National Security and Foreign Policy, merits special recognition for his skillful shepherding of portions of this Index. His efforts made this edition and the work of those who contributed to it substantially better as a result.

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As envisioned by Dr. James Jay Carafano, we believe this Index helps to provide 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 Davis Institute for National Security and Foreign Policy publishes this second edition of the annual Index of U.S. Military Strength.

Finally, in addition to acknowledging all of those who helped to prepare the Index of U.S. Military Strength, The Heritage Foundation expresses its profound appreciation to the members of the U.S. armed forces who continue to protect the liberty of the American people in a dangerous world.
Preface
Jim DeMint

The past year has been a tumultuous one for the national security interests and defense capabilities of the United States, to put it mildly.

- China has built islands in the South China Sea in defiance of international efforts to resolve territorial disputes amicably and is moving to militarize them.

- Russia continued its efforts to destabilize Ukraine and intimidate not only the Baltic States, but other key members of NATO as well.

- Iran increased its meddling in Iraqi affairs, sustained its support of Hezbollah and Syria’s Bashar al-Assad, advanced its development of ballistic missile technologies, and scored a major victory in retaining its nuclear infrastructure and gaining relief from international sanctions in spite of its years of serial violations of nonproliferation agreements and its continuous support of terrorist organizations.

- The murderous Islamic State expanded its control of territories in Syria and Iraq and extended its operations into Yemen, Afghanistan, North Africa, and even Europe.

- Taking a page from the Islamic State’s playbook, Boko Haram doubled down on its violent conquest of parts of Nigeria.

- And the U.S. itself has suffered both casualties from the physical attacks of Islamist-inspired terrorists and the virtual damage of cyber-attacks conducted by China and Russia, among others.

In spite of these developments, however, little has been done to arrest the decline in our nation’s physical ability to confront such challenges.

In our inaugural 2015 Index of U.S. Military Strength, we noted that providing for the security of the United States of America is one of the very few responsibilities given to the federal government by the U.S. Constitution. We also noted that threats to the nation’s security interests in key regions have grown worrisome: conducting military operations against those threats would be difficult because of declines in the ability of allies to help, and the inability of our own military to handle more than one large conflict effectively.

The Heritage Foundation’s 2016 Index of U.S. Military Strength concludes that America’s “hard power” has deteriorated still further over the past year, primarily as a result of inadequate funding that has led to a shrinking force that possesses aging equipment and modest levels of readiness for combat. This should be a concern for all Americans.

Feedback from our first edition clearly indicates that Americans have an interest in the security of their country and a desire to better understand whether their military is up to the task of providing that security. In the first six months following
release of the 2015 Index, the online version was accessed by 50,000 unique visitors. We believe that this consistent, up-to-date, standardized, and easily understood assessment of America’s hard power will continue to be an essential reference for policymakers and the American people.

The vision of The Heritage Foundation is “to build an America where freedom, opportunity, prosperity, and civil society flourish.” While it is true that Americans have a habit of rallying in times of peril or great difficulty and that the “shining city upon a hill” cited by Ronald Reagan shines brightest when days are dark, we should seek to prevent our enemies and competitors from creating such dark days at all. Rallying to confront imminent dangers is more costly than preparing for them: Weakness invites aggression, while strength deters it and fosters peace.

We continue to 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 and that it will make the case for an America strong enough to sustain freedom, opportunity, prosperity, and peace for all.

Jim DeMint, President
The Heritage Foundation
October 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 each subsequent edition will provide the basis for measuring the 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 costs 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. In fact, an absence of military power or the perception that one’s hard power is insufficient to protect one’s interests often invites challenges that “soft power” is ill-equipped to address. Thus, hard and soft power are complementary and mutually reinforcing.

America’s continuing decline in military hard power is thoroughly documented and quantified in this report. More difficult to quantify, however, are the growing threats to America and our allies resulting from the perception of American weakness abroad and doubts about American resolve to act when our interests are threatened. The anecdotal evidence is consistent with direct conversations between Heritage scholars and high-level diplomatic and military officials from countries around the world: The perception of American weaknesses is destabilizing many parts of the world. For decades the perception of American strength and resolve has served as a deterrent to adventurous bad actors and tyrannical dictators. Unfortunately, the deterrent of American strength is fast disappearing, resulting in an increasingly dangerous world threatening a significantly weaker America.

Consequently, it is critical to understand the condition of the United States military with respect to America’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 substantial implications for defense policies and investments.

In the opening paragraph of the U.S. Constitution, “We the People” stated that among their handful of
purposes in establishing the Constitution was to “provide for the common defence.” The enumeration of limited powers for the federal government in the Constitution includes 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,” and “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. No such single volume exists, especially in the public domain, to allow comparisons from year to year. Thus, the American people and even the government itself are prevented from understanding whether investments made in defense are achieving desired results.

Therefore, what is needed is a publicly accessible reference document that uses a consistent, methodical, repeatable approach to assessing defense requirements and capabilities. The Heritage Foundation has filled 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 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-war 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. In the 2015 Index, Dr. Daniel Gouré provided a detailed defense for this in his essay, “Building the Right Military for a New Era: The Need for an Enduring Analytic Framework,” 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.

The inaugural 2015 Index established a baseline upon which this and future editions can build. It is descriptive, not prescriptive, reviewing the current condition of its subjects within the assessed year and describing how conditions have changed from the previous year, informed by the baseline condition. In short, the Index answers the question, “Have conditions improved or worsened during the assessed year?”

This study also assesses the U.S. military against the two-war benchmark and various metrics explained further in the military capabilities section. Importantly, this study measures the hard power needed to win conventional wars rather than the general utility of the military relative to the breadth of tasks it might be (and usually is) assigned to advance U.S. interests short of war.

Assessing the World and the Need for Hard Power

The assessment portion of the Index is composed of three major sections that address 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 decisive 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 evenhanded 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 reached 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 because 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, 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. We addressed their current condition in the 2015 *Index* and will provide an updated assessment when it is warranted.

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 because it is the clearest manifestation of intent.

We based our selection of threat countries and non-state actors 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 a 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 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

The five topical essays in this 2016 Index continue the themes first addressed in the 2015 edition: top-level strategic issues that provide context for defense, major regional issues that drive defense planning, and functional or component topics that are important to understand if one is to understand the larger story of U.S. military power.

William C. Inboden provides a superb overview essay in “The Role of a Strong National Defense,” explaining that military power has strategic value beyond its use in war. According to Professor Inboden, maintaining a strong military sustains a long “American strategic tradition of armed diplomacy—of using military power in non-kinetic ways to improve our negotiating outcome, reassure allies, dissuade adversaries, and enhance global credibility and influence.”

Dr. Frank Hoffman does great service in clarifying the debate over modes of conflict, artfully explaining their variations and gradations in “The Contemporary Spectrum of Conflict: Protracted, Gray Zone, Ambiguous, and Hybrid Modes of War.”

Martin Hurt, in “Preempting Further Russian Aggression Against Europe,” argues for a more robust response by the U.S. and European/NATO partners to Russia’s use of military force to achieve political objectives in Eastern Europe. Central to Hurt’s essay is the warning that “continued acceptance of Moscow’s provocations will only further embolden [Russian President Vladimir] Putin,” a caution that is applicable to regions and competitors beyond Europe as well.

In “Intelligence and the National Defense,” David R. Shedd takes on the challenge of explaining just what constitutes the U.S. intelligence community, the role it plays in national security decision-making, how it enables more effective military operations, and the various challenges the community faces given the proliferation of advanced technologies that make the already tough job of understanding what competitors are up to that much harder.

Finally, Richard J. Dunn III provides a primer on “America’s Reserve and National Guard Components: Key Contributors to U.S. Military Strength.” Decreasing defense budgets have shrunk the Active component military, placing it under increasing stress as demands for its use have risen. This has led to more frequent and extended reliance on Reserve and National Guard elements to augment the United States’ deployed combat power, thus amplifying the need to understand what and how these critical components contribute.

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

The purpose of this Index is to make the national debate about defense capabilities better informed 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 carry out their assigned missions successfully.

Each region of the world has its own set of characteristics that include terrain; man-made infrastructure (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 continue to be confined to three regions—Europe, the Middle East, and Asia—thus enabling the U.S. (if it will do so) to focus 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 continue to 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 because it informs debates about defense policies and the allocation of resources that are necessary for the U.S. military to carry out its assigned duties. Further, as seen in this 2016 Index, noting how conditions have changed from the preceding year helps to shed light on the effect that policies, decisions, and actions have on security affairs involving the interests of the United States, its allies and friends, and its enemies.

Bear in mind that each annual Index assesses conditions as they are for the assessed year. This 2016 Index of U.S. Military Strength builds on the baseline condition of 2014 as described in the 2015 Index and assesses changes that occurred during 2015.

Assessments for U.S. Military Power, Global Operating Environment, and Threats to Vital U.S. Interests are shown below. 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**

During the decades since the end of the Second World War, the United States has underwritten and taken the lead in maintaining a global order that has benefited 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 continue to plague nations; 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 remains in question, perhaps more so than at any other time since the end of the Cold War, 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 therefore needed today more than at any other time since the end of the Cold War. This Index of U.S. Military Strength can help to inform the debate.

**Overall Assessment: 2015**

**U.S. Military Power**

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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.

Consequently, it is critical to understand the condition of the United States military with respect to America’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 substantial implications for defense policies and investment.

Each year, The Heritage Foundation’s *Index of U.S. Military Strength* employs a standardized, consistent set of criteria, accessible both to government officials and to the American public, to gauge the ability of the U.S. military to perform its missions in today’s world. The inaugural 2015 edition established a baseline assessment on which this and future annual editions will build, with each issue assessing the state of affairs for its respective year and measuring how key factors 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 other Americans who seek to know whether America’s military power is up to the task of defending our national interests.

Any discussion of the aggregate capacity and breadth of the military power needed to address threats to U.S. security interests requires a clear understanding of precisely 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 that has 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 managed to arrive at a surprisingly consistent force-sizing rationale: an ability to handle two major wars or “major regional contingencies” (MRCs) simultaneously or in closely overlapping time frames. This “two-war” or “two-MRC” requirement 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.

This force does not account for homeland defense missions that would accompany a period of major conflict and are generally handled by Reserve and National Guard forces. Nor does this recommended force constitute the totality of the Joint Force, which includes the array of supporting and combat-enabling functions essential to the conduct of any military operation: logistics; transportation (land, sea, and air); health services; communications and data handling; and force generation (recruiting, training, and education), to name a very few. Rather, these are combat forces that are the most recognizable elements of America’s hard power but that also can be viewed as surrogate measures for the size and capability of the larger Joint Force.

**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, surging transnational terrorism, and the potential threat of a nuclear Iran. Offsetting these challenges to some extent are the U.S. military’s experience in the region and the basing infrastructure that 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 sealift and airlift that are 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 global operating environment currently rates a score of “favorable,” 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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### Global Operating Environment

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Global Operating Environment

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 continued to be particularly aggressive during 2015, 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 continue to be most worrisome, both because of the investments they are making in the rapid modernization and expansion of their offensive military capabilities and because of the more enduring effect they are having within their respective regions through such actions as Russia’s active involvement in the conflict in Ukraine and China’s provocative building of islands in highly disputed international waters in the South China Sea.

North Korea warrants sustained 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 Korea 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 or destabilize Pakistan’s government, resulting in the loss of positive control of Pakistan’s inventory of nuclear weapons.

Finally, Iran and the various terrorist groups operating in the Middle East would be a greater threat to U.S. security interests than they currently are if they possessed a greater physical ability to project military power outside of their immediate areas. Such a concern is at the heart of the debate over an international agreement pertaining to Iran’s nuclear aspirations.

Taken together, the globalized threat to U.S. vital national interests as a whole during 2015 is assessed as “elevated.”

Threat Categories

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### Threats to U.S. Vital Interests

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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.

As reported in the 2015 Index, the common theme across the services and the United States’ nuclear enterprise is one of force degradation resulting from many years of underinvestment, poor execution of modernization programs, and the negative effects of budget sequestration (cuts in funding) on readiness and capacity. While the military has been heavily engaged in operations, primarily in the Middle East but elsewhere as well, since September 11, 2001, experience is both ephemeral and context-sensitive. Valuable combat experience is lost over time as the servicemembers 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 “Weak.”** The Army’s score dropped from “marginal” last year to “weak” this year, a development that can be attributed primarily to a drop in capacity, as the Army has fewer BCTs ready for deployment abroad. The Army’s capability and readiness scores remained static over the past year as the service continued to struggle with recouping readiness levels after years of budget cuts.

In aggregate, the United States’ military posture is rated as “Marginal” and is trending toward “Weak.”

Overall, the Index concludes that the current U.S. military force is capable of meeting the demands of a single major regional conflict while also attending to various presence and engagement activities—something it is doing now and has done for the past two decades—but that it would be very hard-pressed to do more and certainly would be ill-equipped to handle two nearly simultaneous major regional contingencies. As was the case in the preceding year, the consistent decline in funding and the consequent shrinking of the force have placed it under significant pressure. Essential maintenance continues to be 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 shift in two services—the Army and Air Force—to a lower category in the course of a single year is surprising and should be seen as evidence of the rapidly accumulating effects of inadequate funding during a time of higher operational demand and policies that have traded long-term health for near-term readiness.

The cumulative effect of these factors has resulted in a U.S. military that is marginally able to meet the demands of defending America’s vital national interests.
• Navy as “Marginal.” The Navy readiness score dropped from “strong” to “marginal” due to shortfalls in the fleet’s surge capacity requirements. Deferred maintenance has kept ships at sea, but this is beginning to affect the Navy’s ability to deploy. With scores of “weak” in capability (due largely to old platforms and troubled modernization programs) and “marginal” in capacity, the Navy is currently just able to meet operational requirements. Moving forward, the fleet will be further strained to meet operational demands, especially as Reagan-era platforms increasingly near the end of their service lives.

• Air Force as “Marginal.” In 2015, the Air Force flew sorties in support of many named operations, resulting in a higher than anticipated operational tempo. The USAF scored “very strong” in capacity. Capability scored as “marginal,” remaining static since last year’s assessment, while “readiness” dropped from “strong” to “marginal.” Although difficult to categorize, the readiness decline is best attributed to reports that under half of the service’s combat air forces meet full-spectrum readiness requirements. The aggregate score of “marginal” is a decline from the 2015 Index score of “strong,” driven primarily by degradation in capacity and readiness.

• Marine Corps as “Marginal.” As with last year, 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 aging equipment; troubled replacement programs for its key ground vehicles (particularly its amphibious personnel carriers); and a shrinking force. The progress the Corps has made in replacing its rotary-wing aircraft has been a notable bright spot in its otherwise uninspiring modernization portfolio.

• Nuclear Capabilities as “Marginal.” Modernization, testing, and investment in the intellectual/talent underpinnings of this sector are the chief problems facing America’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. Following developments abroad in regions of national interest and increased uncertainty globally, there is now a greater need to modernize U.S. nuclear capabilities, particularly with regard to aging delivery systems. Continued reliance on legacy systems such as the B-52 will eventually diminish the effectiveness of the nuclear triad and lead to the degradation of our nation’s strategic deterrence.

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The Role of a Strong National Defense
William Inboden, PhD

“[The United States Navy is] an infinitely more potent factor for peace than all the peace societies of every kind and sort.”
—President Theodore Roosevelt

Introduction
One of the few core responsibilities of the federal government mandated by the Constitution of the United States is “to provide for the common defence.” Upon commissioning, every American military officer swears an oath to “support and defend” this Constitution. Accordingly, the core mission of the American military is to protect and defend our nation. This means deterring potential aggressors and, if deterrence fails, fighting and winning wars. Any consideration of the military’s role and American defense policy must start with that foundational principle.

Yet if the need for a strong military begins with the mission to fight and win wars, it does not end there. As the quote from Theodore Roosevelt at the beginning of this essay illustrates, American leaders have long appreciated that a formidable military can produce abundant diplomatic and economic dividends, even—especially—when not wielded in wartime. The United States’ military capability supported our nation’s rise to global greatness over the past century, but this was often because of the increased influence and credibility produced by this capability rather than the overt use of force. Along the way, there developed an American strategic tradition that integrated military strength with diplomatic acumen, economic growth, and international influence. It is an historic tradition with an impressive heritage and continuing salience today.

Drawing on the historical record, there are many ways beyond the kinetic use of force that a strong national defense bolsters our national power and global influence. A robust defense budget and defense policy also strengthens our nation in manifest other ways. A well-equipped defense enhances our capabilities and influence across virtually all other elements of national power: our economy, our diplomacy, our alliances, and our credibility and influence in the world. Conversely, an underresourced national defense threatens to diminish our national power across all of these other dimensions.

A strong national defense is thus indispensable for a peaceful, successful, and free America—even if a shot is never fired. The diplomatic successes in building and maintaining a stable and peaceful international order achieved by the United States over the past century have been enabled by America’s military dominance. Conversely, the calamitous defense budget cuts and corresponding rise of potential peer competitors in the present day are already undermining America’s diplomatic and economic influence.

A well-appointed military improves diplomacy with adversaries, strengthens our alliances, signals credibility and resolve, deters aggression, and enhances national morale. Yet this is not to
disregard the manifest other dividends that a strong military can pay. There are multiple pathways by which investments in military hard power produce economic benefits. For example, the military’s role in protecting a stable international environment also creates predictable and secure conditions in which economic growth can flourish. The American security umbrella facilitated Western Europe’s postwar reconstruction and economic revival, and Asia’s half-century economic boom has been partly a function of America’s treaty alliances in the region maintaining peace and stability, exemplified by the United States Navy’s Seventh Fleet protecting an open maritime order, freedom of navigation, and secure sea lanes.

Additionally, while America’s world-leading economy has largely been generated by free enterprise and private sector–led growth, innovations in defense technology can sometimes have economically beneficial civilian applications. There are numerous examples from the past 75 years of technological innovations that originated as defense projects but were eventually adapted for private-sector commercial use, including nuclear energy, jet propulsion, the Internet, global positioning systems, and unmanned aerial vehicles.

**Peace Through Strength**

One of President Ronald Reagan’s favored mantras, still often cited today, was “peace through strength.” Embedded in this slogan are a complex set of strategic assumptions: for example, that a strong military can be effective without being deployed in hostile action, that the acquisition of arms can be inversely proportionate to their use, that military strength pays diplomatic dividends, and that preparedness for war enables the preservation of peace. As described by United States Military Academy professor Gail Yoshitani, in Reagan’s formulation of the “peace through strength” strategy:

> [P]eace was not simply the absence of war. Instead, it was conceived as a world hospitable to American society and its liberal-democratic ideals in which the United States and its allies were free from the threat of nuclear war and had access to vital resources, such as oil, and vital transportation and communications routes. Reagan believed that such a peace was dependent upon US strength, which would come from rebuilding the nation’s economic and military might.⁶

It was a strategic concept in the tradition of Theodore Roosevelt eight decades earlier. For Roosevelt as for Reagan and many other American leaders, “peace” meant more than just the absence of conflict. It encompassed the full flourishing of American interests and ideals and in turn was predicated on an equally expansive concept of national “strength” that included diplomatic, ideological, and economic as well as military quotients.

In recent years, the Obama Administration has introduced a new strategic concept that, while not in direct contradistinction to “peace through strength,” seeks to recalibrate American national security policy by diminishing national defense and elevating international development. This concept is known as the “three Ds” of defense, diplomacy, and development. As described by then-Secretary of State Hillary Clinton in her January 22, 2009, inaugural remarks on her first day at the State Department, “There are three legs to the stool of American foreign policy: defense, diplomacy, and development.”

She elaborated on this the next year in a speech to the Center for Global Development, declaring that “development must become an equal pillar of our foreign policy, alongside defense and diplomacy…. [T]he three Ds must be mutually reinforcing.”

While this concept appropriately recognizes that there is a relationship between sustainable development and improved peace and security, it skews the triad by making development co-equal with defense.⁹ Ironically, given that the Obama Administration intended the three Ds concept to elevate development policy, as implemented, it has instead had the opposite effect. It has left development still at the margins while diminishing defense policy, as evidenced by the draconian cuts in the defense budget over the past six years.

Moreover, in both constitutional and conceptual terms, a strong national defense needs to take primacy over development. A well-equipped military creates an enabling environment for improved development policy. Many of the most notable economic development successes of the past 75 years took place in the context of either an explicit American security umbrella or a more favorable security environment underwritten by American defense policy. The economic development successes of post-war Western Europe and post–Cold War Central and Eastern Europe, as well as the “Asian tigers” such as Japan, South Korea, Taiwan, and Singapore, and the unprecedented growth and poverty alleviation in
Insights from History: Strengthening Diplomacy and National Morale (Theodore Roosevelt)

If the 19th century was characterized by the United States expanding and consolidating its continental control and resolving its internal conflicts through the Civil War, the dawn of the 20th century marked America’s turn outward and debut as an emerging global power. Not coincidentally, Theodore Roosevelt occupied the White House during these early years.

Roosevelt’s foreign policy vision combined an assertive military buildup with deft diplomacy and credible displays of force with restraint in the actual use of force. His increased defense budget focused primarily on building up the Navy, based on Roosevelt’s long-standing belief in the primacy of naval power for strategic force projection. As one of the premier scholars of his foreign policy has observed, Roosevelt embraced the axiom that “power and diplomacy work best when they work together.”

Of the abundant examples that could be drawn from Roosevelt’s presidency, none illustrates this more vividly than his decision to sail 16 American battleships on a 14-month voyage around the world in 1908. Not since Chinese Admiral Zheng He sailed a massive fleet in the 15th century had the world seen such a show of naval force. This voyage of the “Great White Fleet” was as unexpected as it was audacious. In the words of University of Texas–Austin historian H. W. Brands, “Nothing like this had ever been attempted. For the United States to be the first to accomplish it would be a cause for national pride.... Never before had so much naval power been gathered in one place, let alone sent on a grand tour around the globe.”

Roosevelt intuitively understood that an expanded global role for the United States depended in part on popular support from the American people, and this in turn depended on demonstrating to the nation what its Navy could accomplish. In Roosevelt’s own words, “my prime purpose was to impress the American people; and this purpose was...” Here Roosevelt seemed to draw on the insights of his friend Alfred Thayer Mahan, the eminent naval strategist who believed that “national character” constituted one of the six elements of sea power.

Thus emerges an underappreciated aspect of a strong national defense: its salubrious effect in bolstering national morale and civic unity. In sending the fleet on this circumnavigation of the globe, Roosevelt in one gesture reminded his fellow citizens of their nation’s industrial might, technological prowess, audacity, and intrepid frontier spirit. He hoped also to galvanize public support for a sustained international leadership role for the United States.

Domestic public opinion was by no means the only audience that Roosevelt had in mind for this display of naval power. He also intended it to impress a watching world. The leaders of two nations in particular, Japan and Germany, were on Roosevelt’s...
mind. The former had long captured his attention with a mixture of admiration and concern. Roosevelt’s recognition of Japan’s growing power and ambitions had led him to mediate the Treaty of Portsmouth that ended the Russo–Japanese War in ways that recognized Japan’s power and preserved many of its territorial gains. (For this, Roosevelt would become the first American to win the Nobel Peace Prize.) Likewise, his affinity for Japanese culture and industry inspired his support for the immigration of numerous Japanese to California, despite incurring much domestic criticism from Americans with nativist predilections.

At the same time, Roosevelt’s wariness of Japan’s aspirations to regional hegemony had caused him to include provisions in the Treaty of Portsmouth that circumscribed Japan’s acquisitions and preserved Russia’s viability as a check on further Japanese expansion. For some time, Roosevelt had been suspicious of Japan’s potential expansionism, especially against American territories. In an eerily prescient move, several years earlier, while serving as President William McKinley’s Assistant Secretary of the Navy, Roosevelt had tasked the Naval War College with addressing a scenario in which “Japan makes demands on Hawaiian Islands. This country intervenes. What force will be necessary to uphold the intervention, and how should it be employed?”

Against this backdrop of ambivalence about Japan’s growing power and uncertain intentions, Roosevelt targeted a strategic communication toward Tokyo. In Brands’ words, the cruise “would also serve as a reminder to the Japanese, who not surprisingly felt rather proud of themselves, that the United States was a Pacific Power to be reckoned with.” Pace those critics who contended that such visible displays of force would be destabilizing and potentially instigate conflict, “Roosevelt paid no mind to the argument that an audacious American move might provoke a war... [H]e felt that weakness was far more provocative than strength. Consequently, the worse relations with Japan grew, the more necessary he deemed the voyage.” As Roosevelt put it, “My own judgment is that the only thing that will prevent war is the Japanese feeling that we shall not be beaten, and this feeling we can only excite by keeping and making our navy efficient in the highest degree.”

Though it would be six more years until Germany’s growing power and aggression contributed to the outbreak of World War I, Roosevelt was already casting a wary eye at Kaiser Wilhelm’s incipient bellicosity. In the midst of a relatively minor diplomatic dispute between Germany and the United States, Roosevelt wrote to the German leader describing the ongoing voyage: “I trust you have noticed that the American battleship fleet has completed its tour of South America on schedule time, and is now having its target practice off the Mexican coast.” As Brands describes, “The president traced the itinerary—Australia, Japan, China, the Philippines, Suez—leaving unsaid that the German navy had never done anything like this. And he couldn’t resist a final note: “Their target practice has been excellent.”

Roosevelt’s pointed and pithy inscription to the German ruler belied a more sophisticated appreciation of the relationship between military power, diplomatic success, and the preservation of peace. For all of his occasionally bellicose rhetoric, Roosevelt’s presidency is distinguished by the remarkably peaceful expansion of American power and influence. As noted, he understood that a weakened military could provoke aggression and invite adventurism from hostile powers who would otherwise be deterred. Roosevelt knew that a formidable military and a commander in chief with a deft diplomatic touch would be a potent force in dissuading aggressors and preserving peace. It is such a combination of military power and diplomatic acumen that creates national strength.

Roosevelt frequently warned against what he saw as the misguided hopes of disarmament advocates who believed that munitions themselves were destabilizing. These calls for reduced defense budgets and outright disarmament were deluded, he believed, and would increase the risk of war rather than further the cause of peace. As he proclaimed in his annual message to Congress in 1905:

At present there could be no greater calamity than for the free peoples, the enlightened, independent, and peace-loving peoples, to disarm while yet leaving it open to any barbarism or despotism to remain armed. So long as the world is as unorganized as now the armies and navies of those peoples who on the whole stand for justice, offer not only the best, but the only possible, security for a just peace. For instance, if the United States alone, or in company only with the other nations that on the whole tend to act justly, disarmed, we might sometimes avoid bloodshed, but we would cease to be of weight in securing
the peace of justice—the real peace for which the most law-abiding and high-minded men must at times be willing to fight.  

Roosevelt’s insights of over a century ago have much to offer today. He famously and frequently invoked the African proverb, “speak softly and carry a big stick.” During Roosevelt’s presidency, this was translated from a trite aphorism into a sophisticated strategic doctrine. A strong military can bolster national power and influence without ever using force. It can even reduce the likelihood of violence. Rather, the mere display of force can pay significant diplomatic dividends, deter potential aggression, and preserve the peace.

In turn, the effective display of force depends on perceptions of American credibility, and credibility rests on a combination of capability and intention. If other nations (and in some cases, non-state actors) perceive the United States as a credible power—possessing both a potent capability to use lethal force and the willingness to do so if necessary—our nation will have greater power to act on the global stage while facing fewer threats. Developing this capability is predicated on funding and maintaining a military that is without peer.

This strategic doctrine is one of Theodore Roosevelt’s enduring legacies in American history, and it is one which bears remembering and recovering today.

**Insights from History: Signaling Resolve and Supporting Allies (Harry S. Truman)**

At first glance, Presidents Theodore Roosevelt and Harry Truman have little in common. One was a Republican, the other a Democrat. One was an East Coast Harvard-educated blue blood from one of America’s most distinguished familial lineages, the other a Midwestern small-town haberdasher with only a high school education—the last American President without a college diploma. One was the architect of America’s debut at the high table of international politics, the other the befuddled inheritor of America’s new role as a global superpower and the architect of many institutions of the new international order.

Yet Roosevelt and Truman also shared much in common, including a belief in American exceptionalism, a commitment to the universality of liberty and preserving and extending free societies, and especially an appreciation for the role a strong military plays in projecting power and influence, even without the use of lethal force. As with Roosevelt, most of Truman’s enduring national security accomplishments came through the adept employment of military power as a diplomatic and economic instrument of statecraft. Just as our nation still benefits from the international institutions and postwar order he helped to create, there is also much to learn from his integration of a strong defense into the larger structure of national power.

Upon taking the oath of office in April 1945, Truman was bequeathed a situation unprecedented in its complexity and challenges. In short order, he had to navigate:

- The decision to drop the atomic bomb on Japan;
- The end of World War II and the unconditional surrender settlements that would give the United States near-total control of the reconstruction of Germany and Japan;
- The crafting of a postwar international political and economic order that would preserve stability and promote prosperity and ordered liberty; and
- The emerging Cold War with the Soviet Union and its sundry satellite states that would loom over the next four decades of American national security policy as the United States sought to contain Soviet expansionism while preventing the belligerent exchange of nuclear warheads.

It was a tall order for even the most seasoned statesman, let alone a relatively untested and ill-equipped Senator from Missouri.

To appreciate Truman’s strategic innovations, one should recall the fraught and unprecedented international climate of the time. The United States and Soviet Union had fought together as allies in World War II, yet even as the war wound down in 1945, tensions between the two victors emerged over the contours of the postwar order. By the next year, it was becoming clear that Soviet dictator Josef Stalin regarded the United States as an adversary and had aggressive designs to dominate Eastern Europe and points beyond.

This left American leaders struggling to formulate a response amidst what appeared to be the unpalatable choices of either fighting the Soviet Union or acquiescing to the further expansion of
Communist tyranny. Yale historian John Lewis Gaddis aptly described it as “the despair of 1946 when war or appeasement appeared to be the only alternatives open to the United States.” Furthermore, with the end of the war, many feared the prospect of slipping back into the economic depression that had plagued the 1930s.

Into this environment of anxiety and policy uncertainty, George Kennan sent his renowned “Long Telegram” from Moscow, diagnosing Soviet intentions and advocating what became the strategy of containment. Instead of fight or flight, containment offered the option of resisting Soviet aggression without triggering a third world war. But while Kennan may have developed containment as a concept, it took Truman’s leadership and vision to operationalize and implement it in practice.

The success of containment depended largely, though by no means exclusively, on the non-kinetic use of military power. Kennan himself appreciated this. In a 1946 address at the National War College, the lifelong diplomat told his audience, “You have no idea how much it contributes to the politeness and pleasantness of diplomacy when you have a little quiet armed force in the background.” As Gaddis points out:

[T]he mere existence of such forces, [Kennan] wrote two years later, “is probably the most important single instrumentality in the conduct of U.S. foreign policy.” A Policy Planning Staff study done under Kennan’s direction in the summer of 1948 concluded that armed strength was essential as a means of making political positions credible, as a deterrent to attack, as a source of encouragement to allies, and, as a last resort, as a means of waging war successfully should war come.

Truman’s Cold War policy incorporated these insights. From the Marshall Plan, to the creation of NATO, to the passage of the National Security Act creating the Central Intelligence Agency and National Security Council, to the issuance of seminal strategy blueprints such as NSC-68, the Truman Administration created a national and international set of institutions that leveraged military power into diplomatic and economic influence. Two Truman initiatives especially illustrate this concept: the Truman Doctrine providing aid to Greece and Turkey and the Berlin Airlift.

Truman’s 1947 address to Congress is best remembered for his declaration that “it must be the policy of the United States to support free peoples who are resisting attempted subjugation by armed minorities or by outside pressures.” Less appreciated is how the actual aid packages he developed for Greece and Turkey leveraged American military power to strengthen beleaguered allies and signal American resolve to Stalin. Unlike the Marshall Plan announced later that year, which provided economic reconstruction aid to Western Europe, the Greece and Turkey assistance packages also included a substantial military component to help the governments of the two Mediterranean nations defeat Communist insurgencies.

This had not been a foregone conclusion. Several of Truman’s advisers argued for limiting the packages to economic aid, but Truman sided with then-Under Secretary of State Dean Acheson’s arguments for including military hardware and advisers. This reflected Truman’s belief in what political scientist Henry Nau calls “armed diplomacy” and had far-reaching implications. For example, the aid to Turkey included establishment of the Joint American Military Mission to Aid Turkey (JAMMAT), an ambitious Defense Department initiative that transformed the Turkish military and established a template for eventual American military assistance programs with other allies.

The robust American military aid to Greece and Turkey would not have been possible without the expertise and military technology that the United States developed during World War II. In finishing the war as the most dominant military power on the planet, even in the midst of rapid demobilization, the U.S. still had considerable defense resources to employ in support of its friends, allies, and interests. Truman fused military hardware, economic aid, and vigorous diplomacy into a new tool to implement his Cold War strategy. In doing so, he also ushered in a new era in American power projection. The incorporation of military assistance into the program of aid to Greece and Turkey sent a strong signal of American resolve to the Soviet Union and its satellites while also shoring up important American allies during their periods of acute vulnerability.

The next year, an even more vexing challenge emerged when the Soviet Union made an audacious power grab and cut off Western access to West Berlin, the portion of the German capital isolated within the Communist-controlled occupation zone that
would eventually become East Germany. Eschewing either a diplomatic capitulation or a violent escalation, Truman instead ordered a massive airlift to provide food, medicine, and other living essentials to the beleaguered citizens of West Berlin. American military cargo planes operated these resupply flights around the clock for the next 11 months until an embarrassed Stalin backed down and lifted the blockade.

Again, this non-kinetic use of military power had the intended effect of signaling American resolve to Stalin while simultaneously reassuring and strengthening the allied city of West Berlin. This was no mere humanitarian gesture. As Henry Nau has observed, Truman’s “decision to erect Berlin as the outpost of Western freedom was monumental. It...placed American forces at risk to defend the ‘disputed’ borders of freedom in Europe” and “was a preeminent example of the preemptive use of force to deter aggression.”

While one might not normally consider cargo planes delivering food aid to civilians to be the “preemptive use of force,” Nau has it exactly right. Truman deployed American military resources in a formidable display of resolve, at considerable risk, to dissuade the Soviets from their attempted seizure of West Berlin. It was a turning point in the Cold War, as it revealed the Soviet Union’s malign intentions as well as the limits of Soviet adventurism. It galvanized American allies and led directly to the demands of several Western European nations to create what soon became the North Atlantic Treaty Organization (NATO). Without a shot being fired, the American military achieved a significant diplomatic success and made a formidable display of American power.

Concluding Implications and the Contemporary Challenge

Theodore Roosevelt’s “big stick” diplomacy, Harry Truman’s Cold War projections of power, and Ronald Reagan’s “peace through strength” paradigm, while all revealing as historical vignettes, are also much more. They constitute some of the essential building blocks of the American strategic tradition of armed diplomacy—of using military power in non-kinetic ways to improve our negotiating outcomes, reassure allies, dissuade adversaries, and enhance our global credibility and influence.

This strategic tradition has served American interests well and has done much to protect our national security and project our national power over the past century. It has become embedded in our national security institutions and, if properly resourced and utilized, can still be a primary source of national strength. Moreover, while originating in our nation’s past, this strategic tradition has also produced policy successes in recent decades. Consider just a few examples:

- The peaceful reunification of Germany and peaceful dissolution of the Iron Curtain as American diplomacy backed by military strength helped to end the Cold War without a shot being fired;

- The 1995 Dayton Accords ending the Bosnian wars, which followed the American-led bombing campaign and were made possible only because of the threat of additional force;

- Libya’s decision to relinquish its weapons of mass destruction program voluntarily in 2003 in the aftermath of the American display of power in the Iraq War;

- The United States military’s leading role in humanitarian assistance and disaster relief after the 2004 Asian tsunami, which also did much to improve America’s reputation in Muslim-majority nations like Indonesia;

- The upgrading of America’s relationship with India to a strategic partnership during the George W. Bush Administration, based in part on the appeal of America’s military power projection in the region and nuclear technology partnership; and

- The Pentagon’s relationship with the Egyptian military during the recent Egyptian revolutions, which was made possible by America’s decades-long military assistance program and exchanges and which preserved the only viable channel for diplomatic communications in the midst of chaos and changing Egyptian governments.

With such a demonstrable record of success and proven formula for how a well-resourced military strengthens our overall national security policy, the United States now stands at a crossroads. The precipitous defense budget cuts of recent years do not just erode American military strength; they also...
undermine our diplomatic capabilities and our global influence and credibility. Conversely, a renewed commitment to adequate resourcing of the American military would not come at the cost of American diplomacy and economic policy, but rather would be to their benefit. In this sense, the defense budget is not a zero-sum allocation, but a “win-win” that enhances diplomatic and economic policy as well.

The United States in the 21st century remains a global superpower thanks to this strategic tradition of a strong and deftly wielded national defense. Rather than being squandered, it is an inheritance that should be embraced.
Endnotes:

2. Preamble, Constitution of the United States, September 17, 1787.
3. 5 U.S.Code 3331.
4. For more on this tradition, particularly its English roots and its eventual adaptation by the United States, see Walter Russell Mead, God and Gold: Britain, America, and the Making of the Modern World (New York: Knopf, 2007).
23. “National Security Council Paper NSC-68 (entitled ‘United States Objectives and Programs for National Security’ and frequently referred to as NSC-68) was a Top-Secret report completed by the U.S. Department of State’s Policy Planning Staff on April 7, 1950. The 58-page memorandum is among the most influential documents composed by the U.S. Government during the Cold War, and was not declassified until 1975. Its authors argued that one of the most pressing threats confronting the United States was the ‘hostile design’ of the Soviet Union. The authors concluded that the Soviet threat would soon be greatly augmented by the addition of more weapons, including nuclear weapons, to the Soviet arsenal. They argued that the best course of action was to respond in kind with a massive build-up of the U.S. military and its weaponry.” See “NSC-68, 1950,” in “Milestones: 1945–1952,” U.S. Department of State, Office of the Historian, https://history.state.gov/milestones/1945-1952/NSC68 (accessed June 10, 2015).
The Contemporary Spectrum of Conflict: Protracted, Gray Zone, Ambiguous, and Hybrid Modes of War
Frank G. Hoffman, PhD

Hew Strachan, the preeminent military historian at Oxford, stated in a lecture delivered in 2006 that one of our most serious problems today is that we do not know what war is. He put his finger on a critical shortfall in Western thinking about security:

If we are to identify whether war is changing, and—if it is—how those changes affect international relations, we need to know first what war is. One of the central challenges confronting international relations today is that we do not really know what is a war and what is not. The consequences of our confusion would seem absurd, were they not so profoundly dangerous. ¹

The larger problem is that the U.S. has a strategic culture that does not appreciate history or strategy, nor does it devote sufficient attention to the breadth of adversaries facing it and the many different forms that human conflict can take. Many current critics of U.S. policy or strategy in the Middle East or Asia bemoan the aimless state of strategy and policy. While there are deficiencies in U.S. planning and strategy processes, the larger intellectual challenge is a blinkered conception of conflict that frequently quotes the great Prussian soldier Clausewitz without realizing the true essence of his theory and how it applies to the ever evolving, interactive phenomenon we call “war.” Moreover, the U.S. national security establishment too often fails to understand opponents, their strategic cultures, and their own unique conceptions of victory and war.

Current perceptions about the risks of major war, our presumed preponderance of military power, a flawed understanding of irregular war, and our ingrained reliance on technological panaceas like precision-guided munitions (PGMs) and drone warfare make serious defense planning ever harder. This misunderstanding afflicts the military as much as it does political elites and the general public. At least three consequences can be expected from a flawed grasp of contemporary conflict:

- Unreasonable political and public expectations for quick wins at low cost,
- An overly simplistic grasp of the application of blunt military power and what it will supposedly achieve, and
- Naïve views of both adversaries and the context for conflict.

As our own recent history shows, however, the reality is much more complex. War is seldom so clear-cut, and “victory” is far more elusive in reality. The vast majority of conflicts are seldom as precise or as free of casualties or political frustrations as we tend to remember. We prefer Operation Desert Storm (1991) as a simple and satisfying war. It pitted good against evil, and its conclusion was decisive,
albeit not as decisive as World War II. But most conflicts are messy, relatively ill-defined in scope and by objective, with an array of actors, and unsatisfying in outcome.

The conflict spectrum includes a range of activities to which students and practitioners of war refer when attempting to characterize a given conflict by participants, methods, level of effort, types of forces, levels of organization or sophistication, etc. As should be expected in any attempt to define aspects of something as complex as war, there is ample debate over characterizations and definitions, whether one form of war is more or less complex than any other, or whether war can be so neatly categorized as to subdivide it along a spectrum in the first place. Debates over supposedly “new” and generational wars are common today in academic circles, and the prevalence of irregular wars is increasingly recognized.

Generally speaking, large-scale conventional war is rather easy to understand. The term evokes images of tank battles, artillery barrages, planes bombing targets, and large masses of men clashing in battle as depicted in countless movies and books. Similarly, discussions of counterinsurgency (COIN) and stability operations often need little clarification given U.S. involvement in such operations for nearly 14 years in the larger Middle East and Central Asia regions.

Over the past decade, however, other terms have entered the lexicon of national security and defense analysts as they have attempted to describe conflicts that fall short of conventional war but are something substantively different from COIN and stability operations. What follows are descriptions of these other types in order to draw out and clarify the range variation of conflicts we face in the contemporary security environment.

Gray Zone Conflicts and Ambiguous Warfare

Recently, there has been a good deal of discussion about “gray zone” conflicts. This term appears in the 2010 Quadrennial Defense Review (QDR) and has also been reflected in official Japanese government documents. The term captures deliberate multidimensional activities by a state actor just below the threshold of aggressive use of military forces. In such conflicts, adversaries employ an integrated suite of national and subnational instruments of power in an ambiguous war to gain specified strategic objectives without crossing the threshold of overt conflict. Adversaries may employ proxy forces to increase the level of military power being used without losing deniability.

Examples of recent gray zone conflicts include China’s assertive behaviors in the South China Sea, sometimes referred to as “salami slicing tactics” by which they carefully erode the existing international order and attempt to change the norms of international behavior and assert their preferred reinterpretation of existing laws and rules of the road. China’s diplomatic assertions, information announcements, and deliberate use of fishery/maritime security forces to assert sovereignty in and around contested shoals and islands in the Pacific constitute a good case study in deliberately deniable acts of aggression. Russia appears to be following similar tactics in numerous countries, a form of “Simmering Borscht” by Russian officials seeking to extend Moscow’s sphere of influence without triggering an armed response by Western Europe or the United States.

Both cases clearly demonstrate that states that lack the capability to gain their strategic objectives with conventional means can find ways to erode the international order or to paralyze responses by other states through ambiguously aggressive actions. They also demonstrate that states that do possess the necessary conventional means may determine that their objectives can be achieved without resorting to conventional war and that this “gray zone” of war may actually suit their purposes better. These countries seem to recognize that U.S. strategic culture conceptualizes war and peace as two distinct conditions—a perspective that is not held by other cultures.

Gray zone conflicts are aimed at a gap in our intellectual preparation of the battlespace and a seam in how we think about conflict. As noted by defense policy veteran Nadia Schadlow:

By failing to understand that the space between war and peace is not an empty one—but a landscape churning with political, economic, and security competitions that require constant attention—American foreign policy risks being reduced to a reactive and tactical emphasis on the military instrument by default.

Senior U.K. officials have articulated the need to counter what they call ambiguous warfare. The relevance of this term can be seen in Russia’s seizure of
Crimea, as Moscow’s planned actions were deliberately enacted to obscure attribution to Moscow and to paralyze or delay Western responses. But Russia’s activities in eastern Ukraine, where over 7,000 fatalities and sizable battles have occurred, are anything but ambiguous: Russian forces, Spetsnaz advisers, armor, and artillery are employed there in direct support of Russian separatists. It is neither masked nor concealed.

The war in eastern Ukraine is not just a proxy war; it is a combination of advanced military assets with irregular forces, propaganda, and coercion of the civilian population. Vladimir Putin may elect to disavow these forces, promulgate new laws making any public notice of Russian casualties illegal, and cremate the bodies of his fallen soldiers to avoid revealing the depth and mounting costs of Russian involvement, but none of this makes the conflict anything other than a Russian operation.

Russia’s larger set of activities against the West do not involve warfare as the U.S. has traditionally defined it. Moreover, “warfare” connotes a defense-centric response or a principal responsibility in solely military terms. Thus, “gray zone” or “ambiguous conflicts” are better terms that convey the complex nuances of such conflicts.

Irregular Wars

Irregular wars can be fought by states but generally involve non-state actors using sub-conventional capabilities including ambushes, raids, and minor attacks. Existing U.S. doctrine defines irregular warfare as a violent struggle among state and non-state actors for legitimacy and influence over the relevant populations. U.S. defense efforts in irregular warfare can include counterterrorism; unconventional warfare; foreign internal defense; counterinsurgency; and stability operations that, in the context of irregular warfare, involve establishing or reestablishing order in a fragile state or territory.

Irregular warfare is characterized by indirect and asymmetric approaches that avoid direct and risky confrontations with strong forces. The goal for an irregular force is to erode its adversary’s power, legitimacy, and will. Such conflicts are usually drawn out or protracted in time. They can include insurgencies, counterinsurgencies, terrorism, and counterterrorism. Modern cases of irregular warfare increasingly include activities that we traditionally characterize as criminal behavior, and transnational criminal organizations may be present in such conflict. The level of violence in irregular wars can be low but can flare quickly with attacks or acts of terrorism.

These conflicts are well above the more indirect and less violent levels seen in gray zone conflicts but below the threshold of conventional war where armor, artillery and airpower assets are employed with greater degrees of integration and violence between combatants. The Islamic State or Daesh represents the high end of an irregular adversary, with high levels of adaptability and increasing lethality.

Terrorism is a subset of irregular warfare. Terrorism is often a label assigned to certain types of armed groups rather than an accurate description of their mode of war. The official definition found in Title 22 of the U.S. Code provides that terrorism is “premeditated, politically motivated violence perpetrated against civilians or noncombatant targets by subnational groups or clandestine agents.” It could be a tactic of a revolutionary movement, or it could be the strategy of choice for a small cell of zealots.

There is widespread consensus in the security field that the democratization of lethal means of conflict will embolden small networks or even individuals to greater violence. Not much more than a decade ago, several forecasters projected a new age in ultra or catastrophic terrorism in which terrorists would attempt to kill thousands of Americans in a single day. They were routinely ignored until 9/11. Politically motivated violence against innocent non-combatants has continued to evolve, with increasing numbers of large-scale attacks occurring in several ongoing conflicts, most of which are centered in civil wars. U.S. intelligence officials believe such conflicts (Nigeria, Libya, Yemen, Syria, and Iraq) constitute a major near-term threat to our interests.

The past few years have seen a significant rise in terrorist attacks and fatalities. Much of this increase is connected to Islamic extremists. The U.S. government-sponsored National Consortium for the Study of Terrorism and Responses to Terrorism (START) reported some 8,400 terrorist attacks in 2012, with 15,400 fatalities. The aggregate of fatalities is also increasing, as these attacks produced more than 17,800 deaths and 32,500 injuries in 2013.

In 2014, the number of terrorist attacks jumped 35 percent, to 13,500, while the number of fatalities soared 81 percent, to 33,000. The majority of these attacks (60 percent) occurred in five countries.
(Iraq, Pakistan, Afghanistan, India, and Nigeria), and almost 80 percent of fatalities from terrorist attacks also took place in five countries (Iraq, Nigeria, Afghanistan, Pakistan, Syria). Over 9,000 people were kidnapped, representing a 300 percent increase. The most significant increase was in large-scale attacks (those that kill over 100 people), which jumped tenfold from two to 20.\(^\text{18}\) (For the most violent states and global totals for 2014, see Table 1.)

Al-Qaeda’s evolving but persistent threat is just one element in this projection.\(^\text{19}\) There is no doubt that the core of the old al-Qaeda has been transformed.\(^\text{20}\) Some analysts contend that it has a better strategy, deeper bench, greater resilience or dexterity, more appeal, and higher amounts of sanctuary than imagined.\(^\text{21}\) As START Executive Director William Braniff has noted, “groups generally associated with al-Qa’ida remain the most lethal groups in the world.”\(^\text{22}\) Worse, ISIS is competing with al-Qaeda for influence, assets, and recruits and is more nuanced in how it employs violence and combines terrorism, repression, and services.\(^\text{23}\)

Violence is not limited to the Middle East or South Asia. Boko Haram, for example, is considered responsible for over 10,000 deaths since 2001. It was designated a terrorist organization by the U.S. Department of State in 2013. Recent congressional reports have highlighted this group’s linkages to al-Qaeda and potential for direct threats to American interests.\(^\text{24}\) Its leader, Abu Bakr Shekau, pledged allegiance to Islamic State emir Abu Bakr al Baghdadi in March 2015.\(^\text{25}\) Boko Haram’s grisly campaign includes a suicide attack on a U.N. building in Abuja in 2011, repeated attacks that have killed dozens of students, and the kidnapping of 250 girls in 2014.\(^\text{26}\)

To help the reader, a construct for a spectrum of conflict is presented in Figure 1.

### Hybrid Wars

Building on Marine General Charles Krulak’s depiction of future wars as the “stepchild[ren] of Chechnya,”\(^\text{27}\) U.S. Marine analysts identified trends suggesting deliberate efforts to blur and blend methods of war. This forecasted convergence evolved into a theory of hybrid threats.\(^\text{28}\) The projection was borne out by the example of Hezbollah in Southern Lebanon a few years later and appears to be relevant to other conflicts as well.\(^\text{29}\) Two Secretaries of Defense in the United States found the concept useful,\(^\text{30}\) and numerous other military leaders, including Chiefs of Staff of the Army and several Joint leaders, recognized that current “bins” were not matching up with contemporary conflict.\(^\text{31}\) Hybrid threats are now part of the lexicon used by the senior levels of the U.S. military in the Quadrennial Defense Reviews, in national-level intelligence reports on the future character of war, and in various top-level documents of other countries.\(^\text{32}\) Some European military analysts, pushed by Russia’s example, have also embraced the hybrid evolution as a feature of contemporary conflict.\(^\text{33}\)

### TABLE 1

**Countries with the Most Terrorist Attacks in 2014**

The number of terrorist attacks worldwide jumped 35 percent from 2013 to 2014, and fatalities rose 81 percent. The majority of these attacks (60 percent) occurred in just five countries.

<table>
<thead>
<tr>
<th>Total Attacks</th>
<th>Wounded</th>
<th>Fatalities</th>
<th>Average Killed per Attack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iraq</td>
<td>3,370</td>
<td>14,956</td>
<td>6,378</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1,821</td>
<td>4,989</td>
<td>2,315</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>1,591</td>
<td>3,717</td>
<td>3,111</td>
</tr>
<tr>
<td>India</td>
<td>763</td>
<td>717</td>
<td>405</td>
</tr>
<tr>
<td>Nigeria</td>
<td>662</td>
<td>457</td>
<td>1,817</td>
</tr>
<tr>
<td>Syria</td>
<td>232</td>
<td>1,773</td>
<td>1,074</td>
</tr>
<tr>
<td>Worldwide</td>
<td>13,463</td>
<td>34,791</td>
<td>32,727</td>
</tr>
</tbody>
</table>

The term “hybrid” reflects more than a cross-breeding or blurring of regular and irregular tactics. It was originally defined as involving “Any adversary that simultaneously and adaptively employs a fused mix of conventional weapons, irregular tactics, catastrophic terrorism, and criminal behavior in the battlespace to obtain desired political objectives.”34 The crime, socially disruptive behavior, and mass terrorism aspects of hybrid warfare should not be overlooked, but the fusion of advanced capabilities with the fluidity of irregular tactics is key and has been borne out repeatedly over the past decade. Hybrid theory is also seen in Russian campaigns in Georgia and Ukraine.35 In the Crimea, Russia demonstrated that it had learned from its performance in Georgia in 2008 and had sought more indirect and hybrid methods.36 This was hardly new or “ambiguous,” but it was effective under very unique circumstances. This led the Secretary General of NATO in Brussels to employ the term as well.

Putin is certainly not reinventing warfare, but a new generation of leaders, spawned within the KGB, are clearly applying long-standing Russian concepts of protracted conflict that are not well understood by Americans.37 The chief of Russia’s general staff noted in 2013 that “War and peace, are becoming more blurred. Methods of conflict have changed, and now involve the broad use of political, economic, informational, humanitarian and other non-military measures.”38 What some call the “Gerasimov Doctrine” is consistent with the trends identified by U.S. military theorists and the intelligence community about hybrid threats. For this reason, hybrid warfare is now an explicit discussion point at NATO and major European think tanks.39

It also applies to Iranian doctrine and exercises.40 Hybrid threat theory is most often tied to ground conflicts, but Iranian naval force investments and exercises clearly demonstrate that high-tech, swarming, hybrid war at sea is possible.41 Iran’s mixture of fast but lethal small boats, mini-submarines, mines, illegal seizures, advanced anti-ship cruise missiles, and threats to interdict vital oil lanes is very representative of a hybrid maritime threat.

Some analysts have recently conflated hybrid threats “with incremental approaches to remain below the threshold of intervention from the U.S. or our allies.”42 Such an extension of hybrid threat theory is understandable given the theory’s sourcing from Russian and Chinese writings, which deal with the fusion of various non-military tools (finance, propaganda, lawfare, etc.) with threats of force. However, as noted earlier, the “below the threshold” idea fits better with gray zone or ambiguous conflicts, which involve conflict activity short of violence. Hybrid threats ably combine various modes of fighting in time and space, with attendant violence in the middle of the conflict spectrum. Gray zone conflicts do not cross that threshold and use a different mix of methods, entirely short of bloodshed.

### Unconventional Conflict

Some authors have advanced the concept that we need to reinvigorate U.S. capacity to engage in “warfare” with greater agility at lower levels short of war. Max Boot and Dave Maxwell have noted American deficiencies in responding to foreign sources of conflict that the United States used to deal with during the Cold War.43 They have refreshed George Kennan’s arguments from the 1950s for the institutionalization of U.S. capacity for political warfare, which Kennan defined as:

> the employment of all the means at a nation’s command, short of war, to achieve its national objectives. Such operations are both overt and covert. They range from such overt actions as political alliances, economic measures, and “white” propaganda to such covert operations as clandestine support of “friendly” foreign elements, “black”
psychological warfare and even encouragement of underground resistance in hostile states.⁴⁴

Kennan’s definition of political warfare is misleading. His concept has little to do with warfare per se; it is largely about non-military efforts associated with subversion or counter-subversion. While these can have a political element to them, in terms of aiding political groups and factions, the range of efforts involved goes beyond the diplomatic and political sphere.

But there is little doubt that unconventional warfare and the types of techniques included in Kennan’s definition of political warfare are relevant to the 21st century.⁴⁵ Unlike other forms of warfare in the proposed spectrum of conflict, unconventional warfare does not fit easily within a spectrum in terms of the scale of violence. Moreover, unconventional warfare can occur concurrently with other methods in both peace and war. Thus, it is depicted in Figure 1 as ranging across the entire spectrum, not just by the intensity of violence.

This concept would seem to have great merit as a response to both Russian and Chinese actions in gray zone conflicts, since neither state embraces the idea that war and peace are binary conditions. Both of them, as well as other strategic cultures, envision a more complex continuum of cooperation, competition, collaboration, and conflict. Moreover, many other nations do not organize their government institutions with the same black-and-white military and non-military distinctions as the U.S. maintains. There is evidence that some components of the U.S. military are devoting intellectual capital to this issue,⁴⁶ and Congress has shown interest in assessing U.S. capabilities in this domain. By its nature, a U.S. capacity for unconventional warfare would involve the ability to develop and execute a strategy that tightly integrated measures needed to counter the subversion, propaganda, and political actions of gray area conflict short of actual warfare.

Experience with the Russians, both during the Cold War and more recently, suggests that the admixture of political/economic/subversive activity remains an element of their operational art and one that we would be well advised to begin studying so that we can counter it.⁴⁷ For example, the information domain will be increasingly contested. Both states and non-state groups will exploit the Internet and other forms of social media across the conflict spectrum.⁴⁸ We can expect to see cyber insecurity and information warfare attacks as part of any serious challenger’s portfolio, with such tools rapidly evolving to the point where they should be considered a “combat arm” of the unconventional threat.⁴⁹

Limited Conventional War

To the right of hybrid conflicts on the spectrum, we next consider “limited” wars. These are generally fought between state actors using conventional military means but are bounded by such limiting considerations as geographic boundaries, types of targets, or disciplined use of force.

When considering objectives being pursued with military means, one man’s limited war is admittedly another’s total war. As an example, the U.S. invasion of Iraq in 2003 was conceived and executed within the limited category. Overthrowing Saddam Hussein’s regime by conventional force of arms was an absolute objective, and Hussein’s efforts to prevent its achievement made the war an unlimited event fought for survival, but the conduct of the war by the U.S. was highly disciplined in target selection, geographic setting, initial objectives, and the way in which military force was used.

Sir Lawrence Freedman has applied the term “limited conventional war” to describe the Ukrainian conflict,⁵⁰ but there are two problems with this classification in this instance.

First, as a concept emanating from Cold War–era discussions of the application of nuclear weapons, it addresses Moscow’s objectives but says little about the details of Russia’s strategy or methods. In fact, most wars are inherently limited by objective or means of fighting. Clausewitz’s theoretical ideal of “absolute wars” is rarely pursued. Thus, the term has little intellectual value or granularity since it makes few useful distinctions other than stating the obvious: that Russia is not actively using the full range of its strategic arsenal. More particularly, it says little about Kiev’s perspective, as the dismemberment of Ukraine is hardly a limited matter for that government.

Second, limited wars are generally conventional wars, conducted by state actors that are relatively open about operating short of their full military capacity in pursuit of limited aims. This is something that, because of Russia’s deliberate ambiguity and opaqueness in its activities, is not terribly relevant or accurate with regard to the character of conflict in eastern Ukraine or the methods Russia is using to obtain its policy aims.

The challenge of characterizing any conflict aside, this remains a necessary and useful category
to describe conflicts between regional powers or by a major power along its borders, if only because it facilitates informed debate on corresponding policies, diplomatic and political responses, and one's own military efforts.

**Major Theater War**

After more than 20 years of peace support, stability, and counterinsurgency operations in Africa, the Balkans, and the Middle East, many in the security community have lost sight of the potential for major theater wars. In fact, a lot of pundits mistakenly believe that great-power competition and serious large-scale combat are things of the past. Sadly, they are wrong. There have been positive trends in reduced levels of interstate conflict for a generation, but several key conditions that buttressed that era of strategic stability are being eroded.

The prevailing American-led power structure has contributed to subdued levels of interstate conflict and war. However, that system and its attendant security are being challenged by major powers, abetted by a reduced U.S. presence in key regions and diplomatic affairs relative to the Cold War era and by some regional players who are building up or pursuing nuclear weapons and acquiring other destabilizing weapon systems. Alterations in the current power system by China’s significant economic development and rapid military modernization, or by Russia’s more militaristic approach to its security interests in Europe, the Arctic, and elsewhere, conceivably could produce circumstances in which great-power competition erupts into a war.51

Even academics favoring a less assertive foreign policy and a smaller U.S. military admit that “[h]istorically, transition periods marked by hegemonic decline and the simultaneous emergence of new great powers have been unstable and prone to war.”52 The emergence of rising powers generates armed conflict with the existing predominant powers.53 Major conflict can also be generated by fears of declining powers that may be inclined to take far greater risks to preclude losing prestige or influence. Russia’s actions during the past two years give some clues as to the potentiality for interstate war from a power that cannot resolve its lost capacity to sustain its status or that seeks to deflect public attention from a declining domestic condition.

Great-power conflict is never inevitable, but for evidence of a disturbing trend, it should be noted that while U.S. military budgets are being reduced some 25 percent in real terms, aggregate military spending in Asia is on the rise and is now greater than total spending in Europe.54 Moreover, spending by European allies of the U.S. is down sharply as they attempt to reestablish their economic growth while holding on to social safety nets.

Declines in the preponderance of U.S. power in the Asia–Pacific theater have reduced conventional deterrence, and China’s military expansion could accelerate instability. The United States is challenged to demonstrate that it retains the ability to conduct military operations in the Asia–Pacific region and fulfill its treaty obligations to its allies. This requires a military capacity—one that is growing increasingly suspect—to achieve two critical U.S. objectives: maintaining freedom of the commons (air, sea, space, and cyberspace) and limiting the potential for large-scale regional conflict through deterrence. The goal, one strategist noted, “is to leave everyone in Asia believing that when it comes to solving regional problems, there are better answers than the force of arms.”55

In addition to great-power competition, conflicts can be stoked by weak leaders exploiting sectarian tensions for personal political benefit or buttressing their legitimacy by appeals to nationalism. This can produce aggressive or irrational acts. Nationalist fervor can spin out of control, inflating fears or goals beyond cold calculations of national interest and political compromise, which in turn can lead to gross miscalculation and aggressive actions that increase the odds of conflict. The possibility that this might occur in Asia cannot be overlooked. Meanwhile, in Europe, Putin often exploits the deepest chords of Russian nationalism and Orthodox Christianity to buttress his melting political capital.56

The combination of decreased American engagement and military capacity with the overt aggressiveness of two authoritarian states that do not hesitate to flout accepted norms of international behavior is not helpful. The U.S. is facing the increased potential for major conflict between large states that have advanced and potent military capabilities. Any comprehensive assessment of the overall force size, capabilities, and readiness levels of the U.S. military should raise concerns about the country’s ability to handle such a major crisis, even noting that perceptions of American weakness can prompt militarized opportunism.

America has entered an era in which its technological advantage is rapidly being eroded and its
military superiority is increasingly being challenged. This has led to calls from the Pentagon to energize efforts to seek a leap-ahead technology to offset its lost technical dominance. 

Given the high possibility of sustained small conflicts (gray, irregular, and hybrid), the potential incidence of limited and major conflict also increases, because any American Administration can find itself without adequate means to deter or defeat attacks from opportunists or aggressor states. Moreover, readiness funding levels to cover the full range of training tasks needed for the spectrum of threats for which the military must be prepared are lacking.

The world has enjoyed a holiday from major-power war for quite some time. The aggregate effect of America’s potent strategic deterrent, military preparedness, and robust alliances produced a long peace. All of these contextual conditions are now at risk as a consequence of sequestration and the West’s reduced willingness and capacity to take active measures to sustain an international order that was carefully designed and sustained to preserve peace. As former Pentagon official Dov Zakheim has observed, “The whittling away of American preeminence that we have witnessed over the past decade was not foreordained. It was the product of conscious choices....” We should consciously reset those choices to be better prepared for tomorrow’s conflicts.

Conclusion

The U.S. national security community should avoid narrow categorizations. The black-and-white distinction between war and peace, or traditional war and irregular war, makes for nice, simple boxes, but the real world is not so easily categorized. In fact, some adversaries seek to exploit U.S. paradigms and the gaping institutional seams that they create.

Rather, we need to embrace the fact that future opponents have their own ideas about how to fight, and they tend to mix and match those ideas with deliberate combinations of modes of conflict. Hard-wired and quaint notions of declared wars between states with symmetrically equipped armies and navies facing each other on defined battlegrounds are no longer helpful. The U.S. must expand its definitions and concepts beyond its history, cultural biases, and organizational preferences. Ultimately, its security is predicated upon its national security community’s being aware of the enduring continuities of war and possessing an adaptive ability to counter the many forms that warfare can take.

The United States faces adversaries capable of using strategies and techniques across the entire conflict spectrum. It must not give ground in gray zone conflicts if its interests are challenged. Europe and the Middle East today are a Petri dish of hybrid conflict, and the Defense Department’s current leadership team understands this evolving hybrid challenge. The U.S. needs to prepare for that, and reinvigorating its unconventional conflict capability will help.

We should not lose sight of the reality that the “gold standard” for high-end conventional war is based on excellence in joint combined arms warfare. Large-scale conflict between states is not a relic of history. The potential for interstate war still exists and is arguably increasing. It is the most demanding form of war with the most costly of consequences, and the U.S. is less prepared for it than it should be—a concern raised in the bipartisan Independent QDR Report, which found that the U.S. is seriously short-changing its national security interests. Appreciating the broad range of challenges and threats we face is the first step toward recognizing a growing danger.
Endnotes:


10. The term “democratization of violence” relates to the increased access to lethal capabilities contributing to persistent instability and the rising power of non-state actors. The increased access to a range of small arms, crew served weapons, and indirect fire weapons, and improvised explosive device developments are augmented by the inexpensive, off-the-shelf, innovative technologies being applied by terrorists, rebels, insurgents, protestors and a range of non-state actors such as e.g. small-to-medium size unmanned vehicles/drones, robotics.” See Derek Harvey, “What Is the Democratization of Violence?” October 5, 2014, http://derekharvey.org/2014/10/05/what-is-the-democratization-of-violence/ (accessed July 9, 2015).


15. The National Consortium for the Study of Terrorism and Responses to Terrorism (START) describes itself as “a Center of Excellence of the U.S. Department of Homeland Security.” It is hosted by the University of Maryland, College Park, Maryland. See START, website, last updated June 2015, http://www.start.umd.edu/gtd/ (accessed July 9, 2015).


39. Rasmussen, quoted in Landler and Gordon, “NATO Chief Warns of Duplicity by Putin on Ukraine.”


44. For Kennan’s policy memo promoting this initiative under the auspices of the State Department, see “Policy Staff Planning Memorandum,” May 4, 1948, http://academic.brooklyn.cuny.edu/history/johnson/65ciafounding3.htm (accessed July 15, 2015).


Preempting Further Russian Aggression Against Europe

Martin Hurt

Introduction

The occupation and illegal annexation of Crimea and the subsequent war in eastern Ukraine indicate that Russia is both able and willing to use military force against neighboring nations. This should not come as a surprise considering Russia’s invasion of Georgia in 2008.

A few years earlier, nine of Russia’s neighbors decided to join the North Atlantic Treaty Organization (NATO) after the end of the Cold War to secure their paths toward free and democratic societies. As a result, NATO enlargements in 1999 and 2004 saw Estonia, Latvia, Lithuania, Poland, Hungary, the Czech Republic, Slovakia, Romania, and Bulgaria join the alliance. These European nations are now part of the collective defense system in which the United States remains the most powerful member.

The alliance has held thus far, but in recent years, Russian President Vladimir Putin has challenged the post–Cold War world order. NATO members that share borders with Russia and have large ethnic Russian populations are under severe political, military, and economic pressure from Moscow. Ukraine, which is not a member of NATO or the European Union (EU), has Russian forces on its soil and has struggled to maintain its sovereignty, having lost Crimea and large swaths of its Eastern mainland territory to Russian-backed separatist groups.

Without U.S. leadership in this region, Europe is not likely to have the strength or resolve to resist further Russian aggression. Though similar incursions within NATO members’ territory are considered less likely, if European powers continue their implicit approval of Russia’s aggressive actions, Eastern NATO members fear that their own territorial integrity is at risk.

Reassuring European Allies

When Russian forces occupied Crimea on February 27, 2014, NATO responded quickly by employing measures aimed at reassuring its easternmost member states. NATO strengthened its Baltic Air Policing mission, with the U.S. initially shifting some fighter and tanker aircraft from the United Kingdom to Lithuania to join aircraft already based there. A month later, the North Atlantic Council (NAC) decided to strengthen NATO’s collective defense and demonstrate the alliance’s solidarity by deploying additional aircraft, ships, and land force units eastward, including to the Baltic Sea region. A week later, four mine countermeasure vessels and a naval auxiliary ship were deployed to the Baltic Sea.

At the end of April, four companies of the U.S. 173rd Airborne Brigade (based in Vicenza, Italy) were sent to Estonia, Latvia, Lithuania, and Poland to join national defense forces in conducting exercises and shoring up security in the region. NATO’s Air Policing Mission also increased the number of aircraft involved and expanded geographically, with four Danish F-16s beginning patrols from Ämari Air Base in Estonia. The U.S. contributed the majority of the assets to this effort.
America’s presence in Central and Eastern Europe has been maintained through Operation Atlantic Resolve, involving exercises and training on land, in the air, and at sea while sustaining a rotational presence across Europe. As part of both the 2015 National Defense Authorization Act (NDAA) and the 2015 Defense Appropriations Act, the European Reassurance Initiative provides $1 billion in funding to enable the Department of Defense to continue its efforts to reassure NATO allies and bolster the security and capacity of partners in the region. The units from the 173rd Airborne Brigade initially deployed to the Baltic States and Poland were eventually replaced with units from the 1st Cavalry Division and the 3rd Infantry Division. The 3rd Squadron, 2nd Cavalry Regiment, also undertook the “Dragoon Ride,” a 1,100-mile convoy of over 600 soldiers and 120 military vehicles across six European countries in March 2015. This exercise was an attempt to demonstrate solidarity among the allied nations and a chance for the U.S. military to interact with local populations.

The NAC’s March 2014 decision to bolster collective defense forces was intended to reassure Eastern European member states and demonstrate to Russia that the alliance was resolved to defend itself. The U.S. government likewise created the European Reassurance Initiative to show its commitment to upholding NATO members’ security and territorial integrity. These activities have been described as aiming “to offer reassurance to countries that are feeling nervous about President Vladimir Putin’s intentions in the region.” The units that were sent to the Baltic States and Poland were therefore sent primarily to underscore solidarity among NATO members rather than to deter Russia by deploying significant combat units. Western decision-makers assumed that Russia would continue to be deterred solely by a capability-and-capacity comparison between the forces of Russia and the forces of NATO. The problem with this assumption is that the United States provides most of NATO’s military capabilities and that few of them are in Europe.

Another factor that undermines NATO’s credibility has been its member states’ continued failure to make defense a priority. For example:

- The U.S. Army is reducing the number of assets and personnel permanently assigned to its only European-based Combat Aviation Brigade (CAB), adopting instead “continuous rotational” deployments. The 12th CAB in Germany will lose 24 Boeing AH-64 Apaches; 30 Sikorsky UH-60 Black Hawks (plus nine HH-60 medical evacuation platforms); three Boeing CH-47 Chinook helicopters; and the Bell OH-58D Kiowa Warrior scout fleet, which is being divested from the U.S. Army. In addition to these aircraft reductions, the 12th CAB will lose 1,900 personnel. This step likely undermines the effectiveness of Operation Atlantic Resolve.

- The so-called Minsk II agreement among Ukraine, Russia, France, and Germany in early 2015 has indirectly legitimated Russia’s aggression against Ukraine and removed the occupation of Crimea from the European community’s agenda. Statements made by European politicians during the Minsk negotiations betrayed a belief that a deal—even one likely to be repeatedly violated—was so vital that its deleterious impact on deterrence was an acceptable price to pay. According to German Defense Minister Ursula von der Leyen, the delivery of weapons to the government in Kyiv would not help to end the conflict. Thus, while Russia has deployed its forces to Crimea and eastern Ukraine and is also sending weapons, supplies, and contractors to their proxies, the West still hesitates to deliver lethal weapons to the democratically elected government in Kyiv.

**Russia One Step Ahead of the West**

Russia has repeatedly surprised European nations by launching unannounced “snap exercises.” The term “snap exercises” (sometimes called “snap inspections”) refers to major military exercises ordered with little or no notice. The Russian military has claimed that the purpose of such exercises is to test the readiness of its forces, but observers have argued that they are meant to impress the West with Russia’s military strength. In 2014 and 2015, Russia raised concerns among its neighbors by conducting a series of “snap exercises” of a magnitude not previously seen.
An exercise on December 5–10, 2014, focused on the units in Kaliningrad oblast and involved 9,000 servicemen, 250 tanks and armored personnel carriers (APCs), over 100 artillery units, 55 warships and the Iskander ballistic missile system. According to one expert, it is believed to have included practice for a surprise attack against a Baltic Sea nation with a brigade-size airborne unit from the Russian 76th Guards Air Assault Division from Pskov, near the Estonian border. The exercise also included sorties by nuclear-capable Tu-95 Bear strategic bombers and Tu-22M Backfire long-range bombers.

On February 16, 2015, Russia's Defense Ministry started a “snap inspection” of its paratrooper units in western Russia. In the Pskov region, close to the Estonian border, an exercise involved some 2,000 troops and 500 units of military equipment.

In March 2015, without previous warning, Russia conducted a five-day exercise involving 45,000 troops, 3,000 vehicles, 110 aircraft, 15 submarines, and 40 surface vessels. The Russian Northern Fleet was brought to full combat readiness.

The early warning capabilities of NATO member states including the United States have not been successful in forecasting these exercises and operations. General Philip Breedlove, Commander, U.S. European Command (EUCOM), and Supreme Allied Commander, Europe, told the Senate Armed Services Committee in April 2015 that:

Russian military operations over the past year, in Ukraine and in the region more broadly, have underscored that there are critical gaps in our collection and analysis. Some Russian military exercises have caught us by surprise, and our textured feel for Russian involvement on the ground in Ukraine has been quite limited.

Additionally, Lieutenant General Ben Hodges, Commander, U.S. Army in Europe (USAREUR), was impressed by the speed with which Russia can move 30,000 troops and 1,000 tanks.

On the political level, NATO member states have employed a reactive approach vis-à-vis Russia. This is best reflected in the Readiness Action Plan approved by allied leaders at NATO's Wales Summit in September 2014. In addition to the previously cited assurance measures, the plan includes adaptation measures aimed at raising readiness, enhancing responsiveness by increasing the size of the NATO Response Force (NRF), and creating a brigade-size Very High Readiness Joint Task Force (VJTF), as well as conducting more exercises. The importance of the Readiness Action Plan should not be underestimated, but it also should not be overemphasized. The details of the classified plan were subject to a lengthy drafting process and should therefore be seen as a compromise between the member states that share a border with Russia and other members that, at least at the time, had more difficulty appreciating the extent of the Russian threat.

One of the assumptions upon which the Readiness Action Plan relies is the ability of NATO's North Atlantic Council to forecast Russian military action, take necessary decisions, and actually deploy the VJTF before Russia uses its Anti-Access/Area Denial (A2/AD) capabilities in the Baltic Sea region, primarily in Kaliningrad. This is a complicated task for several reasons:

1. The reluctance among Western decision-makers to consider the use of military force. Western political leaders have repeatedly demonstrated that they consider an escalation of a tense situation to be something negative per se, even if the aim of such escalation would be to change the behavior of an aggressor. Numerous examples were seen in 2014 when the heads of state of the United States, Germany, and France were eager to warn against any steps that would escalate the situation in eastern Ukraine. Among the other excuses often used to justify Western passivity is the need to maintain a constructive dialogue with Russia through shuttle diplomacy. Would the same political leaders really instruct their ambassadors in NATO to deploy the VJTF before a military conflict and thus risk escalating the situation?

2. Russia’s A2/AD capabilities. If Russia's behavior does in fact rise to a level that would trigger NATO deployment of the VJTF, Russia would not likely refrain from using its A2/AD capabilities. Russia continues to invest in programs that increasingly can limit or deny NATO forces access to some of the alliance's easternmost member states. There should be little illusion that Russia's leaders will cease these programs.
3. The small size of the VJTF. The VJTF, a brigade-size unit, would be useful in a scenario in which Russia would deploy only a fraction of its forces against a NATO member state, similar to the hybrid war scenario demonstrated in Ukraine before August 2014. In the case of a large-scale scenario involving units that have been tested through unannounced “snap exercises,” only the entire 30,000-strong NATO Response Force would offer the required size.

Thus, NATO’s Readiness Action Plan is too focused on response and contemplates only symbolic effort to preempt Russian aggression against NATO member states. The reassurance measures implemented by the U.S. and other NATO members work only up to a certain point. If Russia is not deterred, then the Kremlin might be tempted to use military force against one of the Baltic States to prove that Article 5 of the Washington Treaty will not be invoked.

What Next?

One might be tempted to conclude that if Western leaders continue to cut defense spending and more U.S. forces are withdrawn from Europe while Russia’s modernization program is advancing, then the comparative strength of Russia’s military vis-à-vis NATO in Europe will inevitably increase. If Western decision-makers aim to de-escalate a potential conflict, then the right thing to do from Russia’s viewpoint would be to escalate by using military force whenever the gains would exceed the cost of doing so. In the short term, even if NATO responded militarily, the alliance could muster only a small number of forces in Europe. Additional U.S. forces would need to be transported to Europe from the United States, similar to what was planned in the event of a Soviet attack on Europe during the Cold War.

In the 1980s, however, around a quarter of a million U.S. troops were stationed in West Germany, ready to take the first Soviet blow. Today, there are 150 troops in each of the Baltic States plus Poland. The current U.S. force posture in Europe reflects the environment after the attacks of September 11, 2001, when Russia was seen as a partner, not as a potential adversary. Operation Atlantic Resolve has no strategic impact on Russia’s behavior.

Through its incursions into Georgia and Ukraine, Russia has demonstrated that it considers the use of military force to be an acceptable method for achieving its strategic goals. Experts believe that a military conflict between Russia and NATO members could occur in two different ways.

In the first scenario, it is possible that Russia could exploit Russian-speaking minorities living primarily in Estonia and Latvia by raising the level of dissatisfaction through disinformation and launch a so-called hybrid war. For years, the Kremlin has targeted the Russian speakers in the Baltic States with tailor-made propaganda. Political instability would weaken the national governments and eventually lead to a situation in which “local separatists” consisting of activists, criminals, and members of volunteer movements opposed what they would characterize as fascist regimes in Tallinn and Riga. If national law enforcement failed to reinstate constitutional order, national governments would turn to their NATO allies and ask that collective defense mechanisms be invoked. It would not be farfetched to believe that more than one member state would hesitate before agreeing to deploy its NATO forces to restore law and order.

Thus, the primary aim of military action against the West would not be to gain territory, but to demonstrate that NATO and the European Union are not able to protect their member states. If NATO member states did not invoke Article 5, the alliance would essentially cease to exist.

However, even though a similar Russian strategy was successful in eastern Ukraine, most people do not believe that it could easily be replicated in Estonia and Latvia, for several reasons.

First, Ukrainian authorities were infiltrated by Russian security and intelligence officials. The Ukrainian armed forces were not only severely mismanaged and underfunded; they were also deliberately weakened in order to remove a tool that would provide the Ukrainian political leadership with more options to resist Russian aggression.

Second, the Baltic States have been able to transform themselves away from their Soviet past into modern democracies that are now part of the European Union and NATO. As a result, they are less vulnerable to Russian influence.

Another possible scenario is a Russian “snap exercise” unexpectedly turning into an attack on one or more of the Baltic States. To consolidate its gains, Russia would attempt to deny other NATO members access to the Baltic Sea, seal off the land corridor to the Baltic States, and possibly even use tactical nuclear weapons against Poland as was demonstrated in
a 2009 military exercise code named “Zapad-99.” Regardless of whether NATO invoked Article 5 in this scenario, its members’ weakness could have emboldened Russia to take these actions.

The company-sized units of approximately 150 personnel each that have rotated through Estonia, Latvia, Lithuania, and Poland since April 2014 do little to deter Russia. If Russia used military force, these units would have very limited capability to defend these NATO member nations and protect themselves.

One only has to study the example from Srebrenica, a little Bosnian city with a population of 15,000 that today is well-known because of the massacre that Bosnian Serb forces organized in 1994. The city was protected by a Dutch battalion of 400 personnel under United Nations command, equipped with armored personnel carriers and TOW anti-tank missiles, and with access to close air support. Nevertheless, the unit proved unable to protect the city and the civilians. Members of the Dutch unit were taken hostage and stripped to their underwear. Bosnian Serb soldiers equipped themselves with uniforms and vehicles they had stolen from surrendering Dutch troops. The events that followed, with more than 8,000 Bosnian Muslim men and boys being executed by Bosnian Serb forces, have come to mark the failure of the United Nations to prepare or react. A similar development involving the relatively small forces that have been deployed as part of Operation Atlantic Resolve would have a devastating effect on the credibility of NATO and its member states.

Recapturing the territories of a NATO member state occupied by Russian forces would be costly and most likely would involve Kremlin threats to use nuclear weapons. In the worst possible case, Russia might actually use nuclear weapons to discourage allies from recapturing occupied territories. Therefore, the obvious solution would be to use proactive measures and discourage the Kremlin from attacking rather than being forced to react to a Russian attack. This could be achieved only through credible deterrence that included deploying substantial NATO forces in the Baltic States.

The NATO–Russia Founding Act vs. the Washington Treaty

The overall objective of NATO’s force posture should be to deter potential aggressors from attacking a member state. So far, however, leaders of some NATO member states, primarily German Chancellor Angela Merkel, have ruled out a permanent NATO troop presence in Eastern Europe, referring to the NATO–Russia Founding Act, signed in May 1997.

The first sentence of the Founding Act declares that NATO and Russia “will build together a lasting and inclusive peace in the Euro-Atlantic area on the principles of democracy and cooperative security.” The Act provides many examples of language that were symptomatic of the political climate in the late 1990s but did not foresee the current reality, such as: “NATO reiterates that in the current and foreseeable security environment, the Alliance will carry out its collective defence and other missions by ensuring the necessary interoperability, integration, and capability for reinforcement rather than by additional permanent stationing of substantial combat forces.” The document also committed that “Russia will exercise similar restraint in its conventional force deployments in Europe.”

By using military force against Georgia and Ukraine, the Kremlin has clearly not followed the Founding Act. Russia’s aggressive behavior against the Transatlantic Community, involving threats to use nuclear weapons against Denmark and Sweden, large-scale “snap exercises,” and border violations, should bring this wishful thinking about Russia’s intentions to an end. Instead, it is time to focus on NATO’s core task: collective defense. NATO asserts that “[t]he principle of collective defence is at the very heart of NATO’s founding treaty.” The organization describes this responsibility in Article 5 of that treaty:

The parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that, if such an armed attack occurs, each of them, in exercise of the right of individual or collective self-defence recognized by Article 51 of the Charter of the United Nations, will assist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.

NATO cannot falter on this primary responsibility, even under pressure from its large, adversarial neighbor to the East. Considerations or influence
from third parties cannot be more important than the security of NATO’s member states. NATO officials reasserted this during their most recent debate about new membership. In the fall of 2014, former NATO Secretary General Anders Fogh Rasmussen stated that no third party should have a de facto veto over enlargement policy and that “each country will continue to be judged on its merits.”

Should a country like Georgia meet the benchmarks for NATO membership, Russian objections should not deny that country the opportunity to join. The same can be said for permanent basing in NATO’s eastern member states, which Russia has sought to prevent.

NATO’s new Central and Eastern European (CEE) member states have contributed actively to alliance and coalition operations and by so doing have demonstrated their will to defend NATO’s principles and collective security. Participating in hazardous operations inevitably involves sacrifices. According to available information, eight CEE countries have suffered losses in Afghanistan, totaling 94 killed in action as of April 22, 2015. In Iraq, between 2004 and 2007, seven countries in the region suffered an additional 50 fatalities. Estonia suffered one of the highest per-capita casualty rates among all of the countries participating in the ISAF mission in Afghanistan. These member states reasonably also expect to be supported by fellow NATO members when their security is under threat.

Conclusion

Russia has demonstrated in Georgia and Ukraine that it is able and willing to use military force against neighboring nations. This should come as no surprise, but the West has employed a passive and reactive approach vis-à-vis Russia. Instead of deterring the Kremlin, NATO has placed more emphasis on reassuring the easternmost member states. Rather than preempting further Russian aggression by backing up deterrence with real military capabilities, the alliance has decided to spend much effort on boosting the NATO Response Force—in itself a reactive rather than proactive force. Russia has proved that it is able to surprise the West with its large-scale unannounced “snap exercises,” and NATO’s reactive approach increases the risk that Russia will decide to mount additional challenges to the alliance.

American and European leaders have been reluctant to provide significant support to Ukraine in its war with Russia. Ukraine has become the main battleground for Russia’s war against the West. Americans and Europeans may not want to acknowledge this conflict, but it is important that they stop signaling weakness that will further embolden Russia.

Shifting factors on the ground in Eastern Europe will continue to affect Moscow’s calculus. NATO can influence Russia’s continued push into Eastern Europe by exercising a few options that could go a long way toward deterring further expansion. For example:

- Providing Ukraine with lethal weapons to defend its own territory could push back the separatist movements, at least in the western part of that country, while also signaling that NATO members are taking an active stance against Russia.
- NATO could also establish more robust proactive deterrence measures, such as permanent bases or a greater commitment to preexisting security forces, in its Central and Eastern European member states.

It is unlikely that Russia will make an incursion into a NATO member’s territory in the immediate future, either directly or through support of a separatist group. However, NATO’s continued acceptance of Moscow’s provocations will only further embolden Putin. Ultimately, it will be far easier to defend NATO territory than it will be to liberate it. Sending a strong message that the alliance is serious about territorial integrity will help to ensure that Russia never violates it.
Endnotes:


33. Ibid.


Intelligence and National Defense
David R. Shedd

Every successful military plan and operation relies on intelligence. Whether it is a simple field report from a scout about an enemy position or the methodical development of the mosaic of intelligence gathered from myriad sources over years that resulted in the successful raid of Osama bin Laden’s Abbottabad compound, intelligence plays a vital role in our national defense. The diversity and rapidly changing nature of the threats we face as a nation underscore the need for sound intelligence in the hands of those who are charged with making decisions about our security.

This is not a new phenomenon. Intelligence has played a role in national defense since well before the United States was founded. Timely intelligence, however, is the beginning of the surprising and often difficult decisions that are made in war, where force is often critical.

Since earliest recorded history, accounts of people using espionage to try to understand the intentions of the adversary abound.

- Early Egyptian pharaohs employed agents of espionage to ferret out disloyal subjects and to locate tribes that could be conquered and enslaved. From 1,000 B.C. onwards, Egyptian espionage operations focused on foreign intelligence about the political and military strength of rivals Greece and Rome.

- The legendary story of the Trojan Horse, a wooden structure given to the city of Troy as a gift but which contained several hundred Greek soldiers seeking safe entrance into the heavily fortified rival city, became the symbol of Grecian intelligence prowess.

- The Romans used intelligence to conquer the people of the Italian Peninsula. They used scouts on regular assignments against the Samnites and Gauls, and because of advance intelligence, they could often catch their enemies by launching surprise attacks and rout their camps.

During the 20th century’s two world wars, intelligence played a vital role in allowing the United States military and its allies to prevail. Examples that immediately come to mind include Operation Mincemeat, the World War II British-led operation to deceive the Nazis into thinking that Allied forces were planning to attack southern Europe by way of Greece or Sardinia rather than Sicily, as the Nazis had assumed. Another example of the critical role of intelligence was the Allied forces’ successful exploitation of the Enigma machine used by the Nazis to encrypt their military transmissions during the war. There were thousands of other intelligence successes, including intelligence-led operations behind enemy lines by the Central Intelligence Agency’s predecessor, the Office of Strategic Services (OSS).

Of course, as one would expect, there also have been intelligence failures with profound ramifications. One notable and recent such failure resulted...
in a faulty case for the invasion of Iraq in March 2003. Notwithstanding many grievances by the U.S. and the international community with the Iraqi despotic regime of Saddam Hussein, the case for war was based fundamentally on what turned out to be erroneous intelligence assessments concerning the threat posed by Iraq’s weapons of mass destruction (WMD). Post-invasion, it was determined that no meaningful WMD program was in place in Iraq at the time of invasion. The WMD Commission highlighted this failure in their transmittal letter to President George W. Bush in the spring of 2005:

We conclude that the Intelligence Community was dead wrong in almost all of its pre-war judgments about Iraq’s weapons of mass destruction. This was a major intelligence failure. Its principal causes were the Intelligence Community’s inability to collect good information about Iraq’s WMD programs, serious errors in analyzing what information it could gather, and a failure to make clear just how much of its analysis was based on assumptions, rather than good evidence. On a matter of this importance, we simply cannot afford failures of this magnitude.

Each of the topical essays in The Heritage Foundation’s 2015 Index of U.S. Military Strength, which range from broad subjects like “What Is National Security?” to “The Importance of Special Operations Forces Today and Going Forward,” works from the premise that a robust U.S. intelligence capability is critical to our nation’s defense. But what is intelligence, what role does it play in our national defense, and why is it important?

The classic definition of intelligence captured by Mark Lowenthal encompasses information, process, organization, and products. This essay will largely focus on information as intelligence. What are the component parts of the intelligence enterprise, and what roles does each component play in providing for the common defense? What is the current status of the Defense Intelligence Enterprise, its current demands, and its ability to handle a growing demand for both tactical and strategic intelligence?

The purpose of this essay is to present in one place an overview of intelligence as it relates to national defense, and in particular to military affairs, and to answer several questions including:

- How is intelligence acquired, processed, integrated and disseminated?
- What current problems and limitations exist in the intelligence enterprise, and what solutions or adjustments are necessary?
- How has the broad spectrum of threats facing our country affected intelligence collection efforts?
- What more can or should be done?

We will explain how to think about intelligence, factors that affect its current status, and how the Intelligence Community (IC) is changing with the world of military planning and operations so that senior policymakers, the Congress, and Combatant Commanders can take better advantage of the special role of intelligence in our nation’s defense.

What Is Intelligence, and Why Is It So Critical?

Intelligence is “the ability to learn or understand or to deal with new or trying situations.” In the context of military operations, it is “information concerning an enemy or possible enemy or an area.”

A 2012 Joint Chiefs of Staff publication states that “commanders use intelligence to anticipate the battle, visualize and understand the full spectrum of the operational environment, and influence the outcome of operations.” Intelligence “enables commanders at all levels to focus their combat power and to provide full-dimensional force protection across the range of military operations.”

Intelligence potentially gives our men and women in uniform—our warfighters—information dominance and operational advantage over our adversaries. And the list of potential adversaries is growing. Concurrently, our comparative military advantage is starting to wane, but even as American military power declines, the demands made on the military are increasing. For example, the former Commandant of the Marine Corps, General James Amos, recently said 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.” The same cautionary note pertains to the Intelligence Community: As demand increases for a decreasing force, the remaining
resources will be asked to do more even in a declining resource environment.

That might be acceptable for a country other than the United States, but as Daniel Gouré wrote in the 2015 Index, United States power and presence are the foundation on which the present international order is built. Put another way, the U.S. military is the linchpin of the global security system.

Today, that system is under increasing pressure from a variety of state and non-state actors. We are facing threats from old and new adversaries with tried and proven techniques as well as new techniques such as the potential and growing ability to attack information technology systems that are a critical part of virtually every economic and security sector in the United States.

Intelligence collection is more difficult in today’s world because access is increasingly reduced to the secrets we must know. Denial and deception by our adversaries are sophisticated. Intelligence revelations by Edward Snowden and other leaked information have undercut our ability to obtain secrets by revealing intelligence methods and have undermined trust among America’s allies. Russia’s Vladimir Putin relies on traditional Russian military power to intimidate a neighbor such as Ukraine while using cyber to promote disinformation. China is modernizing its weapons systems and military forces at a startling pace. The non-state actors from Islamic extremists to drug cartels and organized crime organizations have at their disposal a wide array of technology that facilitates communication.

All levels of decision makers from the President to the warfighter should expect to receive accurate and timely intelligence to inform their plans and decisions notwithstanding the challenges the Intelligence Community faces from trying to acquire secrets about these countries and/or organizations. Intelligence customers should expect nothing but the best output from intelligence professionals.

In the National Military Strategy published in June 2015, the Chairman of the Joint Chiefs of Staff wrote: “We now face multiple, simultaneous security challenges from traditional state actors and trans-regional networks of sub-state groups—all taking advantage of rapid technological change. Future conflicts will come more rapidly, last longer, and take place on a much more technically challenging battlefield.”

The most current National Intelligence Strategy, published in 2014, highlights that “the United States faces a complex and evolving security environment with extremely dangerous, pervasive, and elusive threats.” It goes on to describe the global environment wherein “power is becoming more diffuse. New alignments and informal networks—outside of traditional power blocs and national governments—will increasingly have significant impact in economic, social, and political affairs.”

The grassroots voices from “[p]rivate, public, governmental, commercial, and ideological players” will grow in influence as a result of social media outlets, and “the projected rise of a global middle class and its growing expectations will fuel economic and political change.”

Resolving such complex security challenges will require U.S. intelligence attention to a broader array of actors.

The elements of the U.S. national intelligence organizations are focused on key nation-states that continue to pursue agendas that challenge U.S. interests around the globe. China’s strategic intentions with regard to its ambitious military modernization remain opaque and therefore present a concern. Russia is likely to continue to reassert power and influence in ways that undermine U.S. interests. “North Korea’s pursuit of nuclear and ballistic missile capabilities and its international intransigence” also command attention. The Intelligence Strategy further highlights that:

Iran’s nuclear efforts remain a key concern, in addition to its missile programs, support for terrorism, regime dynamics, and other developing military capabilities. The potential for greater instability in the Middle East and North Africa will require continued [U.S. intelligence] vigilance.... Violent extremist groups and transnational criminal networks threaten U.S. security and challenge the U.S. both in the homeland and abroad. Al-Qa’ida, its affiliates, and adherents, continue to plot against U.S. and Western interests, and seek to use weapons of mass destruction if possible.

Intelligence remains essential to understanding and responding to these diverse threats that have a direct bearing on our national defense.

The United States Intelligence Community

“The U.S. Intelligence Community is a coalition of 17 agencies and organizations” that comprise the American intelligence apparatus. The IC is led by
the Director of National Intelligence (DNI), a position created in 2004 under the Intelligence Reform and Terrorism Prevention Act (IRTPA), and operates in a unified manner to ensure that intergovernmental intelligence activities are undertaken in a coordinated and tightly integrated manner for the purpose of gathering and analyzing the intelligence necessary to conduct foreign relations and to protect the national security of the United States.

Representations of many of these IC elements collect and produce analysis outside of Washington at Combatant Commands, the Service Centers, and U.S. embassies. Ensuring that the Washington-based intelligence capabilities are well integrated in the field is critical so that all elements operate as an enterprise irrespective of location.

One way to think of the Intelligence Community is to single out the Office of the Director of National Intelligence (ODNI) as a stand-alone element setting the strategic direction for the IC but not having an operational role. The six program management IC organizations are listed and described below under a separate heading. With the exception of the Federal Bureau of Investigation, which reports to the Attorney General, and the CIA, which reports to the DNI, the other four program managers are agencies fully dedicated to the intelligence mission and are under the authority, direction, and control of the Secretary of Defense. The IC has five departmental intelligence elements with boutique intelligence missions, also described below. Finally, the five military services, including the Coast Guard, have intelligence offices that support their respective services.

**Office of the Director of National Intelligence**

The Office of the Director of National Intelligence serves as the head of the 17 agencies that comprise the Intelligence Community. The purpose of the DNI is to “lead intelligence integration” and “forge an IC that delivers the most insightful intelligence possible.” The 9/11 terrorist attacks on the United States prompted the President and Congress to reform the IC, and in 2004, the position of DNI was created as part of the IRTPA. The DNI is subject to the authority of the President of the United States and serves as a chief adviser on intelligence matters related to national security.

**Program Management Agencies**

**Central Intelligence Agency.** In 1947, President Harry Truman signed the National Security Act, which led to the creation of the Central Intelligence Agency (CIA) on July 26, 1947. The attack on Pearl Harbor and subsequent urgencies of World War II prompted the United States to create a group to conduct foreign intelligence operations. Over the years, the CIA has evolved and expanded its role as an intelligence organization with operatives in countries around the globe.

The CIA remains the primary external intelligence agency operating outside of the United States. It is organized into five components: the Directorate of Operations, the Directorate of Analysis, the Directorate of Science and Technology, the Directorate of Support, and the recently created Directorate of Digital Innovation. Using both human and signals intelligence sources, the CIA “collects, analyzes, and disseminates intelligence gathered on foreign nations.” According to its mission statement, the Agency’s “information, insights, and actions consistently provide tactical and strategic advantage for the United States.”

From 1947, when the National Security Act was enacted, until passage of the IRTPA in December 2004, the CIA was led by the Director of Central Intelligence (DCI). In April 2005, when the first Director of National Intelligence took office, many of the IRTPA reforms went into effect. These reforms turned the Director of Central Intelligence into the Director of the Central Intelligence Agency to emphasize that the D/CIA is responsible for running the CIA while the DNI directs the entire Intelligence Community. The D/CIA reports to the DNI.

**Defense Intelligence Agency.** Operating under the jurisdiction of the Department of Defense (DOD) but also as a member of the Intelligence Community under the purview of the DNI, the Defense Intelligence Agency (DIA) is the major producer of information related to foreign military intelligence. As a combat support agency within the DOD, the DIA collects and analyzes intelligence on foreign militaries, conducts surveillance and reconnaissance operations, and provides crucial information to warfighters, defense policymakers, and force planners.

The DIA is organized into four directorates: the Directorate of Operations, Directorate for Analysis, Directorate for Science and Technology, and Directorate for Mission Services. There also are five centers. Four cover regions around the globe: the Americas Center, Asia/Pacific Center, Europe/Eurasia Center, and Middle East/Africa Center. The fifth,
the Defense Combating Terrorism Center, is focused on transnational terrorism threats and support for counterterrorism operations by the warfighter.

**National Geospatial-Intelligence Agency.** Initially formed in 1972 as the Defense Mapping Agency (DMA) and later renamed the National Imagery and Mapping Agency (NIMA), the National Geospatial-Intelligence Agency (NGA) serves a dual role as DOD combat support and U.S. Intelligence Community agency, as do all of the department’s intelligence elements. Cartographers, analysts, and other NGA personnel gather imagery and furnish geospatial analytical products applicable to national security, military operations, and humanitarian aid efforts. The NGA specializes in providing critical geospatial intelligence products and services to support national security and military operations.

**National Reconnaissance Office.** The National Reconnaissance Office (NRO) is responsible for the development and operation of U.S. reconnaissance satellites. As a combat support agency, the NRO provides these reconnaissance capabilities to other agencies, such as the CIA or DOD. The NRO’s products are of great importance to national security because they can be used to “warn of potential trouble spots around the world, help plan military operations, and monitor the environment.”

**National Security Agency/Central Security Service.** The National Security Agency (NSA) is at the forefront of communications and information technology, serving as a critical enabler of sensitive intelligence collection. As a combat support agency:

> The National Security Agency/Central Security Service (NSA/CSS) leads the U.S. Government in cryptology that encompasses both Signals Intelligence (SIGINT) and Information Assurance (IA) products and services, and enables Computer Network Operations (CNO) in order to gain a decision advantage for the Nation and our allies under all circumstances.

Aside from lending support to other Intelligence Community agencies, the NSA also aids military customers, national policymakers, counterterrorism and counterintelligence communities, and key international allies.

**Federal Bureau of Investigation.** Intelligence has been an important function of the FBI, especially over the past few decades in supporting law enforcement activities. The FBI’s updated intelligence role is now codified in Executive Order 12333 as amended by Executive Order 13470 on July 30, 2008. Under the supervision of the Attorney General, the bureau’s role is to:

1. Collect (including through clandestine means), analyze, produce, and disseminate foreign intelligence and counterintelligence to support national and departmental missions, in accordance with procedural guidelines approved by the Attorney General, after consultation with the Director [of National Intelligence];

2. Conduct counterintelligence activities; and

3. Conduct foreign intelligence and counterintelligence liaison relationships with intelligence, security, and law enforcement services of foreign governments or international organizations....

These changes in the FBI’s intelligence role emerged from the 9/11 Commission report and the IRTPA of 2004, which sought to close the gap between foreign and domestic intelligence collection and intelligence sharing. The FBI has organized itself since then to meet the intelligence-collection and intelligence-analysis mission. In 2014, FBI Director James Comey created the FBI’s Intelligence Branch to “lead the integration of intelligence and operations across the organization.” The Intelligence Branch is now responsible for “all intelligence strategy, resources, policies, and functions.”

**Departmental Intelligence Elements**

**Department of Energy.** The primary focus of the Department of Energy’s Office of Intelligence and Counterintelligence is to protect, enable, and represent the vast scientific brain trust resident in DOE laboratories and plants. While the DOE’s Office of Intelligence and Counterintelligence does not have the authority to conduct the collection of foreign intelligence, it often assists with analysis of the information gathered by other intelligence agencies. The Department of Energy and its Office of Intelligence and Counterintelligence specialize in the following areas of intelligence concern: nuclear weapons, nuclear proliferation, nuclear energy, and energy security.

**Department of Homeland Security.** The Department of Homeland Security (DHS) was created in 2002 in response to the 9/11 terrorist attacks. Within the DHS, the Office of Intelligence and Analysis (I&A) collects and analyzes intelligence and information in an effort to identify and assess current and
future threats to the U.S. Through the National Network of Fusion Centers, the DHS disseminates I&A intelligence and information to federal, state, and local authorities. I&A focuses on four major areas: promoting understanding of threats through intelligence analysis, collecting open-source information and intelligence pertinent to homeland security, sharing information necessary for action, and managing intelligence for the homeland security enterprise.

**Department of State.** The Bureau of Intelligence and Research (INR) serves as the Department of State’s intelligence arm, collecting relevant intelligence and information and providing the Secretary of State with analysis of significant global events. Through all-source intelligence, diplomatic reporting, public opinion polling, and interaction with U.S. and foreign scholars, the INR seeks to inform the State Department of global events or trends that affect U.S. foreign policy. In addition to serving as the Secretary of State’s primary intelligence adviser, the INR also supports other policymakers, ambassadors, and embassy staff.

**Department of the Treasury.** The Office of Terrorism and Financial Intelligence (TFI) is the agency within the Department of the Treasury that is responsible for intelligence operations. The TFI develops and implements U.S. government strategies aimed at “safeguarding the financial system against illicit use and combating rogue nations, terrorist facilitators, weapons of mass destruction proliferators, money launderers, drug kingpins, and other national security threats.” The Office of Intelligence and Analysis (OIA), created under the TFI in 2004, “advances national security and protects financial integrity by informing Treasury decisions with timely, relevant, and accurate intelligence and analysis.”

**Drug Enforcement Administration.** Under the jurisdiction of the Department of Justice, the Drug Enforcement Administration (DEA) is tasked with enforcing current federal laws and regulations on controlled substances. While the DEA has gathered intelligence since the 1970s, the Office of National Security Intelligence (ONSI) was created in 2006 and works with other members of the U.S. Intelligence Community “to enhance the U.S.’s efforts to reduce the supply of drugs, protect national security, and combat global terrorism.”

**Military Service Components**

**Air Force Intelligence.** “The U.S. Air Force Intelligence, Surveillance, and Reconnaissance (USAF ISR) Enterprise is America’s primary source of finished intelligence derived from airborne, space, and cyberspace sensors.” Originally founded in 1948 as the Air Intelligence Agency, the USAF ISR collects and analyzes data on foreign countries and forces around the world, expediting critical information to troops on the ground. Examples of USAF ISR intelligence include (but are not limited to) electronic surveillance, photographic surveillance, and weather and mapping data.

**Army Intelligence.** U.S. Army Intelligence, or G-2, is organized into five major military intelligence (MI) disciplines in the Army: Imagery Intelligence, Signals Intelligence, Human Intelligence, Measurement and Signature Intelligence, and Counterintelligence and Security Countermeasures. While Army intelligence dates back to the earliest days of the U.S. Army, the chief uniting force, the U.S. Army’s Intelligence and Security Command (INSCOM), was formally established in 1977. The purpose of U.S. Army Intelligence is to enable effective Army planning and operations. Its role includes “policy formulation, planning, programming, budgeting, management, staff supervision, evaluation, and providing oversight for intelligence activities for the Department of the Army.”

**Coast Guard Intelligence.** Coast Guard Intelligence (CGI) is the military intelligence branch of the U.S. Coast Guard. In addition to this role, CGI also serves an investigative function. Created in 1915, CGI has been altered continuously so that it can best fit the needs of the Coast Guard. Today, under the Department of Homeland Security, CGI seeks to produce “information on maritime and port security, search and rescue, and counter-narcotics.”

**Marine Corps Intelligence.** The Marine Corps’ intelligence component, the Marine Corps Intelligence Activity (MCIA), exists to supply battlefield commanders with the necessary tactical and operational intelligence to carry out their respective functions. The intelligence department of the Marine Corps “has service staff responsibility for geospatial intelligence, advanced geospatial intelligence, signals intelligence, human intelligence, [and] counterintelligence, and ensures there is a single synchronized strategy for the development of the Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise.”

**Navy Intelligence.** The U.S. Navy’s intelligence element has been in place since 1882. The Office of Naval Intelligence (ONI) is the oldest component
of the U.S. Intelligence Community and is headquartered at the National Maritime Intelligence Center in Suitland, Maryland. According to the U.S. Navy, “ONI produces relevant maritime intelligence and moves that intelligence rapidly to key strategic, operational, and tactical decision makers.”

**Intelligence and the Warfighter**

The IC’s 17 elements operate essentially as a loosely federated system under DNI, departmental, and (in the case of the CIA) presidential authorities. Until enactment of the 2004 IRTPA, changes in the IC were evolutionary. The changes brought about by the IRTPA, which included establishing the Office of the Director of National Intelligence and limiting the Director of Central Intelligence to running the CIA, were dramatic. The advent of the FBI as a full IC member among the federation of elements also introduced a major change.

The changes have been less pronounced for the combat support agencies—the National Security Agency, Defense Intelligence Agency, National Geospatial-Intelligence Agency, and National Reconnaissance Office—and for the uniformed services’ intelligence elements within the Department of Defense (DOD). When the IRTPA was being debated, then-Secretary of Defense Donald Rumsfeld placed significant limits on the level of reform of all DOD intelligence elements that he would find acceptable, which Congress and the President codified into law to ensure unified command over, and intelligence support for, the Department of Defense.

The wars in Iraq and Afghanistan have provided ample opportunity for the Intelligence Community and especially the combat support agencies to provide intelligence to the warfighter. That intelligence today often combines human intelligence (HUMINT), signals intelligence (SIGINT) and geospatial imagery (GEOINT) to enable our soldiers, airmen, sailors, and marines to achieve success against the enemy. That intelligence, thanks to modern technology, may reach the warfighter simultaneously as it reaches the commander in chief.

The operation that resulted in the death of al-Qaeda’s leader in Iraq, Abu Musab al-Zarqawi, in early June 2006 illustrates the intelligence support on the ground that has enabled battlefield successes. U.S. military spokesman Major General William Caldwell stated, “We had absolutely no doubt whatsoever that Zarqawi was in the house,” adding that the success required “a painstaking intelligence effort” in which “we were able to start tracking [al-Zarqawi’s associate], monitor his movements and establish when he was doing his linkup with al-Zarqawi.” According to Caldwell, “It truly was a very long, painstaking, deliberate exploitation of intelligence, information gathering, human sources, electronics, signal intelligence that was done over many, many weeks.”

**Intelligence Acquisition, Processing, Integration, and Dissemination**

The intelligence process that results in a product is often referred to as the “intelligence cycle.” The intelligence cycle is a six-step process that covers everything from the acquisition of intelligence to its dissemination to end users. (See Figure 2, “The Intelligence Cycle.”) The cycle is fed by information collected from many sources: clandestine and overt human sources, signals and cyber-based intelligence, imagery, open sources, and technical means such as telemetry.

Acquisition of the information is based on a system of requirements generated primarily by the users of intelligence. The information that results, often referred to as raw or unevaluated information, is then used to prepare a finished analytical product for use by policymakers, our warfighters, and other consumers such as Congress. The best analytical products prepared by the intelligence professional will draw from all available sources of information.

To provide the best support for its consumers, the IC is working to ensure that the process is strengthened through tighter integration. The means for achieving enhanced integration are critical in attaining increased efficiencies in leveraging the various intelligence disciplines to meet common objectives for the users of intelligence.

The Intelligence Community’s 17 elements serve as the backbone of the American intelligence system. Each element inside and outside of the defense-based intelligence organizations contributes specific collection and analytical expertise that serves to inform the security community’s understanding of the threats and adversaries or to meet the unique requirements associated with the military services. There has been a significant change in the trends for the intelligence mission over the past 15 years. The attacks on the U.S. homeland on September 11, 2001, created an important shift in how intelligence resources are allocated today, both for collection and for analysis.

As noted thematically by DNI James Clapper in the Intelligence Community’s 2015 Worldwide
Threat Assessment, cyber threats are on the rise, as are conflicts around the globe that are marked by diversity, as seen through the resurgence of Russia’s destabilizing efforts, Iran’s use of proxies to foment instability in the Middle East, and North Korea’s ever-present threat to use nuclear weapons. At the same time, Islamic extremism is on the rise and far from contained to one geographic area.

To achieve a better understanding of the hidden plans and intentions of these and other adversaries, it is imperative that all of the nation’s intelligence capabilities and, by extension, investments are made in a manner that focuses on U.S. defense capabilities and decision making and ultimately ensures that the U.S. retains superior military capabilities compared to other countries and is able to prevail in any conflict.

Problems, Limitations, and Solutions
The threats to U.S. national security are increasingly diverse and complex. Traditionally, when facing a crisis, American decision makers would see the crisis spike but then soon settle down. Today, we see a different and disturbing trend concerning “hot spots.” The national security challenges appear to be chronic and at times acute, with no foreseeable end to a crisis-riddled world.

Nonetheless, the policymaker and the warfighter will continue to rely on accurate and timely intelligence that can guide their decisions, from responding to threat warnings to implementing a plan of action in response to threats as they materialize. IC customers, including the uniformed operators, have come to expect information that moves rapidly through the intelligence cycle. They deserve nothing less despite a number of significant challenges and limitations that confront U.S. intelligence.

Specifically, American intelligence faces several significant problems and limitations in building and then maintaining intelligence capabilities and capacity in the 21st century. Among these critical problems and limitations are:

- Rapidly changing technology, such as multiple options for communication information, that enables adversaries to challenge and potentially defeat U.S. collection capabilities in the air and space, on the ground, and at sea;
The significantly greater difficulty of collecting human intelligence, given the advent of biometrics and other personal identifying capabilities and the increased array and diversity of targets;

- The increasing difficulty of processing and deriving value from vast amounts of data collected;

- Resolving privacy and civil liberties matters associated with accessing and processing “content data” involving U.S. citizens in social media outlets; and

- The expanded use of industrial base encryption, which could severely limit intelligence access to the plans and intentions associated with those who wish us harm.

There are no simple or quick solutions to the challenges facing U.S. intelligence, but the problems are not insurmountable. Several key actions can contribute to finding long-term solutions to these challenges. They start with ensuring that the best and brightest intelligence professionals are hired, retained, and then given all of the specialized training and technology necessary to equip them for success. Further integration of officers with a wide variety of skills among the IC elements—physically and/or virtually—against specific mission objectives is likewise essential.

Additionally, continued sharing of information is vital with appropriate “insider threat” protections in place. Human intelligence operations will need to adapt continually to stay ahead of the threats posed by adversaries’ use of technology. Policies promulgated by the DNI are required to address the mounting uncertainty among intelligence professionals about how to handle U.S. person information acquired by means of open sources. For the IC to be successful, it must be agile and integrated with other agencies and partners and must have a firm grasp of the operational environment.

One of the lessons learned from the wars in Iraq and Afghanistan is that integrating intelligence into operations increases the likelihood of a successful military plan and operation. Experience on the ground in the war zones underscored the importance of having the intelligence professional working alongside the operator for at least two critical reasons:

- The operators learned they could feed requirements into a collection process that was better refined by working with the intelligence professional.

- The delivery time for potentially highly perishable material was much faster when the intelligence officer worked directly with the operator to apply that intelligence to specific operations.

Challenges remain, however, in ensuring collaboration against emerging threats such as those presented by an adversary’s use of cyberspace. Both non-state actors and governments are improving their offensive and defensive cyber capabilities and enhancing their ability to use social media to communicate and promote their agendas (or causes) and justify aggressive behavior while operating with impunity outside of borders.

Enhancing intelligence collection and analysis to serve the Intelligence Community’s wide array of customers is an ongoing process. Determining where investments in intelligence need to be made remains critical to improving the IC’s intelligence capacity and capabilities to address not only current intelligence demands, but also those that will evolve as adversaries change their methods to thwart defense capabilities. Along with the changing nature of the threats, the role that intelligence must play in shaping U.S. defense strategy and investments takes on greater significance in the face of fiscal austerity as defense spending contracts.

Within the Department of Defense, the effort to unify the defense intelligence components falls to the Undersecretary of Defense for Intelligence (USD/I) and is known as the Pentagon’s Defense Intelligence Enterprise (DIE). (See text box, “Defense Intelligence Enterprise.”) The DIE is governed by policies directed by the USD/I.

Collaboration among the various DIE elements has improved, especially because of the growing demand from intelligence customers for products that provide a multi-disciplinary quality and are not necessarily produced by personnel located in one organization or facility. Continuing resistance from DIE elements to drafting and publishing joint analytical products leads to some duplication of effort, and access to relevant information by all DIE components remains a challenge.

The DIE emerged in 2003 from the establishment of the office of the USD/I in the DOD under Secretary
of Defense Rumsfeld. Former USD/I Dr. Michael Vickers has noted that:

[The intent of defense-focused intelligence transformation] is not just to deal with the challenges we face and to make sure we sustain the intelligence advantage for our policymakers and operators decades into the future…. [I]t’s also to inform and enable some of the new strategic and operational approaches that will be required to deal with these challenges.

The DIE has focused on identifying ways to resource, develop, and process critical intelligence requirements most effectively in support of operations that can and ultimately must make the knowledge derived from the collectors instantly available to operators and analysts.

While dollars and cents are not everything, good intelligence does cost money. Congress funds America’s intelligence activities through two separate programs: the National Intelligence Program (NIP), which the DNI oversees, and the Military Intelligence Program (MIP), which the Secretary of Defense executes with the DNI’s advice. For much of the past decade, the DOD has focused on fighting terrorism and countering violent insurgencies and has been funded for expanded and sustained operations in this area, but fiscal conditions have changed. Both the defense and intelligence budgets are falling. Consider the changes in fiscal year budget requests as reflected in Chart 1.

Though the FY 2015 intelligence budget appropriation has not yet been disclosed, the Administration’s FY 2016 budget request, submitted on February 2, 2015, included a request of $53.9 billion for the National Intelligence Program. The Department of Defense requested $17.9 billion for the Military Intelligence Program in FY 2016. (See Chart 1.)

In absolute terms, it is difficult to ascertain the exact dollar value of intelligence. What is easier to understand is that cutting funding for intelligence at a time when threats are increasing in number and complexity will result inevitably in a commensurate decrease in the IC’s ability to meet the growing demands from the intelligence customer. Against that backdrop, the declining budgets have given rise to a debate about whether less funding for intelligence will increase the risk to the nation after the decade of spending growth that followed 9/11. In response to this debate, two points should be considered.

First, the commitment to intelligence funding is an indicator of commitment to maintaining and/or building intelligence capabilities and capacity to meet both current and future challenges. There is no direct and uniform connection between more money spent and better knowledge gained. A well-trained analyst, a well-placed asset, a conscientious technologist, or a watchful FBI agent can contribute more to our national security in some circumstances than a costly satellite or imagery device.

Furthermore, an integrated workforce can amount to more than the mere sum of its parts, and by leveraging the various components of the Intelligence Community together, more can be achieved with less than ever before. However, gaining insight into the intent and workings of competitors and enemies should not become critically dependent on a few conscientious or watchful analysts. Too much is at stake to trade capacity for luck.

Second, that being said, some intelligence capabilities do require significant investment. For instance, building the next generation of defense intelligence capabilities requires investment in research and development, and grooming the next generation of intelligence officers means spending now to train and nurture their talents. Will a budget reduction mean the end of American intelligence dominance? Probably not, but that does not mean we should not be concerned that further cuts might be applied in a helter-skelter fashion that is penny-wise and pound-foolish.
Achieving a More Effective Defense Intelligence Enterprise

In order to improve what is already a significant U.S. defense capability supported by extraordinary intelligence capabilities, American intelligence should continue on the path of enhancing the integration of intelligence obtained from all sources and by all IC elements. Further, it will be increasingly important that integrated intelligence be tailored to answer strategic as well as tactical questions for customers and provide timely support to warfighter and President alike. To accomplish this, the Enterprise must have the ability to draw from all forms of collection sources that range from clandestinely acquired intelligence to open-source information.

To improve U.S. defense intelligence capabilities, components of the Defense Intelligence Enterprise should focus their attention on three key areas:

- **Ensuring that information technology (IT) investments provide secure global IT solutions applied to large holdings of data that make information easily and securely accessible across the Defense Intelligence Enterprise.** Breaking down barriers to information sharing across various defense components where data are currently restricted for bureaucratic reasons remains a significant issue. The users of intelligence need timely discovery and exploitation of the intelligence in a secure but collaborative environment.

As the Pentagon thinks about the IT enterprise, it must account not only for traditional foreign partners, but also for newly emerging intelligence country partners. The IC elements that collect and disseminate sensitive information must also be assured that the information is protected from insiders and others who seek to compromise...
intelligence. This assurance can be achieved only by means of real-time audit capabilities with respect to the handling of sensitive information.

- **Applying scarce resources to training in order to match the challenges of the intelligence workforce.** Investments in cyber, foreign language, and analytical training to address modern challenges are critical to take full advantage of technological improvements. We need a more networked and integrated workforce of analysts and collectors working side-by-side.

The large number of Washington-based analysts and intelligence professionals who shape the collection requirements must be significantly better interconnected with the smaller cadre of experts at the Combatant Commands and the military Service Centers—the Army’s National Ground Intelligence Center, the Air Force’s National Air and Space Intelligence Center, the Navy’s Office of Naval Intelligence, and the Marines’ Center for Intelligence Analysis—in order to reap the benefits of deep subject expertise. Conversely, an integrated and collaborative workforce will ensure that military planners and operators who are under pressure to meet tactical and operational requirements have access to their peers in Washington who can help by providing strategic context for tactical intelligence and real-world events that operators face every day.

- **Combining the intelligence budget allocations for the National and Military Intelligence Programs to improve the efficiency of the allocation of resources to intelligence capabilities.** Combining both budgets will also provide for increased flexibility in resource allocation while minimizing redundancy of intelligence resources against dynamically changing threats.

Achieving this combination of funding will require reforms among overlapping congressional oversight committees as well as agreements between the Secretary of Defense and the DNI on setting joint investment priorities. As it pertains to defense intelligence investments, properly assessing the value of the intelligence output is critical to maintaining and improving the ability of our military forces to win the war.

**Conclusion**

Intelligence has always played an important role in our national defense. The demand for accurate intelligence delivered on a timely basis will only increase as the complexity of the threats facing the U.S. and its allies grows.

To be effective, both in today’s environment and for the foreseeable future, our defense capabilities will require that intelligence be integrated into all levels of operational planning. We can expect that the demand for more precise intelligence on our adversaries will grow. The needs by each of the uniformed services and the Combatant Commands will require that the defense and non-defense intelligence components of the Intelligence Community align their resources, capabilities, and mission goals to the point where information sharing and integration become common practice.

The goal of the entire intelligence enterprise should always be to create new knowledge, including actionable knowledge that aids decision makers in preventing conflicts where possible or winning the conflict should conflict be necessary. At the same time, the entire American Defense Intelligence Enterprise requires more integration of its multi-disciplinary capabilities such as the collection platforms and analytic expertise that reside in various agencies and organizations.

Defense intelligence for and by the military services and the Combatant Commands will place a high premium on the ability to access real-time information ranging from HUMINT to SIGINT, GEOINT, and open-source information. This expanded interconnected intelligence process will free expert analysts to focus on more complex higher-order analysis. A secure IT network linking all relevant intelligence sources and operators will be a crucial enabler. The end result will be a more timely, efficient, flexible, and effective Defense Intelligence Enterprise that draws on information from all elements of the Intelligence Community and makes our nation more secure for current and future traditional and non-conventional military operations.
Endnotes:


3. Ibid.

4. Ibid.


8. Ibid.


11. Ibid.


13. Ibid.


16. Ibid.

17. Ibid., p. 28.

18. Ibid., p. 33.


21. Ibid.

22. Ibid.

23. Ibid.

24. Ibid.

25. Ibid.


34. Intelligence Reform and Terrorism Prevention Act of 2004, § 103(a).
35. Ibid.
40. Ibid.
41. Executive Order 13470.
43. Ibid.


America’s Reserve and National Guard Components: Key Contributors to U.S. Military Strength
Colonel Richard J. Dunn, III, U.S. Army (ret.)

Throughout our history, the Reserve and National Guard components of the U.S. military have made essential contributions to the nation’s defense. The Reserve and Guard make up roughly 38 percent of total U.S. uniformed manpower, and their organizations provide critical combat power and support. Though traditionally supporting combat operations in a strategic reserve capacity, more recently, they have supported undersized Active component forces in long-term engagements such as those in Iraq and Afghanistan.

Militia service is as old as the United States. Before independence, local communities formed their own security forces, composed of citizens who would rally in times of emergency, to protect their towns from external threats. After independence, the individual states remained in the habit of raising forces—militias—as needed, providing units to complement those of the federal forces as was the case during the U.S. Civil War.

The relationships between the National Guard, the full-time Active federal forces, and the Active component’s Reserve elements have changed over time as the needs of the country have changed. For much of its history, the U.S. maintained a small Active component that was expanded by draft or mobilized reserves during times of war. Following the Vietnam War, the shift to an all-volunteer force and the heightening of tensions with the Soviet Union led to sustainment of a large standing military that changed the relationship between Active and Reserve/Guard elements, with Active elements kept in a ready status that would enable them to respond immediately to any Soviet aggression while the Reserve and Guard elements served as a strategic reserve.

Given the critical role played by National Guard and Reserve organizations, an understanding of the statutory foundations of these components, their nature, and issues surrounding their structure, size, and employment is essential to any assessment of the ability of the U.S. armed forces to provide for the common defense in today’s complex world.

The decline in the size of the active-duty force caused by reduced budgets has sparked tension among the Active, Guard, and Reserve components over their respective missions and corresponding resources. Lacking the ability to fund the existing arrangement of Active, Reserve, and Guard forces adequately, service chiefs have had to reallocate funding, forcing reconsideration of what each component needs to have and for what purpose.

Statutory Foundations
The responsibilities of the executive and legislative branches for the National Guard and Reserve components stem from Articles I and II of the U.S. Constitution.

For the legislative branch, Article I, Section 8 states: “The Congress shall have Power...To raise and support Armies...To provide and maintain a Navy...To make rules for the Government and
Regulation of the land and naval Forces...To pro-
vide for calling forth the Militia to execute the
Laws of the Union, suppress Insurrections and
repel Invasions” and “To provide for organizing,
armng, and disciplining, the Militia, and for gov-
erning such Part of them as may be employed in the
Service of the United States, reserving to the States
respectively, the Appointment of the Officers, and
the Authority of training the Militia according to
the discipline prescribed by Congress....” For the
executive branch, Article II, Section 2, states: “The
President shall be 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....” The Constitution
(Article 1) also prohibits states from keeping troops
or ships of war in time of peace, or engaging in war
(absent invasion or imminent danger), without the
consent of Congress.

Title 10 of the U.S. Code, which focuses on the
armed forces, further defines the purpose of the
Reserve components:

The purpose of each reserve component is to pro-
vide trained units and qualified persons available
for active duty in the armed forces, in time of war
or national emergency, and at such other times as
the national security may require, to fill the
needs of the armed forces whenever more units
and persons are needed than are in the regular
components.

Title 10 also describes the policy for ordering the
components to active service:

Whenever Congress determines that more units
and organizations are needed for the national
security than are in the regular components of
the ground and air forces, the Army National
Guard of the United States and the Air National
Guard of the United States, or such parts of
them as are needed, together with units of other
reserve components necessary for a balanced
force, shall be ordered to active duty and retained
as long as so needed.

These constitutional and legislative measures
establish and characterize full-time, federally con-
trolled Active forces, supporting Reserve forces,
and state-maintained National Guard forces that
work together to protect the country, but these
components vary in governing authorities and the
role they play in national security.

The Seven Reserve Components

The Department of Defense (DOD) Total Force
Policy defines the components of the U.S. armed
forces as:

- **Active Component (AC) Military.** The AC mili-
tary are those full-time military men and women
who serve in units that engage enemy forces, pro-
vide support in the combat theater, provide other
support, or who are in special accounts (tran-
sients, students, etc.). These men and women are
on call 24 hours a day and receive full-time mili-
tary pay.

- **Reserve Component (RC) Military.** The RC
military is composed of both Reserve and Guard
forces. The Army, Navy, Marine Corps, and Air
Force Reserves each consist of three specific cat-
egories: Ready Reserve, Standby Reserve, and
Retired Reserve. This essay’s focus is solely on
the Ready Reserve.

Title 10 of the U.S. Code further defines the
reserve components of the armed forces as the Army
National Guard of the United States, Army Reserve,
Navy Reserve, Marine Corps Reserve, Air National
Guard of the United States, Air Force Reserve, and
Coast Guard Reserve. Together, these Reserve and
Guard components constitute 38 percent of the total
uniformed force and a majority of Army forces. (See
Table 2.)

Specific Roles and Responsibilities of the
Reserve and National Guard Components

**Reserve Components.** The Army, Navy, Air
Force, Marine Corps, and Coast Guard Reserves
have only federal missions and are subordinate
directly to the leadership of their respective ser-
vices under Title 10 of the U.S. Code (which enumer-
ates federal U.S. armed forces law). They tend to be
closely integrated with the Active components of
their respective services. Some Active component
organizations have individual Reserve members or
Reserve units directly assigned to them.

**National Guard.** National Guard elements differ
from Reserve elements in substantial ways, primar-
ily in that the Guard has both state and federal mis-
sions, reflecting its origin as state militias. Title 32
of the U.S. Code describes the relationship between the federal government and the state National Guard units recognized as elements of the Army and Air National Guards of the U.S.:

In accordance with the traditional military policy of the United States, it is essential that the strength and organization of the Army National Guard and the Air National Guard as an integral part of the first line defenses of the United States be maintained and assured at all times. Whenever Congress determines that more units and organizations are needed for the national security than are in the regular components of the ground and air forces, the Army National Guard of the United States and the Air National Guard of the United States, or such parts of them as are needed, together with such units of other reserve components as are necessary for a balanced force, shall be ordered to active Federal duty and retained as long as so needed.  

All of the 50 states, the District of Columbia, and the U.S. territories of Puerto Rico, Guam, and U.S. Virgin Islands have National Guard organizations responsible, when functioning under state law in state status, to their governors or chief executives for executing state missions such as disaster response or support to civil authorities during a crisis. The de facto operational commander of these organizations while they are under state control is the state adjutant general (TAG), usually a major general, who is the senior military official in his or her state, territory, or district.

At the federal level, the National Guard Bureau, which is a joint activity of the Department of Defense, serves as the channel of communications between the states and the Departments of the Army and the Air Force on Guard matters. The Chief of the National Guard Bureau is a four-star general. The Chief is the principal adviser on National Guard Affairs to the DOD, Army, and Air Force leadership.

According to the National Guard Adjutants General Association, the National Guard represents the world’s 11th largest army, fifth largest air force, and 38 percent of the total U.S. military force structure “and has over 458,000 personnel serving in 3,600 communities throughout the country.” While this is accurate in aggregate numbers, the Guard is in reality a collection of militia-type units, each answering separately to its respective state, district, or territorial chief executive. The Guard is not constituted as a singular service or force, although issues unique to the Guard in its structure, equipping, and role when mobilized for federal service under Title 10 of the U.S. Code are handled by the National Guard Bureau. That said, with congressional delegations from all of the states and territories paying close attention to their Army and Air National Guard organizations, the National Guard has a powerful representational presence in Washington.

The Army National Guard and Army Reserve

Army National Guard. The 354,200 members of the Army National Guard provide significant forces for national defense. These include:

- Eight division headquarters;
- Six general officer–level operational commands (including sustainment as well as air and missile defense);
The U.S. Army has relied heavily on the Army National Guard to meet its requirements in Iraq, Afghanistan, and elsewhere. Since September 11, 2001, the Army National Guard has mobilized over 500,000 soldiers for federal missions. At one point in 2005, over half of the combat brigades deployed in Iraq came from the Army National Guard.

The Air National Guard and Air Force Reserve

**Air National Guard.** The 105,400 Air National Guard members in 50 states, three territories and the District of Columbia provide 89 Wings and 188 geographically separated units. Their 1,145 aircraft constitute nearly 31 percent of the Air Force’s total strike fighter capability, 38 percent of the Air Force’s total airlift capability, and 40 percent of the Air Force’s total air refueling tanker fleet.

Like the Army, the Air Force has depended heavily on its Air Guard component since September 11, 2001. The Air National Guard performs 30 percent of the worldwide Air Force missions each day, including the majority of continental air defense.

Under the North American Aerospace Defense Command (NORAD), “the Continental U.S. NORAD Region (CONR) provides airspace surveillance and control and directs air sovereignty activities for the continental United States (CONUS).” This organization leads Operation Noble Eagle, which provides around-the-clock defense from airborne threats over U.S. territory.

The First Air Force, also known as Air Forces Northern (AFNORTH), fulfills the largest portion of this mission, of which the Air National Guard is the primary component. The First Air Force was established during the Cold War to defend U.S. territory from Soviet aerial attack. After September 11, 2001, this unit’s mission gained new purpose as airborne threats from non-state actors became a reality. According to an FY 2014 budget explanation:

The primary [Operation Noble Eagle] cost driver is the mobilization cost of National Guard and Reserve Component personnel. These mobilized
personnel provide force protection to key facilities within the United States and provide an increased air defense capability to protect critical infrastructure facilities and U.S. cities from unconventional attack.\textsuperscript{22}

As of January 2015, there were nine aligned Air National Guard fighter wings included in AFNORTH, flying a combination of F-15 and F-16 aircraft.\textsuperscript{23}

**Air Force Reserve.** The 70,000 airmen of the Air Force Reserve, organized into the Air Force Reserve Command, operate the full range of Air Force aircraft and other equipment in support of all Air Force missions.\textsuperscript{24} Specifically:

[Reservists] support nuclear deterrence operations, air, space and cyberspace superiority, command and control, global integrated intelligence surveillance reconnaissance, global precision attack, special operations, rapid global mobility and personnel recovery. They also perform space operations, aircraft flight testing, aerial port operations, civil engineer, security forces, military training, communications, mobility support, transportation and services missions.\textsuperscript{25}

This Reserve component flies and maintains “fighter, bomber, airlift, aerial refueling, aerial spray, personnel recovery, weather, airborne warning and control, and reconnaissance aircraft.”\textsuperscript{26} “On any given day in 2013,” according to the Chief of the Air Force Reserve, “approximately 5,000 Air Force Reservists were actively serving in support of deployments, contingency taskings, exercises and operational missions.”\textsuperscript{27}

The Air Force Reserve Command is organized into three subcategories: the 4th Air Force, the 10th Air Force, and the 22nd Air Force. The majority of these forces provide a significant amount of the Active Air Force’s airlift needs, with around half of Air Force Reserve personnel involved in airlift in some way.\textsuperscript{28}

The Active Air Force has relied heavily on the Air Force Reserve for combat operations. For example, during the combat phase of Operation Iraqi Freedom (March 19–May 1, 2003), “Air Force Reserve aircraft and crews flew nearly 162,000 hours and deployed 70 unit-equipped aircraft in theater while aeromedical personnel provided 45 percent of the Air Force’s aeromedical crews that performed 3,108 patient movements.”\textsuperscript{29}

**The Navy Reserve**

The Navy Reserve has an end strength of 57,300.\textsuperscript{30} Many Navy Reservists are in the Ready Reserve, which “provides a pool of trained servicemembers who are ready to step in and serve whenever and wherever needed.”\textsuperscript{31} The Ready Reserve force is made up of the Selected Reserve (SELRES) and the Individual Ready Reserve (IRR).\textsuperscript{32}

The SELRES is the largest component of the Navy Reserve and includes two subgroups:

- **Drilling Reservists/Units**—“Reservists who are available for recall to Active Duty status” and who “serve as the Navy’s primary source of immediate manpower.”\textsuperscript{33}
- **Full-Time Support**—“Reservists who perform full-time Active Duty service that relates to the
training and administration of the Navy Reserve program. These personnel, who are full-time but do not move as frequently to different geographic locations as their active-duty counterparts do, facilitate continuity and institutional knowledge at Reserve training facilities.

The IRR “consists of individuals who have had training or have previously served in an Active Duty component or in the Selected Reserve.” There are two categories of IRR personnel:

- **Inactive status**—Reservists who have no obligation to the military and are not required to train. They subsequently receive no benefits from the military.

- **Active status**—Reservists who “may be eligible to receive pay or benefits for voluntarily performing specific types of Active Duty service.”

The Navy also maintains a Standby Reserve, composed of reservists who have transferred out of the Ready Reserve but are identified as potentially able “to fill manpower needs in specific skill areas”; Retired Reserve-Inactive members, who are receiving military retirement benefits; and the Naval Air Forces Reserve, which includes one Logistics Support Wing, one Tactical Support Wing, and a number of helicopter and maritime patrol squadrons.

In 2014, the Navy Reserve provided over 2 million man-days of operational support to the Navy, Marine Corps, and Joint Force, including 2,947 Reserve sailors deployed around the globe.

### The Marine Corps Reserve

The Marine Corps has a division, air wing, logistics group, and senior force headquarters—almost a quarter of its force structure—in its 39,200-member Marine Corps Forces Reserve component. The Marine Corps Forces Reserve is geographically dispersed throughout 47 states, Washington, D.C., and Puerto Rico.

The Marine Corps has relied heavily on its Reserve component to support combat operations since September 2001. More than 23,000 Marine Reserves—units and individual augmentees—were mobilized for Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). At the peak of mobilization in May 2003, 21,316 Reserves—52 percent of the entire Selected Marine Corps Reserves—were on active duty, primarily supporting operations in Iraq and elsewhere in the Middle East.

The Marine Corps Reserve includes the 4th Marine Division, the 4th Marine Aircraft Wing, the 4th Marine Logistics Group, the Force Headquarters Group, and a Headquarters Battalion. The 4th Marine Division includes one assault amphibian battalion, one combat engineer battalion, one light armored reconnaissance battalion, one reconnaissance battalion, one tank battalion, three regiments,
two reconnaissance companies, and one training company.\textsuperscript{43} The 4th Marine Aircraft Wing includes two Marine Aircraft Groups:

- Marine Aircraft Group 41 flies a fighter squadron (F/A-18C); a medium tiltrotor squadron (MV-22B); an aerial refueler transport squadron (KC-130T); and associated logistics and support.

- Marine Aircraft Group 49 flies one heavy helicopter squadron (CH-53E); one light attack helicopter squadron (AH-1W); one medium helicopter squadron (CH-46E); one aerial refueler squadron (KC-130T); and associated logistics and support.\textsuperscript{44}

\textbf{Coast Guard Reserve}

The Coast Guard is a military organization with law enforcement authority, maintained within the Department of Homeland Security since 2003. While small in number, the Coast Guard is responsible for key missions such as port security—both in the U.S. and in support of overseas operations—as well as drug interdictions, aids to navigation, and search and rescue. Its "nearly 40,000" active component members are supported by (among others) roughly 7,500 members of the Coast Guard Reserve.\textsuperscript{45}

The Coast Guard Reserve is similar to the Navy Reserve in that its members are assigned to Active component Coast Guard units and stand ready to reinforce them when mobilized. The Coast Guard Reserve also plays a key role in all of the maritime dimensions of homeland security.\textsuperscript{46}

\textbf{Historical Context}

Since the Revolutionary War, the National Guard and Reserve (or their predecessors, the state militias) have provided critical support for national defense. Until the Cold War, the United States maintained a small standing regular force. Threats to national security interests were relatively small, and a large standing army was not considered necessary or even desirable. On occasions when very large ground forces were needed, such as the American Civil War and World Wars I and II, National Guard and Reserve forces provided the essential bolstering of combat power until the draft and the training establishments could provide sufficient units to the Regular forces of the Active component.

After the outbreak of the Korean War, the U.S. created relatively large Guard and Reserve forces to support the Active component in deterring Soviet Bloc aggression and defending U.S. and allied global interests during the Cold War. Unsurprisingly, this era was not without its issues related to the mission, size, readiness, cost, and equipment of the Reserve component. Secretary of Defense Robert McNamara created a "firestorm" in Congress when he attempted to integrate the Guard and Reserve into the Active component.\textsuperscript{47} However, despite shortages of personnel, equipment, and funding, the Reserve component accomplished its missions reasonably well, including a massive mobilization during the 1961 Berlin Crisis.\textsuperscript{48}

The Vietnam War, however, was a watershed event that shattered the relationship between the Active and Reserve components. In 1964, given the small size of the Active component following its post-Korean War drawdown and the wealth of combat experience among servicemembers in the Guard and Reserve who had served in World War II and/or Korea, the services relied heavily on the Reserve components. The U.S.-supported government of South Vietnam was rapidly collapsing under a Viet Cong onslaught supported by North Vietnam, and the U.S. moved to prepare large, regular U.S. forces for ground combat. Unsurprisingly, national-level military leaders expected to rely heavily on the Reserve component for this major combat operation.

President Lyndon Johnson, however, had other ideas.\textsuperscript{49} As noted by retired Army Lieutenant Colonel Lewis Sorley, President Johnson’s decision not to mobilize the nation for war had devastating consequences for the relations between the Active and Reserve components and for the combat effectiveness of both:

The President addressed the Nation on July 28 [1965], one of the most fateful junctures in the long war, saying that he planned to send 50,000 more troops to Vietnam...and that more would be sent as needed. Insiders waited expectantly to hear that he was authorizing mobilization to support the deployments but instead were astounded to learn that it would be done without the Reserve.

This constituted a crisis of the first magnitude for those charged with preparing and dispatching the deploying forces. The Army in particular, more reliant on its Reserves than the other services, was now in a bind. Instead of being
able to supplement active units, it was now faced with replicating those forces, newly created and requiring equipment, training, and large numbers of additional young officers and noncommissioned officers.

General Harold Johnson, Army Chief of Staff from June 1964 to June 1968, recalled that the President's refusal to call up Reserve forces constituted one of the most difficult crises in those turbulent years. The general learned of the decision in a July 24 meeting with McNamara and the service chiefs. All were stunned. “Mr. McNamara,” said Johnson, “I can assure you of one thing, and that is that without a call-up of the Reserves the quality of the Army is going to erode and we’re going to suffer very badly.”

...As a consequence, “the active force was required to undertake a massive expansion and bloody expeditionary campaign without the access to Reserve forces that every contingency plan had postulated, and the Reserve forces—to the dismay of long-time committed members—became havens for those seeking to avoid active military service in that war.”

...The effects General Johnson predicted were soon felt. In late 1966 he observed that the level of experience in the Army was steadily diminishing.... “By 1 July 1967,” he forecast from the force expansion already planned, “more than 40 percent of our officers and more than 70 percent of our enlisted men will have less than 2 years of service.”...50

The Vietnam War and its aftermath had a profound impact on U.S. senior military leadership in many ways and on the relationship between the Active and Reserve components. General Creighton Abrams, who as Vice Chief of Staff of the Army had overseen the preparation of Army forces for deployment to Vietnam and who had served as commander of all forces in that engagement, became Army Chief of Staff in 1972 and began to restore the combat effectiveness of an Army that had seen its morale crumble during the Vietnam War. To enhance readiness and expand the size of the force available for large-scale operations, he and then-Secretary of Defense Melvin Laird created the Total Army concept that integrated the Active and Reserve components much more closely.

Some have argued that one reason for this approach was to make it impossible for the Army to go to war again without the Guard and Reserve. Some also claimed that the resulting “Abrams Doctrine” would limit the ability of future Presidents and Congresses to commit the U.S. to war without first garnering the public support required to mobilize and commit the Reserve components. However, the historical record does not substantiate this claim.51

The Abrams Doctrine led the Army to integrate the components to the degree that a third of the force structure of most Army divisions stationed in the continental U.S. was made up of National Guard units. To provide the President with the necessary access to the Guard and Reserve absent a declaration of war or declared national emergency, Congress created the Presidential Reserve Callup Authority in 1976.52

The Total Army concept was tested in the response to Saddam Hussein’s invasion of Kuwait in 1990 during Operations Desert Shield and Desert Storm. While over 37,000 Guard and Reserve soldiers performed combat, combat support, and combat service support missions during the conflict, three Active divisions with “Roundout Brigades” deployed without them. These brigades were activated just before offensive operations began, but due to concerns about their readiness for immediate combat employment, they were first sent to the National Training Center in California to train and be evaluated. Afterward, a GAO report found that the Guard and Reserve forces supporting the Army were not at the appropriate level of readiness.53

The next major change in the relationship between the Active and Reserve components occurred after the terrorist attacks of September 11, 2001. As the engagements in Iraq and Afghanistan turned from conventional operations needed to overthrow Saddam Hussein and the Taliban, respectively, to prolonged counterinsurgency and nation-building operations, the relatively small Active component ground forces became increasingly strained to sustain the high numbers of forces needed in the field.

Greatly downsized from its Desert Storm levels, the Army was able to expand its force structure only modestly. Restricting sustained operations to just the Active component meant that its small but highly trained force would be deployed indefinitely, likely exacting a toll on its morale and ability to retain
skilled personnel. Or it could once again turn to its Reserve and National Guard elements to expand its capacity for sustained operations.

With time to train and properly prepare before deployment, Army National Guard brigades began to assume their place in a rotation schedule for operations in Iraq and Afghanistan. “At one point in 2005, half of the combat brigades in Iraq were Army National Guard—a percentage of commitment as part of the overall Army effort not seen since the first years of World War II.” With combat rotations scheduled well in advance, Reserve component units were given the same time and training resources to prepare for deployment that Active component units received.55

Air Force operations were similarly supported by large, sustained mobilization of Air Force Reserve and Air National Guard units that handled strategic lift, aerial refueling, and surveillance duties, among others, alongside their Active component counterparts. In similar manner, the Marine Corps sustained its deployment cycles to Iraq and Afghanistan through heavy reliance on its Marine Forces Reserve units.

Major Issues Concerning the Reserve and National Guard Components

The current budgetary uncertainty surrounding all of America’s armed forces has generated several contentious issues related to the Guard and Reserve that, left unresolved, might well compromise their future effectiveness. These issues relate to the appropriate balance between the Active and Reserve components and include their respective roles and missions, size, structure, and equipment. All of these in turn weigh on the relationships between the Active and Reserve components.

Balancing Resources. The Budget Control Act of 2011 and the subsequent caps on defense spending have placed all of the armed forces under tremendous pressure as they deal with an increased demand for operational and “presence” missions in spite of shrinking forces and resources. One struggle between the Active and Reserve components is in striking the right balance in allocating resources that include funding, access to training facilities and resources, and apportionment of manpower.56

Having worked alongside Active component forces for over a decade in Iraq and Afghanistan, some in the Guard and Reserve have made the case that they can assume more missions in the future and can do so for less money than active-duty forces consume.57 The Active component has countered that given their restricted training time,58 Guard and Reserve units cannot maintain the same high readiness levels required for many critical missions, particularly concerning complex joint and combined arms operations.

Both arguments have merit. Reserve component forces are less expensive than Active component forces when not activated, because the costs of sustaining Guard and Reserve personnel (salaries, schools, housing, medical care, etc.) are borne in large part by the civilian economy. Even when activated, they are somewhat less expensive over the long term because of differentials in retirement benefits. Because they train less frequently, they also consume less fuel, ammunition, and other supplies and require less maintenance for their equipment when not activated.

It is also true that the Active component maintains a higher level of readiness. Active component units train throughout the year, honing their ability to execute both tactical actions and higher-level operations that, due to their complexity, place great demands on senior-level staffs. Guard and Reserve performance in Iraq and Afghanistan was as good as it was not only because of the dedication of the members involved, but also because they were given the time and resources required to train to the same tactical standards as Active component forces before they deployed.59

Balancing Roles. Traditionally, the Guard and Reserve components have served as a national strategic reserve force, a national asset that can be mobilized in times of significant crisis to provide expanded military capacity to the Joint Force. In the recent engagements in Iraq and Afghanistan, however, they have often served as an operational reserve, filling the manpower needs of an overly taxed Active component. “As an operational reserve,” writes Dr. Daniel Gouré of the Lexington Institute, “Guard forces participated routinely and regularly in ongoing military missions. Entire Guard brigade combat teams (BCTs) were deployed to both conflicts, [and] Guard officers commanded entire multi-national Corps in Iraq.”

To their credit, the Guard and Reserve components filled this role well, but it has made them more closely resemble the Active component. The time required to prepare and train to deploy, and the overseas deployments themselves, have exceeded what
had previously been expected of individuals not serving full-time in the Active military component.

The difficulty of achieving balance in resources and in the roles and missions assigned to Active, Guard, and Reserve elements has drawn focused attention at the highest levels of government. In 2013, Congress created a National Commission on the Structure of the Air Force to “determine whether, and how, the structure should be modified to best fulfill current and anticipated mission requirements...in a manner consistent with available resources.” The commission submitted its report on January 30, 2014, recommending in part that the Air Force should “entrust as many missions as possible to its Reserve Component forces” while realizing that “there is an irreducible minimum below which the Air Force cannot prudently cut Active Component end strength without jeopardizing warfighting capabilities, institutional health, and the ability to generate future forces.”

In 2015, Congress also convened a National Commission on the Future of the Army to undertake a comprehensive study of the “structure of the Army and policy assumptions related to [its] size and force mixture” in order to assess “the size and force structure of the Army’s active and reserve components.” The commission is scheduled to submit its report to the President and Congress by February 1, 2016. Although initially considered as a mechanism to resolve a dispute between the Active and Reserve components over the allocation of helicopter assets, the commission was charged with taking a broader view of the role played by each element in providing essential capabilities that constitute a majority of America’s ground combat power.

A Critical Component of National Security

Our armed forces must be prepared to support an effective national military strategy across the full range of potential threats that the nation faces in the current and uncertain future threat environment. This calls for Guard and Reserve component forces to be postured for action in ways that best suit their organizational nature, their access to resources, and the demands of evolving operational and strategic requirements. In general, the Reserve component, composed of Guard and Reserve forces, best supports the country by serving as the nation’s insurance policy in the event that the Active component finds itself in major combat operations rather than by substituting for the Active component in smaller contingencies due to an undersized Active force.

The Reserve and National Guard elements of the U.S. military provide critical support to the common defense of the nation every day. Whether flying supply and logistics support missions, acting as the federal government’s first response force at home, or supporting active-duty forces during combat engagements overseas, these components have enabled and enhanced the U.S. military’s overall capabilities and capacities.

The men and women who compose the Reserve components are a testament to the desire, willingness, and ability of our countrymen to serve the security interests of our nation while also contributing to the wealth, resiliency, vitality, and stability of our nation on a daily basis in their various capacities as private citizens when not soldiering. Our Reserve and National Guard forces are national assets that must be resourced and supported in a manner that is commensurate with their critical functions in preservation of the nation’s security.
Endnotes:


2. Ibid., p 7.

3. 10 U.S. Code § 10102.

4. 10 U.S. Code § 10103.


6. Ibid.

7. 10 U.S. Code § 10101.

8. 10 U.S. Code § 10102.


17. Ibid., p. 131.


20. Ibid., pp. 21–23.


26. Ibid.


32. Ibid.

33. Ibid.

34. Ibid.

35. Ibid.

36. Ibid.

37. Ibid.


48. Ibid., p. 5.

49. Ibid., p. 12.


55. Ibid.


58. Traditionally, Guard and Reserve Component units drill one weekend a month and two weeks each summer or 39 days a year. In reality, most of their members dedicate much more time to their units.
59. For a detailed discussion and analysis of the Active/Reserve component balance issue as it relates to the Army, see Feickert and Kapp, “Army Active Component (AC)/Reserve Component (RC) Force Mix: Considerations and Options for Congress.”


63. Ibid., p. 8.


65. 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.
Europe

Recent events in Ukraine, a resurgent Russia, and the rise of the Islamic State in Iraq, Syria, and Libya have brought Europe back into the top tier of U.S. international interests. It is clear why the region matters to the U.S. The 51 countries in U.S. European Command (EUCOM) area of responsibility include approximately one-fifth of the world's population, 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.

Some of America’s oldest (France) and closest (the United Kingdom) allies are found in Europe. The U.S. and Europe share 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. U.S. sacrifice for Europe has been dear. During the course of the 20th century, millions of Americans fought for a free and secure Europe, and hundreds of thousands died.

The economic ties are important as well. 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. Europe is important to the U.S. because of its geographical proximity to some of the world’s most dangerous and contested regions. 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 no real effort is made to resolve the conflict). The European 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. Recent instability in North Africa, most notably ISIS operations in Libya, has shown the utility of basing robust U.S. military capabilities near potential global hot spots. For example, when ordered to intervene in Libya against Muammar Qadhafi, 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. Soon after Russia annexed Crimea and invaded eastern Ukraine, the U.S. quickly deployed 600 U.S. soldiers to the Baltics and Poland from U.S. bases in Italy. The F-15s and F-16s (including their crews, maintenance staff, fuel, spare parts, etc.) that the U.S. Air Force initially sent to the region after the invasion of Ukraine were 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.

**The Arctic.** The 2015 Index of U.S. Military Strength identified the Arctic as an important operating environment in Europe. This has not changed in the 2016 edition. If anything, tension in the region is increasing as a result of Russian activity.

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 world’s least populated areas, with sparse nomadic communities and very few large cities and towns. Although official population figures are nonexistent, the Nordic Council of Ministers estimates the figure to be 4 million—making the Arctic’s population slightly bigger than Oregon and slightly smaller than Kentucky. Approximately half of the Arctic population lives in Russia, which is ranked 143rd out of 178 countries in the 2015 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. Less 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.

The economic incentives for exploiting these shipping lanes are substantial and will drive Arctic nations to press their interests in the region. For example, using the Northern Sea Route (NSR) along the Russian coast cuts the distance between Rotterdam and Shanghai by 22 percent and saves hundreds of thousands of dollars in fuel costs per ship. Unlike in the Gulf of Aden, no pirates are currently operating in the Arctic, and piracy is unlikely to be a problem in the future. But there is still a long way to go before the NSR becomes a viable option. In 2014, a total of 23 ships made the journey over the top of Russia (compared with the more than 17,000 that transited the Suez Canal) and carried 274,000 tons of cargo. By comparison, in 2013, 71 vessels or 1,355,000 tons shipped along the route, indicating the unpredictability of future shipping trends in the Arctic.

Of course, the U.S. has an interest in stability and security in the Arctic because the U.S. is one of the eight Arctic nations. 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 that is epitomized by the ongoing sovereign debt crisis in Europe’s southern countries. These countries have not made the structural reforms needed for long-term adjustment. The eurozone’s overall economic freedom is seriously undermined by the excessive government spending required to support elaborate welfare states. Economic policies being pursued by many eurozone countries hinder productivity growth and job creation, causing economic stagnation and rapidly increasing levels of public debt.

Cyprus, Greece, Ireland, Portugal, and Spain have received multibillion-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. Recipient countries have adopted stringent austerity measures in exchange for aid, but their populations oppose any spending cuts.

Many among Europe’s political elite believe that deeper European integration, not prudent economic
After campaigning on an anti-austerity platform, 42 percent in Italy. At the end of 2013, the eurozone was 23 percent, reaching 51 percent in Spain and 42 percent in Italy. 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 strong 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, political instability in Greece could spill over to other places in southeastern Europe—already one of Europe’s most unstable regions. Less than 24 hours after the Greek elections, the Russian ambassador to Greece was seen entering the headquarters of Syriza. Greek–Russian relations could become close under the Syriza government at a time when European unity is required to stand up to Russia’s aggression in Ukraine. Syriza has also questioned whether Greece should remain in NATO.

American banks hold some eurozone debt and would take a hit in the event of any default, but the deepest effects would likely be felt through the interconnected global financial system. In a lagging European economy, for example, U.S. exports to European markets would start to fall off and would decline.

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.

On top of these difficulties, Europe has been trying to deal with an immigration crisis, as the conflicts in Syria and Iraq propel large numbers of refugees westward in search of safety and a better life.

### The South Caucasus

One of the most important energy corridors for Europe is through Turkey and the South Caucasus. Fortunately, Europe has a very strong partner in the South Caucasus: the Republic of Georgia. Georgia sits at a crucial geographical and cultural crossroads that for centuries has proven strategically important for military and economic reasons; today, its strategic location is also important to the U.S. and Europe. Georgia is modernizing key airports and port facilities, and a major railway project from Azerbaijan to Turkey through Georgia opened in 2015.

The transit route through Georgia provides one of the shortest and potentially most cost-effective routes to Central Asia. This is particularly important in meeting the need to bring alternative sources of oil and natural gas to the European market. In view of Russia’s willingness to use energy resources as a tool of foreign policy, this could not come at a more important time for Europe.

In 2015, construction began on two key natural gas pipelines: the Trans-Anatolian Natural Gas Pipeline (TANAP) and the Trans-Adriatic Pipeline (TAP). The TANAP will run 1,150 miles through the Caucasus and Turkey; the TAP will run from the Turkish–Greek border to Italy via Albania and the Adriatic Sea. It is expected that both will be completed by 2018. When constructed, both pipelines will link up with the existing South Caucasus Pipeline, which connects Turkey to the Azerbaijani gas fields in the Caspian Sea through Georgia. Together, all three pipelines will form the so-called Southern Gas Corridor.

Not to be outdone, Russia announced in early 2015 that its South Stream project has been cancelled and replaced by a so-called Turkish Stream pipeline that will bring Russian gas across the Black Sea to Turkey.
to then link up with TAP. Already, 10,000 oil tankers a year pass through the Turkish Straits. The Baku–Tbilisi–Ceyhan oil pipeline brings oil from the Caspian Sea to the Mediterranean. These new pipelines reaffirm Turkey’s desire to serve as a regional energy hub.

**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 world’s most important and arguably most successful defense alliance. Other relationships, however, also have a strong impact on the U.S.’s ability to operate in and through the European region.

**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 the alliance 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, counterpiracy 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 so for the foreseeable future. With the NATO-led combat mission in Afghanistan finished and with an increasingly bellicose Russia on Europe’s doorstep, there is a growing recognition that NATO must return to its raison d’être: collective security.

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 Western Europeans before Russia’s invasion of Ukraine and annexation of Crimea, it is now clear that NATO’s Eastern European members face legitimate security concerns: For those NATO members that lived under the iron fist of the Warsaw Pact or that were 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 are especially important in Europe, yet they are not uniformly implemented. For example, day-to-day interaction between U.S. and allied officer corps and joint preparedness exercises were more regular with Western European militaries than with frontier allies in Central Europe, although the crisis in Ukraine has led to new exercises with eastern NATO nations. In the event of a national security crisis in Europe, first contact with an adversary might still 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. Now that the NATO-led combat mission in Afghanistan has ended, the alliance should also get back to carrying out regular training exercises for its NATO Treaty Article 5 mission of collective self-defense. Regular training exercises are a key element of collective security and ensuring continued defense cooperation.

There are also non-military threats to the territorial integrity of NATO countries for which the alliance is completely unprepared. The biggest threat to the Baltic States, for example, may come not from Russian tanks rolling into a 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 instability, especially when coupled with conventional power projection.

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.–Europe 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 servicemembers do not recall World War II or the Cold War, cementing bonds with America’s allies in Europe becomes a vital task. Currently, 22 nations in Europe have a state partner in the U.S. National Guard.
Training Exercises. General Phillip Breedlove, Commander, U.S. Forces Europe, has described NATO forces as being “at a pinnacle of interoperability.” He further states that for NATO to sustain these levels of interoperability, “We need to 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. 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.” The 2016 Defense Budget Proposal requested an additional $789 million for an extension of the European Reassurance Initiative but once again includes the additional funding as part of OCO funding.

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

When it comes to effective international combined operations, the investments of U.S. partners matter just as much, and it is clear that Europe is not pulling its weight. 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. During the recent Libya operation, for example, 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 2 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.15

Article 3 of the 1949 North Atlantic Treaty, NATO’s founding document, states that members, at a minimum, will "maintain and develop their individual and collective capacity to resist armed attack."16 Only a handful of NATO members can say that 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 2014, just four of the 28 NATO members—the United States, Estonia, Britain, and Greece—spent the NATO-required 2 percent of gross domestic product (GDP) on defense. 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 2015.17

As a result of this lack of investment, even smaller campaigns like the 2011 operation in Libya floundered. What began as a military operation inspired by France and Britain 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:

> 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.18

The lack of defense investment by Europeans has also had a direct impact on recent overseas operations. At the height of the combat operations in Afghanistan, many European NATO members were having difficulty deploying just dozens of troops at a time. The Europeans’ contribution to the air campaign against the Islamic State has been meager considering the size of their air forces. When Europeans do send troops, many are often restricted by numerous nationally imposed limitations on their activities (commonly called “caveats”). In Afghanistan, examples included no flying at night or no combat patrols beyond a certain distance from a base that limits their usefulness to the NATO commander.19 In the campaign against the Islamic State, the few European countries that are conducting air strikes will do so only in Iraq even though the terrorist group is very active (and has its headquarters) in Syria.

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.** Germany decreased defense spending by 800 million euros in 2014, remaining (at 1.3 percent of GDP) well below the NATO benchmark of 2 percent of GDP on defense spending.20 In March 2014, the German government announced plans to boost defense spending by 6.2 percent or 1.2 billion euros over the next five years.21 This is a much-needed increase as the German military struggles with equipment that is in disrepair or short supply. According to news descriptions of a Bundestag report, only seven of 43 German naval helicopters are flightworthy, and only one of four German submarines is operational. The report also states that only 70 of 180 GTK Boxer Armored Vehicles are fit for deployment.22 The air force faces similar challenges; less than half of Germany’s fighter jets were ready for use, according to a 2014 parliamentary report.23

The German forces participating in a NATO training exercise in Norway substituted broomsticks for machine guns that they did not have.24 The units involved are assigned to the Spearhead force, which was created as a key element in NATO’s response to Russian aggression against Ukraine at the Wales summit.25 German Defense Minister Ursula von der Leyen has admitted that Germany is currently unable to meet NATO’s readiness targets.26

Germany will spend 240 million euros to keep dual-capable Tornado aircraft, an important piece of NATO’s nuclear deterrent, flying until 2024.27 It is also, however, cutting procurement and decommissioning certain specific capabilities, a reality that will fall primarily on its Army and Air Force. Germany has announced procurement of 18 Sea
Lion-variant helicopters and 82 tactical transport helicopters from Airbus, reportedly to compensate for cancelled and reduced procurement elsewhere.\textsuperscript{28} At the United Nations in September 2014, German Foreign Minister Frank-Walter Steinmeier called for greater German engagement in the world, but he focused principally on diplomatic rather than military engagement.\textsuperscript{29} However, Germany has supplied weapons to Kurdish troops fighting ISIS in Iraq, including rifles and MILAN anti-tank guided missiles and Panzerfaust 3 rockets,\textsuperscript{30} and the German Parliament has approved a maximum of 100 instructors to take part in training missions through January 2016.\textsuperscript{31} Whether Germany decides to continue these training missions after January 2016 remains to be seen.

Germany is attempting to increase its military participation abroad, but cautiously. German trainers on the ground are not allowed to engage in offensive operations. Germany also has not taken part in the air campaign to bomb ISIS targets. In Afghanistan, 850 Germans remain as part of NATO’s Resolute Support Mission. A contributor to Baltic Air Policing, Berlin committed 500 troops to take part in NATO training exercises in Lithuania across 2015.\textsuperscript{32}

Hemmed in by public reluctance to support stronger military engagement overseas, and with little being done to build out real defense capabilities, Germany will continue to be an economic powerhouse with mismatched military capabilities.

**France.** Although France rejoined NATO’s Integrated Command Structure in 2009, it remains outside the alliance’s nuclear planning group. France’s defense budget is anticipated to stay at 1.5 percent of GDP in 2015.\textsuperscript{33} While the country kept a NATO summit commitment to protect defense from further budget cuts, its defense spending remains well below 2 percent of GDP, and the government had to take unusual measures to fill a shortfall of 2.2 billion euros in its 2015 budget. “The French defense ministry is preparing to sell and lease back as many as six Airbus A400M airlifters and two or three FREMM multipurpose frigates this year.”\textsuperscript{34}

France withdrew the last of its troops in Afghanistan at the end of 2014, although all French combat troops had left in 2012. All told, France lost 89 soldiers and 700 wounded in Afghanistan.\textsuperscript{35} In September, France launched Operation Chammal, the name given to the French contribution to the air campaign against the Islamic State in Iraq. In February 2015, the aircraft carrier *Charles de Gaulle* joined the operation, halving the flying time needed for French fighters to strike targets in Iraq. Previously, all of France’s fighters had flown from bases in the United Arab Emirates or Jordan.\textsuperscript{36} France has 12 Mirage fighter jets, one air-to-air refueling plane, and two maritime patrol aircraft in addition to the aircraft on the *Charles De Gaulle* involved in operations against ISIS.\textsuperscript{37}

Additionally, the French military is active in Africa, with over 3,000 troops taking part in anti-terrorism operations in Burkina Faso, Chad, Mali, Mauritania, and Niger as part of Operation Barkhane.\textsuperscript{38} France also has over 1,500 troops in Djibouti, along with Mirage fighters,\textsuperscript{39} and troops in Côte d’Ivoire, Burkina Faso,\textsuperscript{40} Ivory Coast, Central African Republic,\textsuperscript{41} Gabon, and Senegal.\textsuperscript{42}

France remains politically and militarily dedicated to retaining an independent nuclear deterrent. In February 2015, President Francois Hollande reiterated the French commitment to maintaining this deterrent: “The international context does not allow for any weakness…. [T]he era of nuclear deterrence is therefore not over.”\textsuperscript{43}

However, a sputtering economy and an enormous debt are having a large impact on French defense, and even though the French military remains one of Europe’s most capable, cuts in personnel and extension of aging equipment will be a reality. A 2013 French white paper on defense called for reductions in forces, including the elimination of 24,000 jobs from the Ministry of Defense.\textsuperscript{44}

The political and economic importance of the defense industry in France serves as a strong impediment to even deeper cuts, but the government is still finding ways to reduce defense spending. The government has not cancelled key procurements, but it has cut orders, delayed payments, and renegotiated contracts on equipment.\textsuperscript{45} So important is the defense industry that the government waited months following Russia’s invasion of Ukraine to suspend indefinitely delivery to Russia of two Mistral warships. Putin claimed that France’s not delivering the Mistral “has no importance.”\textsuperscript{46} Russia is reported to have told France that it no longer wants the warships, and negotiations on refunding money to Russia are ongoing.\textsuperscript{47} In February 2015, France signed a deal with Egypt to export 24 Rafale fighter jets, the first foreign order for the planes.\textsuperscript{48}

**The United Kingdom.** America’s most important bilateral relationship in Europe is the Special
Relationship with the United Kingdom. Culturally, both countries value liberal democracy, a free-market economy, and human rights at a time when many other 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, the rise of the Islamic State, increasing cyber attacks, and nuclear proliferation in Iran.

In his famous 1946 “Sinews of Peace” speech—now better known as his “Iron Curtain” speech—Winston Churchill 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 to make the Special Relationship between the U.S. and the U.K. unique. Then-Prime Minister of the United Kingdom Margaret Thatcher made clear the essence of the Special Relationship between the U.K. and the U.S. when she first met the then-President of the U.S.S.R. Mikhail Gorbachev in 1984:

...I am an ally of the United States. We believe the same things, we believe passionately in the same battle of ideas, we will defend them to the hilt. Never try to separate me from them.49

Since the 9/11 terrorist attacks, the United Kingdom has 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 this 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.

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, both the Royal Air Force (RAF) and Royal Navy have removed an additional 5,000 personnel each from their rolls.

Even with recent defense cuts, the U.K. still maintains the most effective armed forces in European NATO. In recent years, it increased funding for its highly respected Special Forces. By 2020, the RAF will operate a fleet of F-35 and Typhoon fighter aircraft—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 has 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 its seventh U.S.-built C-17 and has started to bring the European A400M cargo aircraft into service after years of 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 its service is being extended.

The Royal Navy’s surface fleet is based on the new Type-45 Destroyer and the older Type-23 Frigate. It is expected that the latter will 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. will not 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. 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 Countermeasure 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 is scheduled for 2016.

Turkey. Turkey has been an important U.S. ally since the closing days of World War II. During the Korean War, it deployed a total of 15,000 troops and suffered 721 killed in action and more than 2,000
wounded. Turkey joined NATO in 1952, one of only two NATO members (the other was Norway) that had a land border with the Soviet Union. Today, Turkey continues to play an active role in the alliance, but not without challenges. The low point in U.S.–Turkish relations came in 2003 when the Turkish parliament voted by a small margin (264 to 250) to deny the U.S. access to its territory for an invasion of Iraq. Under Prime Minister Recep Tayyip Erdogan, Turkey has been a challenging partner for the West, but it remains an important partner and NATO member.

Turkey is vitally important to Europe’s energy security. It is the gateway to the resource-rich Caucasus and Caspian Basin and controls the Bosphorus, one of the most important shipping straits in the world. Several major gas and oil pipelines run through Turkey. As new oilfields are developed in the Central Asian states, and given Europe’s dependence on Russian oil and gas, Turkey can be expected to play an increasingly important role in Europe’s energy security.

It is in America’s interest for Turkey to remain an important security partner. Turkey is home to Incirlik Air Base, a major U.S. and NATO air base. Turkey has largely been sitting on the fence in dealing with the threat from the Islamic State, but its military contribution to international security operations still sets it apart from many of the nations of Western Europe. The Turks have deployed thousands of troops to Afghanistan and have commanded the International Security Assistance Force (ISAF) twice since 2002. Turkey continues to maintain more than 500 troops in Afghanistan as part of NATO’s Resolute Support mission, making it the fifth-largest troop contributor out of 40 nations. The Turks have also contributed to a number of peacekeeping missions in the Balkans, still maintain almost 400 troops in Kosovo, and have participated in counterpiracy and counterterrorism missions off the Horn of Africa. They also deployed planes, frigates, and submarines during the NATO-led operation in Libya.

Turkey’s 510,000-strong active-duty military is NATO’s second-largest after that of the United States. A number of major procurement programs in the works include up to 250 new Altay main battle tanks, 350 T-155 Fırtına 155mm self-propelled howitzers, six Type-214 submarines, and more than 50 T-129 attack helicopters.

With respect to procurement, the biggest area of contention between Turkey and NATO is Turkey’s selection of a missile defense system. In September 2013, Turkey selected China Precision Machinery Import-Export Corporation (CPMIEC) for a $3.44 billion deal to provide the system. NATO has said that no Chinese-built system could be integrated into any NATO or American missile defense system. U.S. officials also have warned that any Turkish company that acts as local subcontractor in the program would face serious U.S. sanctions because CPMIEC has been sanctioned under the Iran, North Korea, and Syria Nonproliferation Act. After increased pressure from NATO allies, Ankara opened parallel talks with the European Eurosam, maker of the Aster 30, and the U.S. Raytheon/Lockheed Martin, offering the Patriot system. As of October 9, 2015, a final decision had not been made.

The Baltic States. The U.S. has a long history of championing the sovereignty and territorial integrity of the Baltic States that dates back to the interwar period of the 1920s. Since regaining their independence from Russia in the early 1990s, the Baltic States have been staunch supporters of the transatlantic relationship. Although small in absolute terms, the three Baltic States contribute significantly to NATO in relative terms.

Estonia. Estonia has been a leader in the Baltics in terms of defense spending. Although the Estonian Armed Forces total only 3,800 service personnel (including the Army, Navy, and Air Force), they are held in high regard by their NATO partners and punch well above their weight inside the alliance. Since 1996, almost 1,500 Estonian soldiers have served in the Balkans. Between 2003 and 2011, 455 served in Iraq. Perhaps Estonia’s most impressive deployment has been to Afghanistan: more than 2,000 troops deployed between 2003 and 2014 and the second-highest number of deaths per capita of all 28 NATO members.

Estonia has also demonstrated that it takes defense and security policy seriously, focusing its defense policy on improving defensive capabilities at home while maintaining the ability to be a strategic actor abroad. Over the next few years, Estonia will increase from one to two the number of brigades in the order of battle. The goal is to see 50 percent of all land forces with the capability to deploy outside national borders. Mindful of NATO’s benchmark that each member should spend 2 percent of GDP on defense, there is a planning assumption inside the Estonian Ministry of Defense that up to 10 percent (approximately 380 troops) of the armed forces will
always be deployed overseas. Estonia is also making efforts to increase the size of its rapid reaction reserve force from 18,000 to 21,000 troops by 2022. This increase and modernization includes the recently created Cyber Defence League, a reserve force that relies heavily on expertise found in the civilian sector.

_Latvia._ Latvia's recent military experience has also been centered on operations in Iraq and Afghanistan alongside NATO and U.S. forces. Latvia has deployed more than 3,000 troops to Afghanistan, and between 2003 and 2008, it deployed 1,165 troops to Iraq. In addition, Latvia has contributed to a number of other international peacekeeping and military missions. These are significant numbers considering that only 5,500 of Latvia's 17,000 troops are full-time servicemembers; the remainder are reserves.

Latvia's 2012 Defense Concept is an ambitious document that charts a path to a bright future for the Latvian National Armed Forces if it is followed closely and resourced properly. Latvia plans that a minimum of 8 percent of its professional armed forces will be deployed at any one time but will train to ensure that no less than 50 percent will be combat-ready to deploy overseas if required. The government has stated that the NATO benchmark of 2 percent of GDP in defense spending will be met by 2020, and spending will be increasing steadily until then. Each year, no less than 20 percent of the Latvian defense budget will be allocated to modernizing and procuring new military equipment. Latvian special forces are well respected by their American counterparts.

_Lithuania._ Lithuania is the largest of the three Baltic States, and its armed forces total 7,800 professional troops. Lithuania has also shown steadfast commitment to international peacekeeping and military operations. Between 1994 and 2010, more than 1,700 Lithuanian troops were deployed to the Balkans as part of NATO missions in Bosnia, Croatia, and Kosovo. Between 2003 and 2011, Lithuania sent 930 troops to Iraq. Since 2002, just under 3,000 Lithuanian troops have served in Afghanistan.

Lithuania's notable contribution in Afghanistan was divided between its special operations mission alongside U.S. and Latvian special forces and its command of a Provisional Reconstruction Team (PRT) in Ghor Province, making Lithuania one of only a handful of NATO members to have commanded a PRT. Although Lithuania does not meet the NATO goal of 2 percent of GDP spent on defense, like Latvia, it has pledged to do so by 2020.

**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, in response to a perception at that time of a reduced threat from Russia and 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 2012—slightly earlier than the planned date of 2013—marking the end of 50 years of having U.S. combat soldiers in Baumholder, Germany. The deactivation of the 172nd BCT took place in October 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 also in NATO’s capabilities, 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, when necessary, would 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. According to General Breedlove, “Permanently stationed forces are a force multiplier that rotational deployments can never match.”

Today, only 65,000 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. In January 2015, the Department of Defense announced the outcome of its European Infrastructure Consolidation review, which will see the closure of 15 minor sites across Europe.55

The U.S. has three different types of military installations in the European Command’s (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. 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 Africa Command (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 that 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. Docking U.S. nuclear-powered submarines in Spain is problematic and bureaucratic, 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. 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 is headquartered in Wiesbaden, Germany. The core of USAREUR is formed around two BCTs 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 presence in Europe to become an important logistics hub in support of Central Command.

**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
The bulk of the U.S. military presence in Europe remains concentrated in Germany and the U.K. United States bases in Europe help to provide tangible reassurance to NATO allies in Europe while also allowing the U.S. military to respond swiftly to threats emanating from the Middle East, Asia, and North Africa.
# U.S. Bases in Europe

<table>
<thead>
<tr>
<th>Host Country</th>
<th>Name</th>
<th>Military Branch</th>
<th>Closure Notes</th>
<th>Mission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>Marine Corps Prepositioning, Trendheim</td>
<td>Other</td>
<td></td>
<td>Provides forward-deployed equipment and supplies</td>
</tr>
<tr>
<td>U.K.</td>
<td>RAF Croughton</td>
<td>Air Force</td>
<td></td>
<td>501st Combat Support Wing (communications, information weapons)</td>
</tr>
<tr>
<td>U.K.</td>
<td>RAF Lakenheath</td>
<td>Air Force</td>
<td></td>
<td>Combat fighter wing provides air power, support, and services</td>
</tr>
<tr>
<td>U.K.</td>
<td>RAF Mildenhall</td>
<td>Air Force</td>
<td>CA</td>
<td>Air refueling, combat support, and expeditionary forces</td>
</tr>
<tr>
<td>U.K.</td>
<td>RAF Alconbury</td>
<td>Air Force</td>
<td>CA</td>
<td>Sustains, trains, and equips U.K.-based air groups</td>
</tr>
<tr>
<td>U.K.</td>
<td>RAF Molesworth</td>
<td>Air Force</td>
<td>CA</td>
<td>Supports key NATO intelligence and information-sharing functions</td>
</tr>
<tr>
<td>Belgium</td>
<td>Benelux</td>
<td>Army</td>
<td>CA</td>
<td>Provides base operations support and quality of life services</td>
</tr>
<tr>
<td>Belgium</td>
<td>Brussels</td>
<td>Army</td>
<td>CA</td>
<td>Army base operations and community support</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Schinnen</td>
<td>Army</td>
<td>CA</td>
<td>Provides forward-deployed equipment and supplies</td>
</tr>
<tr>
<td>Germany</td>
<td>Spangdahlem Air Base</td>
<td>Air Force</td>
<td></td>
<td>52nd Fighter Wing and radar systems supporting NATO air control</td>
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<tr>
<td>Germany</td>
<td>Baumholder</td>
<td>Army</td>
<td></td>
<td>Supports deployment, redeployment, and force-protection operations</td>
</tr>
<tr>
<td>Germany</td>
<td>Kaiserslautern</td>
<td>Army</td>
<td>PC</td>
<td>21st Theater Sustainment Command and supports joint missile defense</td>
</tr>
<tr>
<td>Germany</td>
<td>Ramstein Air Base</td>
<td>Air Force</td>
<td></td>
<td>86th Airlift Wing (combat airlift and aeromedical evacuation support)</td>
</tr>
<tr>
<td>Germany</td>
<td>Landstuhl Regional Medical Center</td>
<td>Other</td>
<td>CA</td>
<td>Medical care to military members, family members, and veterans</td>
</tr>
<tr>
<td>Germany</td>
<td>Wiesbaden</td>
<td>Army</td>
<td>PC</td>
<td>Installation capabilities and services support for expeditionary operations</td>
</tr>
<tr>
<td>Germany</td>
<td>Schweinfurt</td>
<td>Army</td>
<td>X</td>
<td>2nd Cavalry Regiment and rotational unit readiness/training facility</td>
</tr>
<tr>
<td>Germany</td>
<td>Bamberg</td>
<td>Army</td>
<td>X</td>
<td>2nd Cavalry Regiment and rotational unit readiness/training facility</td>
</tr>
<tr>
<td>Germany</td>
<td>Grafenwoehr</td>
<td>Army</td>
<td></td>
<td>Command, control, communications, and base operations</td>
</tr>
<tr>
<td>Germany</td>
<td>Baden-Württemberg</td>
<td>Army</td>
<td>X</td>
<td>12th Combat Aviation Brigade (full-spectrum combat aviation operations)</td>
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<tr>
<td>Germany</td>
<td>Stuttgart</td>
<td>Army</td>
<td>PC</td>
<td>Combat Maneuver Training Center (training in force-on-force exercises)</td>
</tr>
<tr>
<td>Germany</td>
<td>Ansbach</td>
<td>Army</td>
<td>PC</td>
<td>Marshall European Center for Security Studies and NATO School</td>
</tr>
<tr>
<td>Germany</td>
<td>Hohenfels</td>
<td>Army</td>
<td>PC</td>
<td>31st Fighter Wing (two F-16 squadrons and one air control squadron)</td>
</tr>
<tr>
<td>Germany</td>
<td>Garmisch</td>
<td>Army</td>
<td>PC</td>
<td>Headquarters of USAFRICOM and 173rd Airborne Brigade</td>
</tr>
<tr>
<td>Italy</td>
<td>Aviano Air Base</td>
<td>Air Force</td>
<td></td>
<td>Logistical support for combat deployments</td>
</tr>
<tr>
<td>Italy</td>
<td>Vicenza</td>
<td>Army</td>
<td></td>
<td>Support U.S. and NATO naval activities</td>
</tr>
<tr>
<td>Italy</td>
<td>Livorno</td>
<td>Navy</td>
<td>PC</td>
<td>Routing point for military personnel and cargo-rotational support</td>
</tr>
<tr>
<td>Portugal</td>
<td>Lajes Field (Azores)</td>
<td>Air Force</td>
<td></td>
<td>65th Air Base Wing (transit support for aviation assets)</td>
</tr>
<tr>
<td>Spain</td>
<td>Rota Naval Station</td>
<td>Navy</td>
<td></td>
<td>Air Force Mobility command and supports 6th Fleet</td>
</tr>
<tr>
<td>Greece</td>
<td>U.S. Naval Support Activity, Souda Bay</td>
<td>Navy</td>
<td></td>
<td>Logistical support and services for U.S. and allied ships and aircraft</td>
</tr>
<tr>
<td>Romania</td>
<td>Mihail Kogălniceanu Airbase</td>
<td>Other</td>
<td></td>
<td>Provides staging and transit for rotational support</td>
</tr>
<tr>
<td>Turkey</td>
<td>Incirlik Air Base</td>
<td>Air Force</td>
<td></td>
<td>39th Air Base Wing (provides global reach and regional stability)</td>
</tr>
<tr>
<td>Turkey</td>
<td>U.S. X-band radar missile defense, Kureck</td>
<td>Other</td>
<td></td>
<td>Provides advanced tracking to assist in interception and defense</td>
</tr>
</tbody>
</table>

*Source: Heritage Foundation research.*
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 seven main operating bases along with 114 geographically separated locations.65 The main operating bases are the RAF bases at Lakenheath and Mildenhall 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. As part of the European Infrastructure Consolidation process, RAF Mildenhall, which houses KC-135 Stratotankers and 3,900 American military personnel, is expected to close in the next few years. By 2020, RAF Lakenheath will be the home of two squadrons of F-35s, making it the first location in Europe for the USAF’s new fighter jets.66 Approximately 39,000 active-duty, reserve, and civilian personnel are assigned to USAFE.67

**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 assigned to support EUCOM, NATO, and other operations, such as Operation Enduring Freedom.68 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 prepositioned stock. The Marine Corps has enough prepositioned 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 prepositioned storage. The prepositioned stock’s proximity to the Arctic region makes it of particular geopolitical importance.

Crucially, MARFOREUR provides the U.S. with rapid reaction capability to protect U.S. embassies in North Africa. The Special-Purpose Marine Air Ground Task Force-Crisis Response-Africa (SPMAGTF) is currently located in Spain, Italy, and Romania and provides a response force of 1,550 Marines.69 Spain recently agreed to allow the U.S. Marine Corps to station up to 3,000 Marines permanently at Morón Air Base.60 This has been particularly important since the tragic events of September 2013 when the U.S. ambassador to Libya and three others were killed in Benghazi and due to the rise of the Islamic State terrorists in North Africa.

**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; since June 2014, it has maintained an almost continuous presence in the Baltic States and Poland in order to train special operations forces in those countries.61

EUCOM has played an important role in supporting other combatant commands, such as CENTCOM and AFRICOM. Out of the 65,000 U.S. troops based in Europe, almost 10,000 are there to support other combatant commands. The facilities available in EUCOM allowed the U.S. to play a leading role in combating Ebola in western Africa during the 2014 outbreak.

In addition to CENTCOM and AFRICOM, U.S. troops in Europe have 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.

In the past year, there have been significant advancements in improving cyber security in Europe. EUCOM’s first Cyber Combat Mission Team (CMT) and Cyber Protection Team (CPT) recently reached initial operational capability. These teams will provide the U.S. with new capabilities to protect systems, information, and infrastructure. EUCOM has also 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 allies Georgia and Ukraine 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. 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—a fact that 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. As the 2014 NATO Wales Summit Declaration stated:

Deterrence, based on an appropriate mix of nuclear, conventional, and missile defence capabilities, remains a core element of our overall strategy. As long as nuclear weapons exist, NATO will remain a nuclear alliance. The strategic nuclear forces of the Alliance, particularly those of the United States, are the supreme guarantee of the security of the Allies. The independent strategic nuclear forces of the United Kingdom and France have a deterrent role of their own and contribute to the overall deterrence and security of the Alliance.

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 supported TRANSCOM with work on the Northern Distribution Network (NDN), which supplied U.S. troops in Afghanistan during major combat operations there. For example, 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. 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 systems that involve moving large numbers of matériel 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.

More often than not, the security interests of the United States will coincide with those of its European allies. This means that access to bases and logistical infrastructure is usually guaranteed. However, there have been times when certain European
countries have not allowed 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.66

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 of 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 move it all back rapidly 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 European region. In fact, the world’s busiest shipping lane is the English Channel, through which 500 ships a day transit, 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 Bosporus); 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 approximately eight miles wide at its narrowest point. More than 200 cargo vessels pass through the Strait of Gibraltar every day, carrying cargoes to Asia, Europe, Africa, and the Americas.

The Strait’s proximity to North Africa, combined with its narrowness, 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. A 2014 article in the al-Qaeda English-language publication *Resurgence* urged attacks in oil tankers and cargo ships crossing the Strait of Gibraltar as a way to cause “phenomenal” damage to the world economy.67

**The Turkish Straits (including the Dardanelles and the Bosporus).** These straits are long and narrow—40 and 16 miles long, respectively, with the narrowest point in the Bosporus, 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.68

The 1936 Montreux Convention gave Turkey control of the Bosporus 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.69 This places limitations on U.S. Navy operation in the Black Sea. However, even with these limitations, the U.S. Navy had a presence on the Black Sea for 207 days in 2014.70

**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 lies far in the future. In 2013, only 71 ships made the journey.71

**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.72 Approximately 125,000 ships per year transit these straits.73

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, matériel, 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

Overall, the European region remains a stable, mature, and friendly operating environment. The main security and political challenges in the region derive from unfinished business in the Balkans or potential threats 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, increasingly utilizing economic, political, and diplomatic means in addition to military power to assert itself.

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. These threats have potential to spill over into Europe itself. If the U.S. needs to act in the European region or nearby, there is a history of interoperability with allies and access to key logistical infrastructure that makes the operating environment in Europe more favorable than the environment in 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. NATO is only as strong as its member states, and while some have taken steps to increase defense spending, the situation remains a source of concern, especially in light of U.S. defense cuts.

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 for military operations is 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 is characterized by adequate infrastructure, a moderate alliance structure, and acceptable levels of regional political stability. The U.S. military is adequately placed.

4. Favorable. A favorable 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. An extremely favorable operating environment includes well-established and -maintained infrastructure, strong capable allies, and a stable political environment. 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. Various indicators 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, prepositioned 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.74

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

### Operating Environment: Europe

<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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<tr>
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<tr>
<td>Infrastructure</td>
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<tr>
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<td>✔️</td>
</tr>
</tbody>
</table>
Middle East

The Middle East—strategically situated at the intersection of Europe, Asia, and Africa—has long been an important focus of U.S. foreign policy. U.S. security relationships in the region are built on pragmatism, shared security concerns, and economic interests, including large sales of U.S. arms to countries in the region seeking to defend themselves. The U.S. also maintains a long-term interest in the Middle East that is 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 Arabs, Jews, Kurds, Persians, and Turks, among others. The region also 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. The region contains many predominantly Muslim countries as well as the world’s only Jewish state.

The Middle East is deeply sectarian, and these long-standing divisions, exacerbated by religious extremists vying for power, are central to many of the challenges that the region faces today. In some cases, these sectarian divides go back centuries. Contemporary conflicts, however, have less to do with these histories than they do with modern extremist ideologies and the fact that modern-day borders often do not reflect the region’s cultural, ethnic, or religious realities. Today’s borders are often 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.

In a way not understood by many in the West, religion remains a prominent fact of daily life in the modern Middle East. At the heart of many of the region’s conflicts is the friction within Islam between Sunnis and Shias. This friction dates back to the death of the Prophet Muhammad in 632 AD. 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 viewing 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. The mutual distrust of many Arab/Sunni powers and the Persian/Shia power (Iran), compounded by clashing national and ideological interests, has fueled instability, including in Bahrain, Iraq, Lebanon, Syria, and Yemen. Sunni extremist organizations such as al-Qaeda and the Islamic State have exploited sectarian and ethnic tensions to gain support by posing as champions of Sunni Arabs against Iran, Syria’s Alawite-dominated regime, and other non-Sunni governments and movements.

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, and the lack of access to education, jobs, and meaningful political participation fuels discontent. Because more than 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.77

The Middle East contains more than half of the world’s oil reserves and is the world’s chief oil-exporting region. As the world’s biggest oil consumer, 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 Middle East.78 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 third largest economy) is the world’s largest liquefied natural gas (LNG) importer, and, on average, an LNG tanker enters Tokyo harbor every 20 hours. Qatar is the second largest supplier of LNG to Japan. In 2013, another U.S. ally in Asia—South Korea, the world’s 14th largest economy—depended on the Middle East for 87 percent of its imports of crude oil imports. 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 world’s busiest transcontinental trade routes. 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 region’s top financial center. Like the rest of the world, the Middle East was hit by the global financial crisis of 2008 and the subsequent recession, but many oil-exporting countries have made an economic recovery.

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, ranks 151st.
- Saudi Arabia has 265 billion barrels of proven oil reserves. It shares a nearly 500-mile border with Jordan, which has just 1 million barrels of proven oil reserves.
- According to the 2015 Index of Economic Freedom, published by The Heritage Foundation and The Wall Street Journal, Bahrain ranks 18th in the world in terms of economic freedom, while Iran ranks 171st.79

These disparities are worsened by government corruption across most of the region, which not only squanders economic and human resources, but also restricts economic competition and hinders the development of free enterprise.

The economic situation, in part, drives the Middle East’s political environment. The lack of economic freedom was an important factor leading to the Arab Spring uprisings, which have disrupted economic activity, depressed foreign and domestic investment, and slowed economic growth. This was the case when international investors started to shun Bahrain, rocked by the Arab Spring protests, for the stability of the UAE in 2011.80

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 formed a regional sandstorm that 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 did not usher 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, they boosted political instability, exacerbated economic problems, and contributed to the rise of Islamist extremists.

There is no shortage of security challenges for the U.S. and its allies in this region. Iran has exacerbated Shia–Sunni tensions to increase its influence over embattled regimes and undermine adversaries in Sunni-led states. Tehran attempts to run an unconventional empire by exerting great influence over sub-state entities like Hamas (Palestinian territories); Hezbollah (Lebanon); the Mahdi movement (Iraq); and the Houthi insurgents (Yemen). In Afghanistan, Tehran exerts influence over some
Iraqi security forces from areas populated predominantly 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. It continues to pose threats to Israel and to Arab states and replace it with an Islamic state.

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 220,000 people and displaced about 3.9 million refugees in neighboring Turkey, Lebanon, Jordan, and Iraq. More than 6.5 million people “are internally displaced within Syria.” The destabilizing spillover effects of this civil war include the creation of large refugee populations that could become a reservoir of potential recruits for extremist groups. In Jordan, where King Abdullah’s regime has been buffeted by Arab Spring protests and adverse economic trends, Syrian refugees now account for more than 10 percent of the population. 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 before that as al-Qaeda in Iraq, have carved out extensive sanctuaries where they are able 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 late 2013, the IS exploited the Shia-dominated 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, Kurds, Turkmen, and Yazidis. In early 2015, Iraqi Security Forces launched an offensive to seize the strategic town of Tikrit from IS, with Iranian and Shiite militia support at the onset and U.S. air support in the final stages of the operation.

The May 2015 seizure of the city of Ramadi by the IS prompted the Obama Administration to dispatch another 450 U.S. troops to act as trainers and advisers to Iraqi security forces on top of the 3,100 military advisers already deployed to Iraq. A U.S.-led air campaign against the IS by a coalition that included Iraq, the United Kingdom, France, Canada, Australia, Belgium, and the Netherlands attacked targets in Iraq, Saudi Arabia, Jordan, Bahrain, and the UAE also joined the United States in attacking IS targets in Syria. Despite some local setbacks inflicted on the IS by ground forces deployed by Iraq and the Kurdish Regional Government, the IS has demonstrated a persistent ability to mount surprise attacks and limited ground offensives, in part due to a steady influx of foreign fighters that has bolstered its strength.

Arab–Israeli tensions are another source of instability in the Middle East region. The repeated breakdown of Israeli–Palestinian peace negotiations and the rise 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 replace it with an Islamic state.

Although elected to power with only 44 percent of the vote in the 2006 elections, Hamas has since forced its radical agenda on the people of Gaza. This has led in turn to diminished public support and 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, achieving a sustainable Israeli–Palestinian peace agreement appears impossible.85

Important Alliances and Bilateral Relations in the Middle East

The U.S. has strong military, security, intelligence, and diplomatic ties with several Middle Eastern nations, including Israel, Egypt, Jordan, and the members of the Gulf Cooperation Council (GCC).86 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 similarly strong collective security organization. Middle Eastern countries traditionally have preferred to maintain bilateral relationships with the U.S. and generally 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 the past year, U.S. Central Command (USCENTCOM) conducted 45 multilateral and bilateral training exercises with many of these allies and partners.87 The main motivation behind these exercises is to ensure close and effective coordination with key partners in the region, to demonstrate an enduring U.S. security commitment to regional allies, and to train Arab armed forces so they can take a larger share of responsibility for regional security. The results have been mixed.

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 commanding the task force on two separate occasions.88 Jordan hosted the Eager Lion 14 training exercise, which included 4,000 military personnel from 14 Arab countries and 4,500 U.S. military personnel.89 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.

In addition to military training, U.S. defense relations are underpinned by huge defense equipment deals. U.S. military hardware (and, to a lesser extent, British and French hardware) is preferred across the region because of its effectiveness and symbolic value as a sign of a close security relationship, and much of it has been combat tested. 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 U.S.-built Terminal High Altitude Area Defense system. In 2010, the U.S. signed a $60 billion armaments deal—its biggest ever—with Saudi Arabia.90 The use of U.S.-made hardware helps with interoperability and lays the foundation for longer-term engagement and cooperation in the region.

A major source of strain in the relationship between the U.S. and its partners in the Middle East is the question of how best to halt Iran’s nuclear program. There is an understandable 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.91 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 accommodation with Iran.

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)92 because of its close ties to the U.S. With support from the United States, Israel has developed one of the world’s most sophisticated air and missile defense networks.93 No significant progress on peace negotiations with the Palestinians or on stabilizing Israel’s volatile neighborhood is possible without a strong and effective Israeli–American partnership.94

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 has been a key partner in efforts to contain Iran, safeguard the security of its GCC allies, remove Syria’s Assad regime from power, and stabilize Egypt and Yemen. Saudi Arabia also has played a growing role in countering 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 closely in combating al-Qaeda. After the death of King Abdullah, his half-brother, Crown Prince Salman, ascended to the throne in late January 2015 and immediately began to pursue a more aggressive foreign policy by leading a coalition of Arab states to intervene in Yemen’s civil war after Yemen’s government was ousted by Houthi rebels in early 2015.

**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. 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 long-standing sectarian tensions between Shia and Sunni Islam. Tehran has sought to radicalize Shia Arab minority groups to undermine Sunni Arab regimes in Saudi Arabia, Kuwait, Lebanon, Libya, and Yemen. It also sought to incite revolts by the Shia majorities in Saddam Hussein’s Iraq and in Bahrain, a majority-Shia country 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. Long-standing Iranian territorial claims in the Gulf add to the Arab–Persian tensions in the region. 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 (also claimed by the UAE) near the Strait of Hormuz.

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 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 less of a threat and maintain good relations with Tehran. Kuwait tends to fall somewhere in the middle. Inter-GCC relations also can be problematic. The UAE, Bahrain, and Saudi Arabia have been at loggerheads with Qatar regarding its support for the Muslim Brotherhood, which they see as a threat to internal security.

Apart from Bahrain, the GCC countries have weathered the political turbulence of the Arab Spring relatively well. Many of their citizens enjoy a high standard of living (made possible by millions of foreign workers and the export of oil and gas), which makes it easier for them to tolerate authoritarian rule. Of the six GCC states, Bahrain fared the worst 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 problematic since 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 the 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 was elected president in 2014. The new government faces major political, economic, and security challenges. Egypt’s limping economy has been badly damaged by four years of political turbulence and violence that has reduced 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 demonstrated its displeasure by buying Russian arms financed by Saudi Arabia in late 2013, but bilateral relations with the U.S. improved after Egypt’s military made good on its promises to hold elections. In April 2015, the Obama Administration released the hold on the annual $1.3 billion in military aid to Egypt and promised to continue future requests to Congress for aid.

Lebanon and Yemen. The United States has developed cooperative defense arrangements with 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), which has found itself increasingly challenged by Sunni Islamist extremist groups, including the Islamic State, in addition to the long-term threat posed by Hezbollah.

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 affiliates.

The overall political and security situation in Yemen deteriorated further in 2014–2015. In January 2015, the Houthis, a militant Shiite group based in northern Yemen, overran the capital city of Sanaa and forced the internationally recognized government led by President Abd Rabbu Mansour Hadi to resign. The Houthis solidified their control throughout the north and west of Yemen, and President Hadi fled to Riyadh. Saudi Arabia formed a coalition of 10 Sunni countries and led an air campaign against Houthi forces that began in March 2015.

The Yemeni conflict has become a proxy war between Saudi Arabia and Iran. Riyadh supports the Yemeni government, and Iran has provided money, arms, and training to the Houthi rebels, who belong to the Zaidi sect of Shia Islam. The unstable political situation in Yemen caused the United States to evacuate its embassy and withdraw its special operations forces, severely undermining U.S. counterterrorism and intelligence capabilities in Yemen. The growing chaos enabled AQAP to expand its presence, particularly in eastern Yemen.

Quality of Armed Forces in the Middle East

The quality and capabilities of the armed forces in the region are mixed. Some countries spend billions of dollars each year on advanced Western military hardware, and others spend very little. Defense spending in the Middle East overall increased by 5.2 percent in 2014 to an estimated $196 billion. Both Iraq’s and Lebanon’s defense spending increased by 15 percent, and Saudi expenditure increased by 17 percent. In 2014, Saudi military expenditure was $80.8 billion, amounting to 10.4 percent of overall GDP, one of the highest percentages in the world. Historically, defense spending figures for the Middle East have been very uncertain, but the lack of data has worsened; in 2014, there were no available data for Iran, Qatar, Kuwait, and Syria, according to a report by the Stockholm International Peace Research Institute.

Different security factors drive the degree to which Middle Eastern countries fund, train, and arm their militaries. For Israel, which defeated Arab coalitions in wars in 1948, 1956, 1967, 1973, and 1982, the chief potential threat to its existence is now posed by an Iranian regime that has called for Israel to be “wiped from the map.” As a result of Israel’s military dominance, states and non-state actors in the region have invested in asymmetric and unconventional capabilities to offset Israel’s military superiority. For the Gulf states, the main driver is the Iranian military threat combined with internal security challenges. For Iraq, the internal threat posed by insurgents and terrorists 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. Other countries, such as Iran, have developed asymmetric tactics and have built up the military capabilities of proxy groups to close the gap in recent years, but the IDF’s quality and effectiveness remain unparalleled with regard to both technical capacity and
personnel. This was demonstrated by Israel's 2014 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 superiority in missile defense, intelligence collection, precision weapons, and cyber technologies. The Israelis regard their emerging cyber capabilities as especially important. 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. It also fields effective missile defense systems, including Iron Dome and Arrow, both of which the U.S. helped to finance.

Israel also 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 gap in conventional capabilities has been reduced.

After Israel, the most technologically advanced and best-equipped armed forces are found in the Gulf Cooperation Council. 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 that there is no shortage of political will to invest in defense. Most staff officers have been educated in the U.K. or the U.S. Generally speaking, these are the best-funded, although not necessarily the most effective, Arab armed forces in the region.

The GCC established a joint expeditionary force called the Peninsula Shield Force (PSF), which has had only modest operational success and 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 internal security. 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 standstill and threatened the monarchy. Internal divisions inside the GCC, especially among Qatar, UAE, and Saudi Arabia, have prevented the PSF from playing a more active role in the region.

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 of 75,000 soldiers and a National Guard of 100,000 personnel 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-built aircraft and consists of more than 300 combat-capable aircraft including F-15s, Tornados, and Typhoons. These were used with limited success in northern Yemen against Houthi rebels in 2009–2010 and again during Operation Decisive Storm, the Saudi-led air campaign launched in March 2015 against the Houthis as they advanced southward. Both Saudi Arabia and the UAE have 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-16s and has purchased 12 Typhoons, to be delivered in 2017. 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. Qatar operates French-made Mirage fighters. The latter two countries deployed fighters to participate in NATO-led operations over Libya in 2011 (although they did not participate in strike operations). Beginning in early fall 2014, all six GCC members joined the U.S.-led anti-ISIS coalition, with the UAE contributing the most in terms of air power. 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.

Even with the billions of dollars invested each year by members of the GCC, most see security ties with the United States as crucial for their security. As former U.S. Defense Secretary Robert Gates once noted, the Saudis will “fight the Iranians to the last American.”

Egypt's military is the largest force in the Middle East at about 450,000 total personnel. It possesses a fully operational military with an army, air force, air defense, navy, and special operations
forces. Until 1979, when the U.S. began to supply Egypt with military equipment, Cairo relied primarily on less capable Soviet military technology. 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. Additionally, Egypt boasts substantial manpower, but its quality is limited by conscription and an absence of recent combat experience.

The most visible expression of U.S. influence in Cairo is military aid, which was withheld in some areas after the 2013 military coup. This indefinite hold applied to Apache attack helicopters, F-16s, Harpoon ship-to-ship missile systems, and M1A1 tank kits. Since Egypt relies upon U.S. assistance to combat Islamist militants and terrorists, the ability of the military to contain Islamist threats was undermined. 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, but after President Obama lifted the hold on U.S. military aid to Egypt in March 2015, Egypt was slated to receive 12 Lockheed Martin F-16 aircraft, 20 Boeing Harpoon missiles, and up to 125 M1A1 Abrams tanks.

Jordan is a close U.S. ally with small but effective military forces. The force drivers for the Jordanian military are the spillovers from fighting in Syria and Iraq. While it faces few conventional threats from its neighbors, Jordan’s internal security is threatened by Islamist extremists returning from fighting in the region who have been emboldened by the growing influence of al-Qaeda and other Islamist militants. As a result, Jordan’s highly professional armed forces have been focused in recent years on border and internal security. Even so, Jordan’s conventional capability is significant considering its size.

Jordan’s land forces total 75,000 soldiers and include 390 British-made Challenger 1 tanks. The backbone of its air force is the F-16. Jordan’s special operations forces are very capable, having benefited from extensive U.S. and U.K. training. Jordanian forces have served in Afghanistan and in numerous U.N.-led peacekeeping operations. Jordan became more deeply involved in coalition air operations against the IS in February 2015 when the extremist group burned alive a Jordanian pilot who was captured in December 2014 after his plane crashed in Syria during a mission. Since then, Jordan has stepped up its air strikes in Syria.

Iraq has fielded one of the region’s most dysfunctional military forces. After the 2011 withdrawal of U.S. troops, Iraq’s government selected and promoted military leaders according to political criteria. Shiite army officers were favored over their Sunni, Christian, and Kurdish counterparts. Then-Prime Minister Maliki chose top officers according to their political loyalties. The politicization of the armed forces also exacerbated corruption within many units, with some commanders siphoning off funds allocated for “ghost soldiers” who never existed or had been separated from the army for various reasons.

The promotion of incompetent military leaders, poor logistical support due to corruption and other problems, limited operational mobility, and weaknesses in intelligence, reconnaissance, medical support, and air force capabilities all have combined to weaken the effectiveness of the Iraqi armed forces. In June 2014, up to four divisions collapsed and were routed in the face of vastly smaller numbers of Islamic State fighters. Although the Iraqi army, backed by U.S. air support, Kurdish militias, and Shiite militias backed by Iran, has recovered some territory lost to the IS, it remains a work in progress that requires further reforms, training and support.

Current U.S. Military Presence in the Middle East

The United States maintained a limited 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 prerevolutionary Iran and Saudi Arabia to take the lead in defending the Persian Gulf from the Soviet Union and its client regimes in Iraq, Syria, and South Yemen, but the 1979 Iranian revolution demolished one pillar, and the December 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, established in January 1983.

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 marked the peak U.S. force deployment in the Middle East.

Confrontations with Iraq continued throughout the 1990s due to Iraqi violations of the 1991 Gulf War cease-fire. Baghdad’s failure to cooperate with U.N. arms inspectors to verify the destruction of its weapons of mass destruction and its links to 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 George W. Bush deployed an additional 30,000 troops, 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.

Since 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, approximately 35,000 U.S. military personnel were operating in the Middle East. Their exact disposition is not made public because of political sensitivities in the region, but information gleaned from open sources shows the following:

- **Kuwait.** Approximately 15,000 U.S. troops are 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, about 5,000 U.S. troops, mainly Air Force personnel, are stationed at Al Dhafra Air Base. The main mission for U.S. military personnel in the UAE is to operate refueling and surveillance aircraft. The United States also has regularly deployed 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 oldest U.S. military presence in the Middle East is found in Bahrain. 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 most U.S. military personnel there belong to the U.S. Navy. In addition, a significant number of U.S. Air Force personnel operate out of Shaikh Isa Air Base, where F-16s, F/A-18s, and P-3 surveillance aircraft are stationed. 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 forces 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 Office of the Program Manager–Facilities Security Force, are based in Eskan Village Air Base, approximately 13 miles south of the capital city of Riyadh.

- **Qatar.** 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. air bases in the world. Al Udeid Air Base also serves as the forward headquarters of CENTCOM. In addition, the base houses significant prepositioned U.S. military equipment.

- **Jordan.** Although there are no 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 deployed in Jordan.
- **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 June 2015, approximately 3,000 U.S. troops were committed to train, support, and advise Iraqi security forces, with another 450 more military trainers earmarked for deployment later in the year. In February 2015, the U.S. reportedly moved combat search-and-rescue teams to northern Iraq to support possible rescue missions in Syria.

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 unmanned aerial vehicle (UAV) base in Saudi Arabia from which drone attacks against militants in Yemen are launched. There also are reports of an American base on Socotra Island, which is off the coast of Somalia and belongs to Yemen, being used for counterterrorism operations off the Horn of Africa and Yemen.

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 2015 CENTCOM posture statement submitted to Congress, the 10 focus areas are:

- Degrade and ultimately defeat ISIL in order to prevent the further spread of sectarian-fueled radical extremism, and to mitigate the continuing Iraq–Syria crisis.
- Continue support to Afghanistan, in partnership with NATO, as a regionally integrated, secure, stable, and developing country.
- Defeat Al Qaeda, deny violent extremists safe havens and freedom of movement, and limit the reach of terrorists.
- Counter malign Iranian influence, while reducing and mitigating against the negative impacts of surrogates and proxies.
- Support a whole of government approach to developments in Yemen, preventing Yemen from becoming an ungoverned space for AQ/VEOs; retain CT capacity in the region.
- Maintain credible general and specific deterrent capability and capacity to counter Iran.
- Prevent, and if required, counter the proliferation of weapons of mass destruction; disrupt their development and prevent their use.
- Protect lines of communication, ensure free use of the shared spaces (including the cyber commons), and secure unimpeded global access for legal commerce.
- Shape, support, and maintain ready, flexible regional Coalitions and partners, as well as cross-CCMD [combatant command] and interagency U.S. whole-of-government teams, to support crisis response; optimize military resources.
- Develop and execute security cooperation programs, improving bilateral and multi-lateral partnerships, building partnered “capacities,” and improving information sharing, security, and stability.

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. With its forward headquarters 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 (1.5 times larger than the continental U.S.).

**U.S. Air Forces Central Command.**  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 prepositioning program at several regional sites.

**U.S. Marine Forces Central Command.**  USMARCENT is the designated 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 USCENTCOM unified command. 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, two 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 British imperial rule. The U.K. has maintained close ties with many countries over which it once ruled and has conducted military operations in the region for decades. Approximately 1,200 British service personnel are based throughout the Gulf. The British presence in the region is dominated by the Royal Navy. In terms of permanently based naval assets, 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, U.K. attack submarines also operate in the area. As a sign of its long-term maritime presence in the region, the U.K. recently broke ground on an $11 million new headquarters for its Maritime Component Command at Bahrain’s Salman Naval Base.152

The U.K. also has a sizeable Royal Air Force (RAF) 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 forces deployed in the region and to provide logistical support to RAF assets visiting the region.153 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 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. A British-run staff college recently opened in Qatar, and Kuwait recently chose the U.K. to help run its own equivalent of the Royal Military Academy at Sandhurst.154 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 is 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.155 In total, the French have 700 troops based in the country along with six Rafale jets.156 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 lives within an eight-hour flight from the Gulf region, making it accessible from most of the globe. The Middle East also contains some of the world’s most critical maritime choke points, such as the Suez Canal and the Strait of Hormuz.

While infrastructure is not as developed in the Middle East as it is 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 matériel 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 servicemembers and 505 bases. Moving troops and equipment out of the country was
The Strait of Hormuz is a critical oil-supply bottleneck and 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, “about 30% of all seaborne-trade

The Suez Canal. In 2014, 962.7 million tons of cargo transited the canal, averaging 47 ships each day. Considering that 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 2014, the canal saw an increase of 18.9 percent in terms of “Southbound Oil & Products” traffic from the prior year. The canal also serves as an important strategic asset, as it is routinely used by the U.S. Navy to move 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.

The Strait of Hormuz. The Strait of Hormuz is a critical oil-supply bottleneck and 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, “about 30% of all seaborne-trade

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; Isa, Bahrain; Eskan 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 Baghdad International Airport and Balad Air Base, as well as Prince Sultan Air Base in Saudi Arabia. Just because the U.S. has access to a particular air base today does not mean that it will be made available for a particular operation in the future. For example, it 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 access to ports in the region, perhaps most importantly in Bahrain. As of April 2014, the Naval Support Activity Bahrain has continued a $260 million expansion project, which would enable the homeporting of littoral combat ships by 2018 in one of the world’s busiest waterways. The U.S. also has access to a deep-water port, Khalifa bin Salman, in Bahrain and naval facilities at Fujairah, UAE. UAE’s commercial port of Jebel Ali is open for visits from U.S. warships and prepositioning 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. Given 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:

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oil,” pass through the strait for an annual total of more than 6 billion barrels of oil. Most of these crude oil exports go to Asian markets, particularly Japan, India, South Korea, and China.\footnote{171}

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 oil prices, Iran would also lose, both because it depends on the Strait of Hormuz to export its own crude oil and because it would undermine Tehran’s relations with such oil importers 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. Oil tankers transport approximately 3.8 million barrels of oil per day through the strait.\footnote{172} The Bab el-Mandeb Strait is 18 miles wide at its narrowest point, limiting passage to two channels for inbound and outbound shipments.\footnote{173}

Over the past decade, piracy off the coast of Somalia has 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 global piracy report. Pirate activity, however, continues to threaten international trade and the safety of the international commons.\footnote{174}

**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 countries like Iraq, Libya, Syria, and Yemen, 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. These challenges are made more difficult by the Arab–Israeli conflict, Sunni–Shia sectarian divides, the rise of Iran’s Islamist revolutionary nationalism, and the proliferation of Sunni Islamist revolutionary groups.

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 for maintaining a large force forward deployed thousands of miles away from the homeland are well in place. Unlike in Europe, all of these processes have recently been 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 some of the region’s future leaders.

America’s relationships in the region are pragmatically based on 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 for military operations is 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 is characterized by adequate infrastructure, a moderate alliance structure, and acceptable levels of regional political stability. The U.S. military is adequately placed.

4. **Favorable.** A favorable 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.** An extremely favorable operating environment includes well-established and -maintained infrastructure, strong capable allies, and a stable political environment. 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. Various indicators 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, prepositioned 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. With this in mind, we arrived at these average scores for the Middle East (rounded to the nearest whole number):

- **Alliances:** 3.66 (4) — **Favorable**
- **Political Stability:** 1.66 (2) — **Unfavorable**
- **U.S. Military Positioning:** 3.33 (3) — **Moderate**
- **Infrastructure:** 3.33 (3) — **Moderate**

Leading to a regional score of: **Moderate**
## 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 1784. In the subsequent more than 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 U.S. Secretary of State 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 in Asia or the Soviet Union in Europe.

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, but 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 (China, North Korea, India, Pakistan, and Russia) possess nuclear weapons.

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 four states divided between Communism and democracy by the Cold War, three (China, Korea, and Vietnam) were in Asia. 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 long-standing—and still lingering—historical animosities. Asia is home to several major border disputes, among them:

- 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);

Kashmir (India and Pakistan); and

Aksai Chin and parts of the Indian state of Arunachal Pradesh (India and China).

Even 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, different names are applied to the various major bodies of water, such as “East Sea” or “Sea of Japan” and “Yellow Sea” or “West Sea.”

These disputes over names also are indicative of the broader tensions rooted in historical animosities—enmities that still 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. 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. Despite substantial trade and expanding value chains among the various Asian states, as well as with the rest of the world, formal economic integration is limited. There is no counterpart to the European Union or even to 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. Less important to regional stability has been the South Asia Association of Regional Cooperation (SAARC), which includes Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. The SAARC is largely ineffective, both because of the lack of regional economic integration and because of the historical rivalry between India and Pakistan. 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 to 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 United Kingdom, 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 to maintain 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. These alliances are supplemented by very close security relationships with New Zealand, Afghanistan, Pakistan, and Singapore and evolving relationships with other nations in the region like India, Vietnam, Malaysia, and Indonesia. The U.S. also has a robust unofficial relationship with Taiwan.

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 data links. Consequently, in the 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 centerpieces of the American network of relations in the Western Pacific. The U.S.–Japan Treaty of Mutual Cooperation and Security, signed 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 9 of its constitution. This article states in part that “the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as 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.

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 that are 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 costs cannot be amortized across a larger export base.

As a result of these decisions, Tokyo relies heavily on the United States for its security. In particular, it depends 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) has 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*); a 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 provides 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, and 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. As revised in April 2015, the guidelines expand both the
geographic scope and the nature of Japan’s security contributions to include operations “involving the use of force to respond to situations where an armed attack against a foreign country that is in a close relationship with Japan occurs.”\textsuperscript{182} The revisions make Japan a fuller partner in the alliance.

At least since the 1990 Gulf War, the United States has sought to obtain expanded Japanese participation in international security affairs. This effort had 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. (Changes in alliance guidelines agreed to between the U.S. and Japan are based on a less restrictive interpretation of collective self-defense that requires action on enabling legislation in Tokyo.) 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 the Yasukuni Shrine.

These issues have been sufficient to torpedo efforts to improve 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.\textsuperscript{183} In December 2014, the U.S., South Korea, and Japan signed a minimalist military data-sharing agreement, limited only to information on the North Korean military threat and requiring both allies to pass information through the United States military. 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 self-defense” situations, as well as a loosening of 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, and the potential for interaction with foreign military forces. It also provides for the possibility of Japanese assistance to friendly nations that are under attack.\textsuperscript{184} 

**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 that includes 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 centered mainly on the U.S. 2nd Infantry Division and 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) established in 1950 was the basis for the American intervention, and it remained in place after the armistice was signed in 1953. UNC has access to a number of bases in Japan in order to support U.N. forces in Korea. In concrete terms, however, it 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, 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, as agreed with the U.S., began the process of transferring wartime operational control 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), Washington and Seoul agreed in late 2014 to postpone wartime OPCON transfer.\textsuperscript{185}

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, the Iraq War, and Afghanistan, 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, 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).

Washington has agreed to maintain 28,500 troops in the ROK. These forces regularly engage in major exercises with their ROK counterparts, 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, logistics, and improvements in facilities.\textsuperscript{186}

**The Philippines.** America’s oldest defense relationship in Asia is with the Philippines. The United States seized the Philippines from the Spanish over a century ago as a result of the Spanish–American War. But the U.S., unlike other colonial states, also 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. Following 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.

These 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, compelling 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 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). The U.S. government also provided military aid and assistance, both of which increased after 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 counterterrorism operations, and another 6,500 participate in combined exercises with Philippine troops.\textsuperscript{187}

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.\textsuperscript{188} 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 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 to help it modernize. This 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 long-standing difference between the U.S. and the 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 on the 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 Thanath–Rusk 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,” giving it 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 domestic unrest and several coups in Thailand. This strife has limited the extent of U.S.–Thai military cooperation, as U.S. law prohibits U.S. funding for many kinds of assistance to a foreign country in which a military coup deposes a duly elected head of government. 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 has also been drawing closer to the People’s Republic of China (PRC). This process has been underway since the end of the Vietnam War but 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 counterterrorism exercises, and since 2010, the two nations’ marines have also exercised jointly. 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 cooperated closely 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, the U.K., and Canada.194

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.195 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,196 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.197

Singapore. Although Singapore is not a security treaty ally of the United States, it is a key security partner in the region. In 2005, the close defense relationship was formalized with the Strategic Framework Agreement (SFA). The SFA “expanded the scope of cooperation in areas such as counterterrorism, counter-proliferation, joint military exercises and training, policy dialogues and defence technology.”198 It builds on the 1990 Memorandum of Understanding Regarding United States Use of Facilities in Singapore, as amended, which allows for U.S. access to Singaporean military facilities.199 The 2005 SFA is the first agreement of its kind since the end of the Cold War,200 thereby making Singapore America’s most critical non-treaty security ally in the Western Pacific.

New Zealand. For much of the Cold War, U.S. defense ties with New Zealand were similar to those between America and Australia. 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, but defense relations improved in the early 21st century 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 Chuck Hagel and New Zealand Defense Minister Jonathan Coleman announced the resumption of military-to-military cooperation.201

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 declared certain commitments concerning the security of Taiwan. These commitments are embodied in the Taiwan Relations Act (TRA) and the subsequent “Six Assurances.”

The TRA is an American law and not a treaty. Under the TRA, the United States maintains programs, transactions, and other relations with Taiwan, through the American Institute in Taiwan (AIT). 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 Jimmy Carter following the shift in recognition to the PRC.)

Under the TRA, it is the policy of the United States “to provide Taiwan with arms of a defensive character.” The TRA also states that the U.S. will “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.” The U.S. has implemented these provisions of the TRA through weapons sales to Taiwan.

The TRA 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.”202 It 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.”203
The TRA requires the President to inform Congress promptly 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.” The TRA then states: “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 Ronald 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 assurances of July 14, 1982, were:

In negotiating the third Joint Communique with the PRC, the United States:

1. has not agreed to set a date for ending arms sales to Taiwan;

2. has not agreed to hold prior consultations with the PRC on arms sales to Taiwan;

3. will not play any mediation role between Taipei and Beijing

4. has not agreed to revise the Taiwan Relations Act;

5. has not altered its position regarding sovereignty over Taiwan;

6. will not exert pressure on Taiwan to negotiate with the PRC. 204

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.

**Vietnam, Malaysia, and Indonesia.** The U.S. has security relationships with several key Southeast Asian countries, none of them as extensive and formal as its relationship with Singapore and its Asian treaty allies, but all still of growing significance. Since shortly after the normalization of diplomatic relations between the two countries in 1995, the U.S. and Vietnam have also normalized their defense relationship, albeit very slowly. The relationship was codified in 2011 with a Memorandum of Understanding “advancing bilateral defense cooperation” that covers five areas of operations, including maritime security.

The U.S. and Malaysia have maintained a “steady level” of defense cooperation since the 1990s, despite occasional political differences. 205 Today, they participate together in more than a dozen bilateral and multilateral exercises a year to “promote interoperability and cooperation.” 206

The U.S.–Indonesia defense relationship revived in 2005 following a period of estrangement over American human rights concerns. It now includes regular joint exercises, port calls, and sale of weaponry. The U.S. is also working closely with Indonesia’s defense establishment to institute reforms in Indonesia’s strategic defense planning processes.


In August 2003, NATO joined the war in Afghanistan and assumed control of the International Security Assistance Force (ISAF). At the height of the war in 2011, there were 50 troop-contributing nations and a total of nearly 150,000 NATO and U.S. forces on the ground in Afghanistan.

On December 28, 2014, NATO formally ended combat operations and handed responsibility to the Afghan security forces, currently numbering around 326,000 (including army and police). 207 After Afghan President Ashraf Ghani signed a bilateral security agreement with the U.S. and a Status of Forces Agreement with NATO, the international coalition launched Operation Resolute Support to train and
support Afghan security forces. As of June 2015, approximately 13,200 U.S. and NATO forces were stationed in Afghanistan. Most U.S. and NATO forces are stationed at bases in Kabul and Bagram, with tactical advise-and-assist teams located in Mazar-i-Sharif, Herat, Kandahar, Jalalabad, and Gamberi.

While President Obama last year pledged to cut U.S. force levels to around 5,500 by the end of 2015 and then to zero by the end of 2016, he recently announced that the U.S. would retain some 9,800 troops in Afghanistan through the end of 2015, although he remains committed to a complete withdrawal by the end of 2016.

**Pakistan.** During the war in Afghanistan, the U.S. and NATO relied heavily on logistical supply lines running through Pakistan to resupply coalition forces in Afghanistan. Supplies and fuel were carried on transportation routes from the port at Karachi to Afghan–Pakistani border crossing points at Torkham in the Khyber Pass and Chaman in Baluchistan province. During the initial years of the Afghan war, about 80 percent of U.S. and NATO supplies traveled through Pakistani territory. This amount decreased to around 50 percent–60 percent as the U.S. shifted to northern routes and when U.S.–Pakistan relations significantly deteriorated over U.S. drone strikes, continued Pakistani support to Taliban militants, and the fallout surrounding the U.S. raid on Osama bin Laden’s hideout in Abbottabad on May 2, 2011.

From October 2001 until December 2011, the U.S. leased Pakistan’s Shamsi airfield southwest of Quetta in Pakistan’s Baluchistan province and used it as a base from which to conduct surveillance and drone operations against terrorist targets in Pakistan’s tribal border areas. Pakistan ordered the U.S. to vacate the base shortly after NATO forces attacked Pakistani positions along the Afghanistan border, killing 24 Pakistani soldiers, on November 26, 2011. The U.S. escalated its drone strike campaign in Pakistan’s border areas from 2009–2012, leading to the significant degradation of al-Qaeda’s ability to plot, plan, and train for terrorist attacks. The U.S. began to curtail drone strikes in 2013, largely as a result of Pakistan’s growing complaints that the drone campaign infringed on its sovereignty and criticism from international human rights organizations about the number of civilian casualties resulting from the attacks. All told, there have been around 370 drone strikes since January 2008 and 24 reported strikes during 2014.208

The U.S. provides significant amounts of military aid to Pakistan and “reimbursements” in the form of coalition support funds (CSF) for Pakistan’s military deployments and operations along the border with Afghanistan. Pakistan has some 150,000 troops stationed in regions bordering Afghanistan and recently conducted a robust military campaign against Pakistani militants in North Waziristan. Since 2002, the U.S. has provided over $7 billion in security-related assistance and over $12 billion in CSF funds to Pakistan.209

**India.** During the Cold War, U.S.–Indian military cooperation was minimal, except for a brief period during the Sino–Indian border war in 1962 when the U.S. sided with India and supplied it with arms and ammunition. The rapprochement was short-lived, however, and mutual suspicion continued to mark the Indo–U.S. relationship due to India’s robust relationship with Russia and the U.S. provision of military aid to Pakistan, especially during the 1970s under the Nixon Administration. America’s ties with India hit a nadir during the 1971 Indo–Pakistani war when the U.S. deployed the aircraft carrier USS Enterprise toward the Bay of Bengal in a show of support for Pakistani forces.

Military ties between the U.S. and India have improved significantly over the past decade as the two sides have moved toward establishment of a strategic partnership based on their mutual concern over rising Chinese military and economic influence and converging interests in countering regional terrorism. The U.S. has supplied some $10 billion in military equipment to India including C-130J and C-17 transport aircraft and P-8 maritime surveillance aircraft.

Defense ties between the two countries are poised to expand further as India moves forward with an ambitious military modernization program and following two successful summit-level meetings between President Obama and Indian Prime Minister Narendra Modi in recent months. During President Obama’s January 2015 visit to India, the two sides agreed to renew and upgrade their 10-year Defense Framework Agreement, to co-produce UAVs and equipment for military transport aircraft, and to explore co-development of aircraft carrier and jet engine technology. New Delhi and Washington regularly hold joint exercises across all services, including an annual naval exercise in which Japan, Australia, and Singapore have also participated.
Quality of Allied Armed Forces in Asia

Because of the lack of an integrated, regional security architecture along the lines of NATO, 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 (e.g., Malaysia) have never fought an external war since gaining independence in the immediate aftermath of World War II. 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’s, South Korea’s, and Australia’s defense budgets are estimated to be among the 15 largest in the world. Each of their military forces field some of the world’s most advanced weapons, 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.

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, field more tanks (777), principal surface combatants (47), and fighter/ground attack aircraft (340) than their British opposite numbers (227, 18, and 230, respectively). Similarly, South Korea’s military fields a larger military of tanks, principal surface combatants, submarines, and fighter/ground attack aircraft (over 1,000, 28, 23, and 468, respectively) than their German counterparts (322, 19, four, and 209, respectively).

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. 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.

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 submarines (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, but 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 counterinsurgency campaigns while relying 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 world’s oldest serving warships.

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 that can effectively deter any potential adversaries.
PACOM’s area of responsibility 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 (China); the largest democracy (India); the largest Muslim-majority nation (Indonesia); and the smallest republic in the world (Nauru). 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 and five of its declared nuclear nations.\(^{216}\)

Under PACOM are a number of component commands, 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-52, B-1, and B-2 bombers.

- **U.S. Pacific Fleet.** PACFLT normally 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, ported 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. Its headquarters are in Hawaii. Because of its extensive responsibilities and physical span, MARFORPAC controls two-thirds of Marine Corps forces: the I Marine Expeditionary Force (MEF), centered on the 1st Marine Division, 3rd Marine Air Wing, and 1st Marine Logistics Group, and the III Marine Expeditionary Force, centered on the 3rd Marine Division, 1st Marine Air Wing, and 3rd Marine Logistics Group. The I MEF is headquartered at Camp Pendleton, California, 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, provides the Fleet Marine Forces to PACFLT, and 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 also support various operations in the region other than warfighting, such as counterdrug operations, counterterrorism training, humanitarian assistance, and de-mining 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.

**U.S. Central Command—Afghanistan.** Unlike the U.S. forces deployed in Japan and South Korea, there is not a permanent force structure committed to Afghanistan; instead, forces rotate through the theater under the direction of PACOM’s counterpart in that region of the world, U.S. Central Command (CENTCOM). As of February 2015, these forces included:

- Resolute Support Mission, including U.S. Forces Afghanistan.
- Special Operations Joint Task Force—Afghanistan. This included 3/3 Special Forces, out of Bagram Airfield, and additional allied special operations forces at Kabul.
- 9th Air and Space Expeditionary Task Force. This includes the 155th Air Expeditionary Wing, providing air support from Bagram airfield; the 152st Air Expeditionary Group and 455th Expeditionary Operations Group, operating from Kandahar and Bagram airfields, respectively, providing air support and surveillance operations over various parts of Afghanistan; and the 4th Expeditionary Fighter Squadron, providing close air support from Bagram airfield.
- Combined Joint Task Force 3/3rd Infantry Division, centered on Bagram airfield. This is the main U.S. national support element. It includes seven battalions of infantry, air defense artillery for counter-artillery missions, and explosive ordnance disposal across Afghanistan. It also includes three Army aviation battalions, a combat aviation brigade headquarters, and two additional joint task forces to provide nationwide surveillance support.
- Five Train, Advise, Assist Commands in Afghanistan, each of which is a multinational force tasked with improving local capabilities to conduct operations.

**Key Infrastructure That Enables Expeditionary Warfighting Capabilities**

Any planning for operations in the Pacific will be dominated by the “tyranny of distance.” Because of the extensive distances that must be traversed in order to deploy forces, 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, and 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, increase the operational risk for deployment of U.S. forces in the event of conflict. China’s capabilities not only jeopardize American combat forces that would flow into the theater for initial combat, but also 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 Indo-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 of America’s ability to support its position in the Western Pacific. If the United States cannot preserve its 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 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 even as China’s A2/AD capabilities have raised doubts about the ability to sustain operations in the Asian littoral. The concentration of air and naval assets as well as logistical infrastructure, however, makes the island an attractive potential target in the 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 not only to survive, but also to function will directly influence the course of any conflict in the Western Pacific region. Moreover, a variety of support functions, including communications, intelligence, and space support, 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 is therefore a matter both of political partnership and also of 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, and 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 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.** The United States also maintains an array of facilities in South Korea, 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 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. In 2014, however, with the growing Chinese assertiveness in the South China Sea, including against Philippine claims such as Mischief Reef and Scarborough Shoal, the U.S. and the Philippines negotiated the EDCA, 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, one of the few docks 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, and Singapore hosts two new Littoral Combat Ships (LCS) (with the option of hosting two more), as well as a rotating squadron of F-16 fighter aircraft.²¹⁹

**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 2,500 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.²²⁰ The Marines do not constitute a permanent presence in Australia, in keeping with Australian sensitivities about permanent American bases on Australian soil.²²¹ 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 Harold E. Holt Naval Communication Station in Western Australia, including the space surveillance radar system there.²²²

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 they do not maintain a permanent presence there. Additionally, the U.S. Navy conducts hundreds of port calls throughout the region.

**Diego Garcia.** Essential to U.S. operations in the Indian Ocean and Afghanistan and providing essential support to both the Middle East and East Asia are the American facilities on the British territory of Diego Garcia. The island is home to the 12 ships of Maritime Prepositioning Squadron (MPS)-2, which can support a Marine brigade and associated Navy elements for 30 days. There are also several elements of the U.S. global space surveillance and communications infrastructure on the island, as well as basing facilities for the B-2 bomber.

**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 long-standing American allies with relationships dating back to the beginning of the Cold War, as well as recently established states and some long-standing adversaries such as 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 of 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 supporting 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 is 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 is characterized by adequate infrastructure, a moderate alliance structure, and acceptable levels of regional political stability. The U.S. military is adequately placed.

4. Favorable. A favorable 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. An extremely favorable operating environment includes well-established and -maintained infrastructure, strong capable allies, and a stable political environment. 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. Various indicators 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 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, 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, prepositioned 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: 4.6 (5) – Excellent
- Political Stability: 3.1 (3) – Moderate
- U.S. Military Positioning: 3.9 (4) – Favorable
- Infrastructure: 3.6 (4) – Favorable

Aggregating to a regional score of: Favorable
### Operating Environment: Asia

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<th>VERY POOR</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: **FAVORABLE**

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The 2016 *Index of U.S. Military Strength* saw an overall improvement in the Global Operating Environment, with the score moving from “moderate” to “favorable.”

The overall improvement was driven largely by higher scores in the Asia Operating Environment score over last year, which led to its score going from “moderate” to “favorable.”
• Alliances improved from “favorable” to “excellent.”

• U.S. Military Positioning improved from “moderate” to “favorable.”

• Infrastructure improved from “moderate” to “favorable.”

The Middle East Operating Environment also contributed slightly to the overall improvement, with its Alliance score going from “moderate” to “favorable.” However, the Middle East Operating Environment remained “moderate.”

The Europe Operating Environment did not see categorical changes in any of its scores, remaining “favorable.”

Major factors that contributed to changes in the Operating Environment from the 2015 Index include America’s fortification of defense agreements with Japan, the Republic of Korea, and India; a recommitment to U.S. troop presence in the Republic of Korea; financial instability in Greece and questions about the viability of the eurozone; and an increased commitment to combatting ISIS by Arab nations and U.S. allies in the Middle East.
The four NATO members are the U.S., Canada, Norway, and Denmark (Greenland). The non-NATO Arctic sea power is Russia.

Jonathan Marcus, “Could Syriza Win Tilt Greece’s Foreign Policy Towards Russia?” BBC, January 28, 2015,

Anthony Falola, “The German Military Faces a Major Challenge from Disrepair,” The Washington Post, October 1, 2014,

ENDNOTES:
4. The four NATO members are the U.S., Canada, Norway, and Denmark (Greenland). The non-NATO Arctic sea power is Russia.

24. Ibid.


31. Ibid.


45. Ibid.


53. Ibid.

54. Statement of General Philip Breedlove before Senate Committee on Armed Services, April 1, 2014.


63. Ibid.


75. 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 k in Kirkuk [modern-day Iraq].” See James Barr, A Line in the Sand: Britain, France, and the Struggle That Shaped the Middle East (London: Simon & Schuster U.K., 2011), pp. 7-20. See also Margaret McMillan, Paris 1919: Six Months That Changed the World (New York: Random House, 2003).


82. The NATO members that fall within the range of Iran’s known missile capabilities are Turkey, Greece, Romania, and Bulgaria.


86. Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.


89. Austin, “Commander’s Posture Statement,” March 5, 2015.


92. 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.


95. Ibid.

96. Created in 1981, the GCC was founded to offset the threat from Iran, which became hostile to traditional Arab monarchies after its 1979 revolution.


102. Ibid.


108. Ibid.

109. Ibid.

110. Ibid., p. 27.


123. Ibid.

124. Ibid.

125. Ibid.


129. Schenker and Trager, “Egypt’s Arms Deal with Russia: Potential Strategic Costs.”


132. Ibid., p. 328.

133. Cooper and Barnard, “Jordan and Emirates Carry Out Airstrikes in Syria Against ISIS.”

134. 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.


136. Ibid.


158. Ibid.


166. Ibid.


169. Ibid.


179. Interview with Japanese officials, on file with The Heritage Foundation.


199. Ibid.


203. Ibid.


211. Ibid., pp. 137-140 and 312–315.


222. Smith, “Ministerial Statement on Full Knowledge and Concurrence.”

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, outer space, and cyber 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 entities 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

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<th>Behavior</th>
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<tr>
<td>Capability</td>
<td>FORMIDABLE</td>
<td>GATHERING</td>
<td>CAPABLE</td>
<td>ASPIRATIONAL</td>
<td>MARGINAL</td>
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Europe

The transatlantic alliance—the North Atlantic Treaty Organization (NATO)—has been the linchpin of America’s security since the end of the Second World War. In many cases, the United States and its European allies have helped to create the conditions for prosperity and peace across large areas of the world.

However, despite the centrality of the transatlantic relationship, fractures have appeared, and many of these fractures are self-imposed. With the end of more than a decade of out-of-area combat operations in Afghanistan, NATO has entered a period of soul-searching as Russia at the same time becomes more assertive. Many European NATO members no longer possess the military capability or political will to contribute to the alliance in a meaningful way.

While defense spending has been declining, threats to the region have not disappeared. The resurgence of an aggressive, belligerent Russia has thrown conventional post–Cold War thinking into the waste bin. While policies pursued by the U.S. and our allies vis-à-vis Russia have given Russia space to expand its regional influence, Putin’s decision to invade Ukraine and annex Crimea has changed post–Cold War norms.

From the Arctic to the Baltics, Ukraine, and the South Caucasus, Russia has proven to be the source of much instability in 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 the past year further adds to the need for the U.S. to give due consideration to Russia’s ability 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.-allied nations and to threaten and prevent other nations from having free access to the commons. Russia has both intercontinental-range and short-range ballistic missiles and a varied nuclear weapons arsenal that can be delivered by sea, land, and air.

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. 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, Russia needs a modern and flexible military...
to fight local wars such as the ones in Georgia in 2008 and Ukraine in 2014. Russian military doctrine allows for the use of nuclear weapons in local and regional conventional wars and considers such use de-escalatory.

In December 2014, President Vladimir Putin signed a new version of the military doctrine, emphasizing the threat of NATO and global strike systems to Russia. Russia's defense budget increased by $20 billion in 2015 and was spared a 10 percent across-the-board cut due to lower prices of oil, costs of sanctions, and costs of maintaining the Ukrainian conflict. Russia's nuclear forces are the primary beneficiaries of the budget increase. Russia is planning on deploying 38 new strategic missiles, one strategic submarine, and seven modified strategic bombers in addition to seven air defense systems and three Yars missile regiments.

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.

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 pre-emptive nuclear strikes. It has also scaled up flights penetrating Air Defense Identification Zones of the United States and its allies. The Russians justify their aggressive behavior by pointing to deployments of U.S. missile defense systems in Europe. These systems, however, are not scaled or postured to mitigate Russia's ballistic missile and nuclear weapons advantage to any significant degree. In March 2015, Russia's ambassador to Denmark threatened that Danish ships taking part in NATO's missile defense have made themselves targets for a nuclear attack. Russia continues to violate 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.”

WWTAs: The WWTAs state that Russia has made headway in its nuclear modernization efforts including “developing long range precision strike capabilities.”

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, especially in light of Russia's continued threatening of Europe with nuclear attacks. Russia's nuclear arsenal 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

To many U.S. allies, Russia does pose a threat. At times, this threat is of a military nature. At other times, Russia uses less conventional tactics such as cyber attacks, utilization of energy resources, and propaganda.

Today as in Imperial times, Russia's influence is exerted by both the pen and the sword. Organizations like the Collective Security Treaty Organization (CSTO) or Eurasia Economic Union attempt to bind regional capitals to Moscow through a series of agreements and treaties, for example. However, Russia also will not hesitate to use military force to exert influence in the region.

There are four 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, the Balkans, and the South 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 continue to view Russia as a significant threat.
After World War I, the three Baltic nations of Estonia, Latvia, and Lithuania proclaimed their independence, and by 1923, the U.S. had granted full recognition to all three. In June 1940, as part of the Molotov–Ribbentrop Pact between Nazi Germany and Stalinist Russia, Soviet troops entered and occupied the three Baltic countries. A month later, the acting U.S. Secretary of State, Sumner Welles, issued what was later to be known as the Welles Declaration, condemning Russia’s occupation and stating America’s refusal to recognize the legitimacy of Soviet control of these three states. The three states regained their independence with the end of the Cold War. 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.

Backed, armed, and trained by Russia, separatist leaders in eastern Ukraine 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 Donbas 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. Two cease-fire agreements—one in September 2014 and another in February 2015, known as Minsk I and Minsk II, respectively—have come and gone. Since the most recent agreement went into effect, dozens of Ukrainian soldiers have been killed and hundreds more have been wounded. In fact, the separatists violated the Minsk II agreement 139 times in the first 24 hours alone—almost once every 10 minutes.16

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 howitzers, tanks, and air defense systems have continually crossed the border into Ukraine. Additionally, General Philip Breedlove, commander of NATO forces in Europe, has 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.17 Russian fighter jets flying from newly seized bases in Crimea practiced penetrating NATO anti-air systems in the Black Sea in March 2015.18

These cease-fire agreements have resulted in the de facto partition of Ukraine and have created the region’s newest frozen conflict. Moscow’s track record in implementing cease-fires means that nobody should expect Russia not to use its influence to control the separatists in eastern Ukraine. Seven years later, Russia is still in violation of the 2008 peace agreement signed to end the war against Georgia. Russia still has its troops based in areas where they are not supposed to be, and Moscow still prevents international observers from crossing into South Ossetia and Abkhazia even though they patrol freely in the rest of Georgia.

Whether in Georgia or in eastern Ukraine, it is in Russia’s interests to keep these conflicts frozen. Russia derives much of its regional influence through these frozen conflicts. Bringing these conflicts to a peaceful conclusion would only decrease Russia’s influence in the region.

The other countries in Central and Eastern Europe also see Russia as a threat, although to varying degrees. Most tend to rely almost completely on Russia for their energy resources, some have felt the sharp end of Russian aggression in the past, and all were once in the Warsaw Pact and fear being forced back into a similar situation.

In addition to the historical experiences that shape Russia’s aggressive image 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, and there have been reports that Russia has deployed tactical nuclear weapons in Kaliningrad.

Russia also has dedicated resources to major training exercises involving tens of thousands of troops that many in Eastern Europe fear are directly aimed at them. In March 2015, without warning, Russia staged a five-day exercise involving 45,000 troops, 3,000 vehicles, 110 aircraft, 15 submarines, and 40 surface vessels. The Russian Northern Fleet was brought to full combat readiness as part of the exercise. While there is nothing necessarily wrong with Russia conducting military exercises, the scale of the snap exercise and its being held coincidentally with NATO’s long-planned, 5,000-troop Joint Viking exercise in northern Norway were meant as a signal of Russian strength. “Conducting this single exercise in the area stretching from Norway to the Baltics through Poland and into Crimea is clearly angled toward NATO and its Eastern European members.”

The frequency of large-scale Russian exercises has been increasing in recent years. 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 Belarusian troops participated; however, some Western observers believe the total number of troops was closer to 70,000. The exercise was intended to test the efficacy of Russia’s military modernization efforts in its Western Military District 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.

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.” Considering that similar justifications were used to invade Ukraine, the exercises clearly have real-world implications.

More worrisome still, Russian exercises at times have included a nuclear element, such as in 2009, when a Russian exercise scenario included a nuclear attack on Warsaw.

WWTA: The WWTA notes that Russia is pressuring neighboring states to join the Eurasian Economic Union as way to achieve greater regional influence. By utilizing a growing relationship with China and multilateral forums, Russia also continues to work to dilute U.S. influence in Europe.

Summary: NATO members 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 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 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 was established in 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,
MAP 3
Russia Fortifying Bases in Arctic Region

Key regional headquarters
Confirmed bases Russia is building/upgrading
Bases Russia may upgrade

Source: Heritage Foundation research. heritage.org
the airfield on Kotelny Island has been put into use for the first time in almost 30 years. The ultimate goal is to deploy a combined Russian arms force in the Arctic by 2020, and it appears that Russia is on track to accomplish this.

NATO continues to debate what, if any, role it should have in the Arctic. Although NATO’s 2010 Strategic Concept (the most recent) 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 2014 Wales 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, however, 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 does not mention the Arctic region.

Summary: While NATO has been slow to turn its attention to 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 propaganda, 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 and participating actively in international information cooperation; and take necessary measures to counteract information threats to its sovereignty and security.

Russian media are hardly independent. In 2014, Russia ranked 148th out of 180 countries in Reporters Without Borders’ World Press Freedom Index. “Ever since Vladimir Putin returned to the Kremlin in May 2012,” reports the Index, “more and more draconian laws have been adopted. Activists, news media and bloggers have all been targeted. Defamation has been criminalized again, websites are being blacklisted and the range of activities that can be construed as ‘high treason’ is now much broader.”

While much of its propaganda is meant for a domestic Russian audience, Russia is working actively to influence audiences abroad as well. In 2015, RT, a Russian television news station that broadcasts in Arabic, English, French, German, Russian, and Spanish, will receive $400 million in state funding. Rossiya Segodnya, a radio and wire service crafted from RIA Novosti and the Voice of Russia, will receive $170 million in state funds for 2015. Russian propaganda efforts also include newspaper supplements and the hiring of Western public relations firms. In 2013, for instance, Ketchum helped to place an op-ed in The New York Times written by Vladimir Putin criticizing American exceptionalism.

Russia’s plans have met with some success abroad; in December 2014, RT claimed that its combined YouTube channels made it the first news channel to hit 2 billion views. While Russian state propaganda instruments have proliferated in Western capitals, however, the number of Western journalists inside Russia has decreased. In September 2014, “the Russian Duma passed a law restricting foreign ownership of media companies to 20 percent. The law effectively forces foreign owners to relinquish control over independent outlets, further consolidating the government’s control over the media.”

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. General Philip Breedlove described the importance of propaganda for
Russian military operations: “Undergirding all of these direct approaches is the pervasive presence of the Russia propaganda machine, which inserts itself into media outlets globally and attempts to exploit potential sympathetic or aggrieved populations.”44 Russian media have worked to push the false claim that Russia is simply defending ethnic Russians in Ukraine from far-right thugs. Russian media also have claimed that the government in Kyiv is to blame for the violence that has enveloped parts of the country or that the U.S. has instigated unrest in Ukraine.45 After a civilian airliner was shot down by Russian-backed separatists, Russian propaganda spun stories that the plane was shot down by the Ukrainian government.46

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’s propaganda.47 Twitter has also been used in Ukraine 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, especially Estonia and Latvia. Many ethnic Russians in these countries get their news through Russian-language media (especially TV channels) that give the official Russian state line, often interspersed with entertainment shows, making it more appealing to viewers. In 2014, Lithuania and Latvia temporarily banned certain Russian TV stations such as RTR Rossiya in light of Russian aggression in Ukraine.48

The inability to reach ethnic Russians in their vernacular remains a glaring vulnerability for planners when thinking about Baltic security. In an effort to provide an independent alternative Russian-language media outlet, Estonia, Latvia, and Lithuania are in various stages of planning and creating their own programming for Russian-language TV channels to counter Russian propaganda efforts.49

WWTA: The WWTA states that Putin has utilized state media propaganda to justify the seizure and annexation of Crimea and to bolster his personal approval ratings. “Russian state controlled media publish false and misleading information in an effort to discredit the West, undercut consensus on Russia, and build sympathy for Russian positions.”50

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 for its use to stir up agitation in the Baltic States and to expose fissures between Western states makes Russian propaganda a continued threat to regional stability and a possible threat to the NATO alliance.

Russian Destabilization in the South Caucasus. The South 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 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.

Russia views the South Caucasus as part of 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. Seven years later, several thousand Russian troops occupied the two Georgian provinces of South Ossetia and Abkhazia.

In 2015, Russia has signed so-called integration treaties with South Ossetia and Abkhazia. Among other things, these treaties call for a coordinated foreign policy, creation of a common security and defense space, and implementation of a streamlined process for Abkhazians and South Ossetians to receive Russian citizenship.51 The Georgian Foreign Ministry criticized the treaty as a step toward “annexation of Georgia’s occupied territories.”52 These agreements are the first step in a process of Russian annexation of these two breakaway regions—both of which are still internationally recognized as part of Georgia. Considering Russia’s illegal annexation of Crimea, Georgians have serious cause for concern.

Today, Moscow continues to take advantage of ethnic divisions and tensions in the South 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 South 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 reliance on Iran, which for obvious reasons is not ideal for Russia.

Consequently, there is 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. Causing instability in Samtskhe-Javakheti would achieve two goals for Moscow.

First, it would further dismember the territorial integrity of Georgia. The Georgian provinces of South Ossetia and Abkhazia are already under Russian occupation. By some accounts, they are closer than ever to being annexed by Moscow. An independent Samtskhe-Javakheti, or one under Russian influence, would divide Georgia down the middle.

Second, and more important for Russia, bringing the region under Moscow’s influence would bring a land corridor between Russia and Armenia via South Ossetia one step closer. This is important because Russia maintains a sizeable military presence in Armenia.

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 opened 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.\(^{56}\)

Armenian separatism in Samtskhe–Javakheti might not be as vocal as it was only a few years ago, but there is still a fear that Moscow could easily reenergize separatist movements in the region. Many Javakheti Armenians have Russian sympathies. Until its closure in 2007, the Russian military base there was the single biggest source of employment.

But Russia is only part of the problem. Many of the Javakheti Armenians’ grievances are a result of poor policymaking by the central government in Tbilisi. Many Javakheti Armenians feel that their culture and language are subject to official discrimination. There has been a decrease in the quality of education among the Javakheti Armenian population, and the bilingual education program of teaching in both Georgian and Armenian has been described as a “total failure” because there are not enough qualified teachers with proficiency in both languages.\(^{57}\)

Additionally, unemployment is high in Samtskhe–Javakheti, and future economic prospects in the region look bleak. Many Javakheti Armenians travel to Russia or Armenia for work. The Russian ruble has lost almost one-third of its value in the past year, as a result of which remittances have also decreased.

Then there is the issue of citizenship and immigration. Many Javakheti Armenians do not have Georgian citizenship. Instead, many hold Armenian passports because an Armenian passport makes it easier to find seasonal work in Armenia and Russia. Until recently, Armenian citizens were allowed to live and work inside Georgia without any special authorization as long as they crossed the border back into Armenia at least once a year. In September 2014, this changed. Now Javakheti Armenians without Georgian citizenship can stay in Georgia for only three months at a time. Longer-term residency permits are costly.

These policies breed animosity and form a perfect storm that could easily be exploited by Russia.

The Nagorno–Karabakh conflict is another area of instability in the region. The conflict between Armenia and Azerbaijan started in 1988 when Armenia made territorial claims to Azerbaijan’s Nagorno–Karabakh Autonomous Oblast.\(^{58}\) 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.\(^{59}\)

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.”\(^{60}\) 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.\(^{61}\)

The South 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.

WWTA: The WWTA projects that tensions between Russia and Georgia remain high, with continued pressure for Georgia to abandon further moves to integrate into NATO or the EU. The simmering conflict and occasional violence between Armenia and Azerbaijan continues, and a peaceful resolution is unlikely in the foreseeable future.

Summary: Russia views the South 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.

The Balkans. Although security has improved dramatically in the Balkans 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 the region with Kosovo remains fragile, although an EU-led rapprochement between Kosovo and Serbia has seen modest success.

There has been an increase in Russian activity in the region. Serbia in particular has long served as Russia’s foothold in the Balkans. Both Russia and Serbia are Orthodox countries, and Russia wields huge political influence in Serbia. Moscow backed Serbian opposition to Kosovo’s independence in 2008 and continues to use Kosovo’s independence to justify its own actions in Crimea, South Ossetia, and Abkhazia.

Serbia and Russia have signed a strategic partnership agreement focused on economic issues. Russia’s inward investment is focused on the transport and energy sectors. Russia’s recent decision to scrap the South Stream gas pipeline is a huge blow to Serbia and will likely cost Serbia billions of euros of inward investment and thousands of local jobs. Except for those in the Commonwealth of Independent States, Serbia is the only country in Europe that has a free trade deal with Russia. Even with the negative impact of the South Stream cancellation, it is likely that Serbia will continue to consider Russia its closest ally.

The Russian–Serbian military relationship is similarly close. Russia signed an agreement with Serbia to allow Russian soldiers to be based at Niš airport, which has been used by Serbia to meddle in northern Kosovo. Serbia has observer status in the Collective Security Treaty Organization, Russia’s answer to NATO. Serbia and Russia have signed a 15-year military cooperation agreement that includes the sharing of intelligence, military officer exchanges, and joint military exercises. Russia’s handling of the situation in Ukraine has not changed Serbian attitudes regarding military cooperation with Russia. During a state visit to Serbia in October 2014, Putin was honored with the largest Serbian military parade since the days of Yugoslavia. The two countries have also carried out military training exercises.

Russia is also active in Bosnia and Herzegovina—specifically, the ethnically Serb region, Republika Srpska, one of two sub-state entities inside Bosnia and Herzegovina that emerged from that country’s civil war in the 1990s.

Bosnia and Herzegovina is on the path to joining the transatlantic community but has a long way to go. It negotiated a Stabilization and Association Agreement with the EU, but the agreement is not in force because key economic and political reforms have not been implemented. In 2010, NATO offered Bosnia and Herzegovina a Membership Action Plan, but progress on full membership has been stalled because immovable defense properties in the country are still not under the control of the Ministry of Defense. Moscow knows that the easiest way to prevent Bosnia and Herzegovina from entering the transatlantic community is by exploiting internal ethnic and religious divisions between the Serb and Bosniak and Croat populations.

The leader of Republika Srpska, Milorad Dodik, has long been an advocate of independence for Republika Srpska and has enjoyed a very close relationship with the Kremlin. Recent events in Ukraine, especially the annexation of Crimea, have inspired more separatist rhetoric in Republika Srpska. In many ways, Russia’s relationship with Republika Srpska looks like a relationship with another sovereign state and not with a semi-autonomous region inside Bosnia and Herzegovina. When Putin visited Serbia in October 2014, Dodik was treated like a head of state and invited to Belgrade to meet with him.

Russia has also thrown the future of the European-led peacekeeping operation in Bosnia and Herzegovina into doubt. Russia, which holds veto power in the U.N. Security Council, recently abstained during the annual vote extending the peacekeeping mission. This was the first time in 14 years that Russia failed to vote for this resolution. Russia also requested that a sentence mentioning “the Euro-Atlantic perspective of Bosnia-Herzegovina” be omitted from the annual Security Council resolution.

Montenegro is another focus of Moscow’s diplomacy. Russia and Montenegro have had close
relations for three centuries. Today, Montenegro walks a fine line between keeping its close ties with Russia and strengthening its ties to the West. On balance, Montenegro has been successful at remaining focused on joining the transatlantic community, but there are signs that Montenegrins are losing patience with the West after long delays in joining NATO and the EU.

After Russia annexed Crimea, the Montenegrin government backed European sanctions against Moscow and even implemented its own sanctions. However, when NATO failed to invite Montenegro to join the alliance at the September 2014 Wales Summit, some senior Montenegrin officials, including the Prime Minister, questioned whether sanctions were the right course of action. Russia has significant economic influence in Montenegro and is the country’s largest inward investor. Up to one-third of all enterprises are owned by Russian companies.

Russia has also tried to squeeze its way into the security sphere in Montenegro. Due to uncertainty surrounding the future access to its main Mediterranean naval port in Syria, Russia has requested access for the Russian navy to use Montenegrin ports for refueling and maintenance. This request was turned down because of concerns that such an agreement with Russia might negatively affect Montenegro’s NATO membership prospects.

Another challenge for the region is the increasing presence of the Islamic State and the rise of extremism. Thankfully, the region has not yet suffered an attack from ISIS, but the Balkans have served as a fertile recruiting ground for the Islamic State. This should come as no surprise. High unemployment and stagnant economies have added to the social pressures in the Balkans. Many young Muslim men feel marginalized from mainstream society and see little hope for their future.

ISIS recruiters have taken advantage of this situation. There are several hundred fighters from the Balkans in Iraq and Syria. These foreign fighters have even formed a so-called Balkans Battalion for Islamic State. The bulk of these fighters have come from Kosovo, but others can be traced back to Albania, Bosnia, and the Republic of Macedonia. The region is also important to ISIS for reasons beyond recruitment. The Balkans are becoming an important transit route for ISIS fighters traveling between Western Europe and the Middle East. This is especially true for Greece and Croatia with their long coastlines. It is only a matter of time before the Islamic State uses the Balkans to plan and launch attacks across the rest of Europe.

The U.S. has invested heavily in the Balkans since the end of the Cold War. Tens of thousands of U.S. servicemembers have served in the Balkans, and billions of dollars in aid have been spent there—all in the hope of creating a secure and prosperous region that will someday be part of the transatlantic community.

**Summary:** The Balkans are being squeezed from three sides: by increased Russian involvement in internal affairs, ISIS using the region as a transit and recruiting ground, and the potential political and economic spillover from Greece. The U.S. and NATO would be wise not to dismiss the region as “mission accomplished.”

**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, in February 2015, civilian aircraft in Ireland had to be diverted or prevented from taking off when Russian bombers flying with their transponders turned off flew across civilian air lanes. Similarly, in March 2014, an SAS plane almost collided with a Russian SIGINT plane, with the two coming within 90 meters of each other.
Incidents of Russian military aircraft flying near the airspace of American allies in Europe have increased in recent years. NATO jets had to be scrambled 400 times in 2014, a 50 percent increase over 2013. The number of actual intercepts of Russian planes flying into NATO airspace also increased in 2014 to over 100, three times more than in 2013. 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. As a reassurance measure, since early 2014, NATO has quadrupled the number of aircraft patrolling the Baltic skies.

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 2014, there were eight incidents of the RAF scrambling to respond to Russian planes approaching British airspace. The Norwegian air force has similarly seen an uptick in the number of identified Russian planes flying close to Norway’s airspace. In 2012, Norway scrambled fighter jets 41 times and identified 71 Russian planes; in 2013, there were 41 scramblings with 58 planes identified; and in 2014, the number of scramblings rose 27 percent to 49 with 74 planes identified. Norway has also observed bigger and more diverse groupings of Russian planes flying near its airspace.

Non-NATO members have been the target of aggressive Russian aerial activity as well. 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. 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.

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. 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 Ukraine’s continued instability and Russia’s arming of separatist forces with advanced surface-to-air missiles. Furthermore, Russia’s continued reckless flying poses a risk to civilian aviation in Europe because Russian pilots often do not submit a flight plan or have their transponders turned on so that civilian aircraft can avoid them. For example, in March 2015, Baltic Air Policing and Swedish forces intercepted four Russian planes—two bombers and two fighters—flying without a flight plan or transponder turned on. One of the two bombers was flying at supersonic speeds through Riga’s flight information region, the first time a supersonic flight had been observed.

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.** Admiral Cecil Haney, head of U.S. Strategic Command, said in March 2015 that “[t]he threat in space, I fundamentally believe, is a real one.” Russia’s space capabilities are robust, but Moscow “has not recently demonstrated intent to direct malicious and destabilizing actions toward U.S. space assets.” However, Admiral Haney also testified in March 2015 that “Russian leaders openly maintain that they possess anti-satellite weapons and conduct anti-satellite research.”

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. While Russia has threatened to ban the sale of rockets to the United States, it has not yet acted on this threat. The U.S. has not included many Russian companies that sell rockets in sanctions. One Russian firm signed a $1 billion deal in January 2015 to sell 60 rockets to a U.S. company that supplies the International Space Station.
However, the U.S. is attempting to move away from a reliance on Russian rockets. The 2015 National Defense Authorization Act directs the Pentagon to stop using Russian rockets by 2019. The Air Force is expected to release a draft request for proposal in April 2015 for a replacement rocket.

**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.”

**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 have continued unabated. However, the Ukraine crisis has fueled U.S. efforts to develop alternate sources for rockets and space shuttles. Additionally, Russia continues to build out its counterspace capabilities and has sought to deepen its space cooperation with China as a result.

**Cyber.** Perhaps the most contested domain in Europe is the cyber domain. Russian cyber capabilities are incredibly advanced. In his 2010 book *Cyberwar,* former White House cyber coordinator David Smith quoted a U.S. official as saying that “[t]he Russians are definitely better, almost as good as we are.” 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.”

The two most obvious examples of Russian cyber aggression are the 2007 attack against Estonia and the 2008 attack against Georgia. However, Russia is suspected of conducting cyber attacks in Ukraine as well.

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.

In August 2008, Russia invaded Georgia. During this time, at least 54 government, finance, and communication websites were disrupted by hackers, making it difficult for Georgia to communicate with its citizens or with the outside world.

Moreover, 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.

Worryingly, these are not even Russia’s best military cyber capabilities or organizations, about which little is publicly known. 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.

**WWTA:** The U.S. intelligence community notes that Russia’s cyber capabilities include the establishment of a cyber command by the Russian Ministry of Defense. The new command will be responsible for conducting offensive cyber activities, including propaganda operations and inserting malware into enemy command and control systems. Russia’s armed forces are also establishing a specialized branch for computer network operations.

**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 Russia possesses more advanced cyber capabilities not yet used, presents a challenge for the U.S. and its interests abroad.

**Conclusion**

Overall, the threat to the U.S. homeland originating from Europe remains low, but the threat to American interests and allies in the region remains significant. Behind this threat lies Russia. Although Russia has the military capability to harm, and in the case of its nuclear arsenal pose an existential threat to, the U.S., it has not demonstrated the intent to do so.

The situation is different when it comes to America’s allies in the region. Through NATO, the U.S. is obliged by treaty to defend and come to the aid of the alliance’s 26 European members. NATO has been the cornerstone of European security and stability since its creation 66 years ago, and it is in America’s
interest to ensure that the military capability is available to fulfil its treaty obligations. Certain policies pursued by the Obama Administration, however, such as the cancellation of the “third-site” missile defense site in Poland and the Czech Republic, the so-called Russian reset, the removal of two heavy brigade combat teams from Europe, and the cancellation of Phase 4 of the European Phased Adaptive Approach missile defense system, have led many in Europe to question America’s commitment to transatlantic security.

Russia will continue to exploit this situation. There is nothing to indicate that Crimea will be the end of Putin’s imperial ambition, just as there was nothing in 2008 to indicate that Putin was content with limiting his actions in Georgia.

In the middle of the 19th century, British Prime Minister and Foreign Secretary Lord Palmerston said about Russia:

The policy and practice of the Russian Government has always been to push forward its encroachments as fast and as far as the apathy or want of firmness of other Governments would allow it to go, but always to stop and retire when it met with decided resistance and then to wait for the next favorable opportunity.97

What was true then is true today. Russia will continue to behave in a belligerent manner, and Putin will do what he knows he can get away with doing. The U.S. must be ready and must have the ability to respond to Russian aggression if required to do so.

Threat Scores by Country

Russia. Russia is not the threat to U.S. global interests that the Soviet Union 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. Russia’s leadership seeks to spend $340 billion by the end of the decade to overhaul the military.98 Russia possesses a full range of capabilities, from ground forces to air, naval, space, and cyber. It still maintains the world’s largest nuclear arsenal, and although a strike on the U.S. is highly unlikely, the latent potential for 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, the Balkans, and the South Caucasus. It is in these contingencies that Russia’s military capabilities are most relevant.

According to the IISS Military Balance, among the key weapons in Russia’s inventory are 378 intercontinental ballistic missiles, 2,600 main battle tanks, more than 5,125 armored infantry fighting vehicles, over 6,000 armored personnel carriers, and over 4,180 pieces of artillery. The navy has one aircraft carrier; 59 submarines (including 12 ballistic missile submarines); six cruisers; 18 destroyers; 10 frigates; and 84 patrol and coastal combatants. The air force has 1,201 combat-capable aircraft. IISS counts 230,000 members of the army. Russia also has a reserve force of 2,000,000 combined for all armed forces.99

With regard to these capabilities, Russia remains a significant continental military power and has announced research and development plans for a new ICBM, although The Military Balance states that “such ICBMs are a distant prospect, with analysts assessing little progress likely before 2020.”100 The first of the Borey-class SSBNs, the 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 continue to undergo process modernization begun by Defense Minister Anatoly Serdyukov in 2008.101 The success of some reform measures was put on display during the seizure of the Crimean peninsula. The invasion showcased Russia’s use of a host of tools in a new form of hybrid warfare. However, most of the forces used were highly trained special forces, so the successes for Russia in Crimea may not reflect the impact of modernization on the larger army.102

Russia has been investing huge sums of petrodollars in modernizing its armed forces, especially its nuclear arsenal, but Russian forces remain much weaker than they were at their Soviet peak and face huge problems from corruption and a long-term shortage of recruits thanks to declining birthrates, poor access to decent health care, and the reduction of conscription service to one year.103 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. In comparison, “Russian forces in Crimea benefited from improvements in personal equipment, logistics, personnel discipline,
This Index assesses the overall threat from Russia, considering the range of contingencies, as “aggressive” and “gathering.”

### Threats: Russia

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Middle East

Threats to the Homeland

Radical 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 most of the actors posing such a threat emanate from the greater Middle East. More broadly, threats to the U.S. homeland and to Americans abroad include terrorist threats from non-state actors such as al-Qaeda that use the ungoverned areas of the Middle East as bases 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, Its Affiliates, and the Islamic State (IS). Although al-Qaeda has been damaged by targeted strikes that have killed key leaders in Pakistan, including Osama bin Laden, the terrorist network has evolved in a decentralized fashion, and regional affiliates continue to pose a potent threat to the U.S. homeland. The regional al-Qaeda groups share the same long-term goals as the parent organization, but some have developed different priorities related to their local conflict environments.

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.

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 1970s oil boom 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 deadlier 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. Six were convicted of supporting terrorism and sent to prison, and 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 in January 2009 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.

AQAP’s Anwar al-Aulaqi, a charismatic American-born Yemeni cleric, reportedly incited several terrorist attacks on U.S. targets before being killed in a drone air strike 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.\(^{106}\) 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.

AQAP, estimated to have had approximately 1,000 members in 2013,\(^{108}\) has greatly expanded in the chaos of Yemen’s civil war, particularly since the overthrow of Yemen’s government by Iran-backed Houthi rebels in 2015. AQAP 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 has broken away from and in many ways has outstripped its parent organization in terms of the threats it poses to U.S. national interests. It 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 that is an existential threat to Christians and other religious minorities. 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; diminish and discredit Shia Islam, which it considers apostasy; and become the nucleus of a global Sunni 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, Morocco, Tunisia, 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 who deserve death, than has the parent al-Qaeda network.

Zarqawi was killed in a U.S. air strike 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 it and Iraqi Prime Minister Nouri al-Maliki’s Shia-dominated government alienated Sunni Iraqis, driving many of them to see ISIS as the lesser evil.

The IS began as a branch of al-Qaeda before it broke away from the core al-Qaeda leadership in 2013 in a dispute over leadership of the jihad in Syria. The IS shares a common ideology with its al-Qaeda parent organization but differs over how to apply that ideology. It now rejects the leadership of bin Laden’s successor, Ayman al-Zawahiri, who criticized its extreme brutality, which has alienated many Muslims. This is a dispute about tactics and strategies, not long-term goals. It may also be prompted by a personal rivalry between Zawahiri and IS leader Abu Bakr al-Baghdadi, who sees himself as bin Laden’s true successor and the leader of a new generation of jihadists.

In 2014, the IS greatly expanded its control over a wide swath of western Iraq and eastern Syria, territory that it can use as a launching pad for operations in the heart of the Arab world and beyond. Although it primarily poses a regional threat, it has attracted a growing stream of foreign militants, including some from Europe and the United States who could pose a terrorist threat when they return home. IS leader al-Baghdadi threatened to strike “in the heart” of America in July 2012.\(^{109}\) The IS reportedly has tried to recruit Americans who have joined the fighting in Syria and would be in a position to carry out this threat after returning to the United States.\(^{110}\)

Although the IS has not yet launched a major attack inside the United States, it has inspired isolated terrorist attacks by self-radicalized “stray dogs” or “lone wolves” who have acted in its name, such as the May 3, 2015, foiled attack by two Islamist extremists who were fatally shot by police before they could commit mass murder in Garland, Texas.\(^{111}\)
The al-Nusra Front, al-Qaeda's official affiliate in Syria, has an estimated 5,000 to 6,000 members and has emerged as one of the top two or three rebel groups fighting Syria's Assad dictatorship. It was established as an offshoot of Al-Qaeda in Iraq (now renamed the Islamic State) in late 2011 by Abu Muhammad al-Julani, a lieutenant of AQI leader Abu Bakr al-Baghdadi. It has adopted a more pragmatic course than its extremist parent organization and has cooperated with moderate Syrian rebel groups against the Assad regime, as well as against the Islamic State.

When Baghdadi unilaterally proclaimed the merger of his organization and al-Nusra in April 2013 to form the Islamic State of Iraq and Syria (ISIS), Julani rejected the merger and renewed his pledge to al-Qaeda leader Ayman al-Zawahiri. The two groups have clashed repeatedly, causing an estimated 3,000 deaths by March 2014.

Al-Nusra has focused its attention on overthrowing the Syrian regime and has not emphasized its 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 3,400 Westerners, including more than 150 Americans, have traveled to Syria to support Islamist rebels. An 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. And at least five men have been arrested inside the United States for providing material assistance to al-Nusra, including Abdirahman Sheik Mohamud, a naturalized U.S. citizen born in Somalia who was arrested in April 2015 after returning from training in Syria, possibly to launch a terrorist attack inside the United States.

FBI Director James Comey has stated that tracking Americans who have returned from Syria is one of the FBI's top counterterrorism priorities. Then-Attorney General Eric Holder 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 until 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 Toubou 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.

WWTAs: The WWTAs report that “Sunni violent extremists are gaining momentum and the number of Sunni violent extremist groups, members, and safe havens is greater than at any other point in history.” In addition:

The increase in the number of Sunni violent extremist groups also will probably be balanced by a lack of cohesion and authoritative leadership. Although the January 2015 attack[] against Charlie Hebdo in Paris is a reminder of the threat to the West, most groups place a higher priority on local concerns than on attacking the so-called far enemy—the United States and the West—as advocated by core al-Qa’ida....

Although most homegrown violent extremists (HVEs) will probably continue to aspire to travel overseas, particularly to Syria and Iraq, they will probably remain the most likely Sunni violent extremist threat to the US homeland because of their immediate and direct access. Some might have been inspired by calls by the Islamic State of Iraq and the Levant (ISIL) in late September for individual jihadists in the West to retaliate for US-led air strikes on ISIL. Attacks by lone actors are among the most difficult to warn about because they offer few or no signatures.

If ISIL were to substantially increase the priority it places on attacking the West rather than fighting to maintain and expand territorial control, then the group’s access to radicalized Westerners who have fought in Syria and Iraq would provide a pool of operatives who potentially have access to the United States and other Western countries. Since the conflict began in 2011, more than 20,000 foreign fighters—at least 3,400 of whom are Westerners—have gone to Syria from more than 90 countries.122

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 that is strongly backed by regimes in Iran and Syria, assisted by a political wing that has dominated Lebanese politics, and funded by Iran and 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 ongoing Arab–Israeli conflict.

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.”123

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 ter-
rorist attacks against Americans, including:

- The April 18, 1983, bombing of the U.S. embas-
sy 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 negotia-
tions that led to the Iran–Contra affair in the mid-1980s.

Hezbollah has launched numerous attacks out-
side of the Middle East. It perpetrated the two dead-
liest terrorist attacks in the history of South Ameri-
ca: 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 cen-
ter in Buenos Aires that killed 96 people. The trial
of those who were implicated in the 1994 bombing
revealed an extensive Hezbollah presence in Argen-
tina 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 Bul-
garian bus driver in a suicide bombing near Burgas,
Bulgaria. Hezbollah terrorist plots against Israe-
lis 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. By 2015, Hezbollah
forces had become crucial in propping up the Assad
regime after the Syrian army was hamstrung by
casualties, defections, and low morale. Hezbollah
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 Mid-
dle 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 fundrais-
ing, including criminal activities such as those per-
petrated 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.\(^\text{124}\)

Covert 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 conflict between Iran and the
U.S. or Israel.

WWTA: The WWTA does not reference the
potential Hezbollah threat to the U.S. homeland.

Summary: Hezbollah operates mostly in the Mid-
dle East, but it has established cells inside the Unit-
ed 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 spec-
trum 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
(PFLP–GC); 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, particu-
larly in the event that the Israeli–Palestinian peace
process breaks down completely and the Palestin-
ian 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
Shahab–2 (500 km)
Ghadr (1,600 km)
Sajjil–2 (2,000 km)
Sajjil–3 (3,700 km)

Iran's Missile Ranges

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 and potentially on Egypt and Jordan, which are perceived as collaborating with Israel. They also, however, 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.\(^\text{125}\)

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.”\(^\text{126}\)

**WWTA:** The WWTA “judge[s] that Tehran would choose ballistic missiles as its preferred method of delivering nuclear weapons, if it builds them. Iran’s ballistic missiles are inherently capable of delivering WMD, and Tehran already has the largest inventory of ballistic missiles in the Middle East.” In addition, “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 intercontinental ballistic missiles (ICBMs).”\(^\text{127}\)

**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, Iraq, Libya, Syria, and Yemen pose actual or potential threats to the U.S. and its allies.

**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 region. 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 radical Islamist ideology. The IRGC’s elite Quds (Jerusalem) Force has cultivated, trained, armed, and supported numerous 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 Islamist revolution. It has found success in establishing a network of powerful Shia revolutionary groups in Lebanon and Iraq; has cultivated links with Afghan Shia and Taliban militants;
and has stirred Shia unrest in Bahrain, Iraq, Libya, 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 eventually to replace the conventional warheads in their longer-range missiles with nuclear warheads. The Nuclear Threat Initiative has concluded that “regardless 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 in 2014 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. The development of nuclear warheads for Iran’s ballistic missiles would seriously degrade Israel’s ability to deter attacks, an ability that the existing (but not officially acknowledged) Israeli monopoly on nuclear weapons in the Middle East currently provides.

For Iran’s radical regime, hostility to Israel, to which Iran sometimes refers 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 Palestinian 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.

As of June 2015, Iran had accumulated enough low-enriched uranium to build eight nuclear bombs if enriched to weapons-grade levels, and it could enrich enough uranium to arm one bomb in less than two months. Clearly, the development of an Iranian nuclear bomb 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.

On July 14, 2015, President Obama announced that the United States and Iran, with China, France, Germany, Russia, the United Kingdom, and the European Union High Representative for Foreign Affairs and Security Policy, had reached a “comprehensive, long-term deal with Iran...” That same day, the Speaker of the U.S. House of Representatives said:

His “deal” will hand Iran billions in sanctions relief while giving it time and space to reach a break-out threshold to produce a nuclear bomb—all without cheating. Instead of making the world less dangerous, this “deal” will only embolden Iran—the world’s largest sponsor of terror—by helping stabilize and legitimize its regime as it spreads even more violence and instability in the region. Instead of stopping the spread of nuclear weapons in the Middle East, this deal is likely to fuel a nuclear arms race around the world.

On July 19, 2015, the Chairman of the National Security Council of the State of Israel briefed the Prime Minister and Cabinet on the Iran deal, noting: (1) “the preservation of Iran’s nuclear capabilities that have been made possible as a result of the agreement including the enrichment of uranium and the maintaining of underground nuclear installations such as that at Fordo,” (2) “the go-ahead that was given to Iran to continue the research and development of advanced centrifuges will significantly reduce the break-out time that Iran will need to arm itself with nuclear weapons,” (3) “if Iran honors the agreement it will have a 10-15 year break-out time for dozens of nuclear bombs, as the restrictions on its nuclear program are lifted,” (4) “were Iran to violate the agreement it would be able to break out toward individual bombs before then,” and (5) “with the hundreds of billions of dollars that will flow into its coffers Iran will step up the terrorism that it spreads in the region and around the world.”

Iran possesses a substantial inventory of theater ballistic missiles capable of reaching as far as some areas of southeastern Europe. Tehran is developing increasingly sophisticated missiles and improving the range and accuracy of its other missile systems. Iran is also acquiring advanced naval and aerospace capabilities, including naval mines, small but capable submarines, coastal defense cruise missile batteries, attack craft, anti-ship missiles, and armed unmanned aerial vehicles.

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 and the PLO 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 Palestinian 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.\textsuperscript{138}

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.\textsuperscript{139} Over 5 million Israelis out of a total population of 8.1 million live within range of rocket attacks from Gaza, although the successful operation of the Iron Dome anti-missile system greatly mitigated this threat during the Gaza conflict in 2014. In that 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 as a result of 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 region’s inherent volatility, 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, 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 of, frequent surrogate for, and terrorist subcontractor for Iran’s revolutionary Islamist 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.\textsuperscript{140} Tehran has lavishly stocked Hezbollah’s expensive and extensive arsenal of rockets, sophisticated land 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 Tehran’s 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 branch of Hezbollah in Saudi Arabia 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 inclusion in Lebanon’s parliament and coalition governments would moderate its behavior, its political inclusion did not lead it to renounce terrorism. Hezbollah also poses a potential 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 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 as 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 wounding 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 as supporting Iraq. 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 European Union member states may someday find themselves attacked by Hezbollah with weapons financed by Hezbollah supporters in their home countries.

As of 2015, Hezbollah operatives are deployed in countries throughout Europe, including Belgium, Bulgaria, Cyprus, France, Germany, and Greece. The 2015 WWTA does not reference Hezbollah threats. This is interesting in view of the fact that the 2014 WWTA identified Hezbollah as a direct threat to the interests of U.S. allies and characterized “its global terrorist activity in recent years” as having increased “to 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 that began in 2011 have created power vacuums that al-Qaeda, the Islamic State, 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 them created anarchic conditions that have enabled al-Qaeda franchises to expand the territories that they control. Rising sectarian tensions in Iraq, Syria, and Yemen also have presented al-Qaeda and other Sunni extremist groups with major opportunities to expand their activities.

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 had 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 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 dangerous threats to the U.S. homeland by virtue of their European passports and greater ability to blend into Western societies.

WWTA: The WWTA assesses that “[i]n an attempt to strengthen its self-declared caliphate,” the Islamic State “probably plans to conduct operations against regional allies, Western facilities, and personnel in the Middle East; it has already executed Western and Japanese hostages as well as a Jordanian Air Force pilot.” ISIS leader Abu Bakr al-Baghdadi has “outlined the group’s ambitious external goals, including the expansion of the caliphate into the Arabian Peninsula and North Africa and attacks against Western, regional, and Shia interests.”

Summary: The al-Qaeda network and the Islamic State have exploited the political turbulence of the Arab Spring to expand their strength and control of territory in the Middle East. They pose growing regional threats 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, who have carved out sanctuaries in Syria and Iraq. Jordan’s cooperation with the United States, Saudi Arabia, and other countries in the 2014–2015 air campaign against the IS in Syria and 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, air strikes, 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 mounted attacks against targets in Jordan that included the November 2005 suicide bombings at three hotels in Amman that killed 57 people. The IS also burned to death a Jordanian Air Force pilot captured in Syria after his plane crashed and released a video of his grisly murder in February 2015. 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. Because Jordan is 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 President Hosni Mubarak’s 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 could 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. In November 2014, the Sinai-based terrorist group Ansar Bayt al-Maqdis (Supporters of Jerusalem) declared its allegiance to the Islamic State; it has launched a growing terrorist campaign against the Egyptian army, police, and other government institutions.

Egypt also faces potential threats from Islamist militants and al-Qaeda affiliates based in Libya. The Egyptian air force bombed Islamic State targets in Libya on February 16, 2015, the day after the terrorist organization released a video showing the decapitation of 21 Egyptian Christians who had been working in Libya.
During the 2014 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 notes that “state security forces both in the Sinai Peninsula and mainland Egypt” face “a persistent threat of terrorist and militant violence” and that “[s]ince mid-2013, Sinai-based terrorist group Ansar Bayt al-Maqdis (ABM)—affiliated since November [2014] with ISIL—has claimed responsibility for some of the most sophisticated and deadly attacks against Egyptian security forces in decades.”

Summary: Egypt is threatened by Islamist extremist groups that have established bases in the Sinai Peninsula and in neighboring Libya. Left 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 major threat to their security. Tehran has supported groups that launched terrorist attacks against Bahrain, Kuwait, and Saudi Arabia. It aided Shiite 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, its 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 launched a series of bombings and terrorist attacks inside the kingdom in 2003 and a major attack on the vital Saudi oil facility in Abqaiq in 2006, but a security crackdown drove many of its members out of the country by the end of the decade. Many of them joined Al-Qaeda in the Arabian Peninsula in neighboring Yemen. AQAP has flourished, aided by the instability fostered by Arab Spring protests and the ouster of the Yemeni government by Iran-backed Houthi rebels in early 2015.

In addition to terrorist threats and possible rebellions by Shia or other disaffected internal groups, Saudi Arabia and the other GCC states face possible military threats from Iran. Tehran is unlikely to launch direct military attacks against these countries unless it becomes embroiled in a war with the United States and retaliates against them for supporting U.S. military efforts, but it has backed Shiite terrorist groups within GCC states such as Saudi Hezbollah and has supported the Shiite Houthi rebels in Yemen. In March 2015, Saudi Arabia led a 10-country coalition that launched an air campaign against Houthi forces and provided support for ousted Yemeni President Abdu Rabu Mansour Hadi, who took refuge in Saudi Arabia. The Saudi Navy also established a blockade of Yemeni ports to prevent Iran from providing aid to the rebels.

WWTA: The WWTA assesses that “[d]espite Iran’s intentions to dampen sectarianism...and deescalate tensions with Saudi Arabia, Iranian leaders—particularly within the security services—are pursuing policies with negative secondary consequences for regional stability and potentially for Iran” and that “Iran’s actions to protect and empower Shia communities are fueling growing fears and sectarian responses.”

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 Saudi citizens and Islamic charities have supported Islamist extremist groups and the Saudi government promulgates the religious views of the fundamentalist Wahhabi sect of Sunni Islam, the Saudi government also serves to check radical and Islamist groups like the Islamic State and is a regional counterbalance to Iran.

Threats to the Commons

The United States 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 in turn has 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 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 and gas for energy-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 Straits 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, one of the world’s most important maritime choke points, is Iran. Approximately 17 million barrels of oil a day flowed through the strait in 2013, roughly 30 percent of the seaborne oil traded worldwide.149

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 1984 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 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. 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 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. In addition, Iran can 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, and also could deploy mines by mini-submarines, helicopters, or small boats disguised as fishing vessels.

Iran’s Revolutionary Guard naval forces have developed swarming tactics using fast attack boats 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.

On April 28, 2015, the Revolutionary Guard naval force seized the Maersk Tigris, a container ship registered in the Marshall Islands, near the Strait of Hormuz. Tehran claimed that it seized the ship because of a previous court ruling ordering Maersk Line, which charters the ship, to make a payment to settle a dispute with a private Iranian company. The ship was later released after being held for more than a week.

An oil tanker flagged in Singapore, the Alpine Eternity, was surrounded and attacked by Revolutionary Guard gunboats in the Strait on May 14, 2015, when it refused to be boarded. Iranian authorities alleged that it had damaged an Iranian oil platform in March, although the ship's owners maintained that it had hit an uncharted submerged structure. The Revolutionary Guard's aggressive tactics in using commercial disputes as pretexts for the illegal seizures of transiting vessels prompted the U.S. Navy to escort American and British-flagged ships through the Strait of Hormuz for several weeks in May, before tensions eased.

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 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. 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. 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 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 were linked to Islamist militant groups based in the Sinai Peninsula.

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. By early 2015, it appeared that piracy off the coast of Somalia had abated, at least temporarily, due to security precautions such as the deployment of armed guards on board cargo ships. Pirate activity, however, continues to threaten international trade and the safety of the international commons, particularly off the coasts of West Africa and Southeast Asia, so a resurgence in the waters of the Middle East cannot be discounted.

**WWTA**: The WWTA does not reference maritime threats in the Middle East region.

**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 steeply in recent years, the potential for their return remains.

**Airspace.** The Middle East is particularly vulnerable to attacks on civilian aircraft. 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.

U.S. intelligence sources estimated that at least 800 MANPADS fell into the hands of foreign insurgent groups after being moved out of Libya. 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. In January 2015, a commercial airliner landing at Baghdad International Airport was hit by gunfire that injured a passenger and prompted a temporary suspension of flights to Baghdad.

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. 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, North Africa, and elsewhere.

**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 has a second stage that is based on an obsolete Soviet submarine-launched ballistic missile, the R-27. The technology probably was transferred by North Korea, which built its BM-25 missiles using the R-27 as a model. Safir technology could be used as a basis to develop long-range ballistic missiles.

Iran claimed to have launched a monkey into space and returned it safely to Earth twice in 2013. 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.” 165

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 intercontinental ballistic missiles (ICBMs).” 166

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.” 167

The creation of the “Iranian Cyber Army” in 2009 marked the beginning of a cyber offensive against those whom the Iranian government regards as enemies. 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. 168 Iran has invested heavily in cyber capabilities, with an annual budget reported to be almost $1 billion in 2012. 169

Hostile Iranian cyber activity has increased significantly since the beginning of 2014 and could threaten U.S. critical infrastructure, according to an April 2015 report released by the American Enterprise Institute. The Islamic Revolutionary Guard Corps and Sharif University of Technology are two Iranian institutions that investigators have linked to efforts to infiltrate U.S. computer networks, according to the report. 170

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. 171 In February 2014, Iran launched a crippling cyber attack against the Sands Casino in Las Vegas, owned by Sheldon Adelson, a leading supporter of Israel who is known to be critical of the Iranian regime. 172 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. 173

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 America’s most cyber-capable opponents. Iranian cyber forces have even gone so 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. 174

WWTA: The WWTA assesses that “Iran very likely values its cyber program as one of many tools for carrying out asymmetric but proportional retaliation against political foes, as well as a sophisticated means of collecting intelligence.” In addition, “Iranian actors have been implicated in the 2012–13 DDOS attacks against US financial institutions and in the February 2014 cyber attack on the Las Vegas Sands casino company.” 175

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 larger Middle East. Its open hostility to the United States and Israel, sponsorship of terrorist groups like Hezbollah, and history of threatening the commons underscore the problem it could pose. Today, Iran’s provocations are mostly a concern for the region and America’s allies, friends, and assets there. Iran relies heavily on irregular (to include political) warfare against others in the region and fields more ballistic missiles than any of its neighbors. The development of its ballistic missiles and potential nuclear capability also mean 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 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, the IISS assesses that “The Iranian regular forces are large, but equipped with outdated equipment. The country’s apparent strategic priority is the complementary independent Iranian Revolutionary Guard Corps.” The IRGC “is a capable organization well-versed in a variety of different operations,” and “Iran is able to present a challenge to most potential adversaries, especially its weaker neighbors.”

This Index assesses the overall threat from Iran, considering the range of contingencies, as “aggressive” and “aspirational.”

### Threats: Iran

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### Greater Middle East-Based Terrorism

Collectively, the varied non-state actors in the Middle East that are vocally and actively opposed to the United States are 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 America’s 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 the emergence of more dangerous threats 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, like the 2015 edition, 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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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’s 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 of territory in AfPak in order to have its own space from which to issue a rival claim of caliphate.

There have been reports of ISIS recruiting efforts in both Afghanistan and Pakistan, and several leaders from the Tehrik-e-Taliban Pakistan (TTP–Pakistani Taliban) have pledged allegiance to ISIS leader Abu Bakr al-Baghdadi. In early February, a U.S. drone strike killed former Afghan Taliban member Abdul Rauf, who had become a recruiter for ISIS in the Helmand province of Afghanistan. U.S. Commander in Afghanistan General John Campbell told a congressional committee in February that the ISIS presence in Afghanistan was “nascent.”

In addition to al-Qaeda, 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, headquartered in Pakistan, have stepped up attacks against the Afghan National Security Forces (ANSF) over the past year and are making a push to regain territory in Afghanistan as international forces depart. As of June 2015, around 13,200 U.S. and NATO troops were in Afghanistan as part of Operation Resolute Support to train and advise the Afghan forces. The ANSF suffered a record number of casualties in 2014, with over 4,600 police and army personnel killed. Senior U.S. commanders have said that the high rate of combat deaths was unsustainable and that, when combined with high desertion rates, the Afghan army shrank by 11 percent from January–November 2014. A Taliban resurgence in Afghanistan could allow al-Qaeda to regain ground...
Selected High-Profile Terrorist Attacks in South Asia

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 22,855 Afghan civilians, 18,954 Pakistani civilians, and 5,029 Indian civilians. Here is a list of some of the most significant attacks since 2014.

1 **PAK** Jan. 19—At least 26 Pakistani soldiers killed and 24 injured when a bomb rips through a military convoy in Bannu Town.

2 **AFG** March 20—The Taliban claims responsibility for an attack on the Serena Hotel in Kabul that kills five Afghans and four foreigners.

3 **PAK** June 11—Tehrik-e-Taliban Pakistan (TTP) and Islamic Movement of Uzbekistan (IMU) attack Karachi Airport, killing 26.

4 **AFG** Aug. 5—Afghan soldier kills U.S. Maj. Gen. Harold J. Greene while visiting a military academy outside Kabul. Greene was the highest-ranking member of U.S. forces killed in an overseas conflict since Vietnam.

5 **PAK** Aug. 17—TTP, in coordination with the IMU, attacked two airbases in Quetta, wounding 11 Pakistani security personnel. All 12 attackers were killed.

6 **PAK** Sept. 6—Al-Qaeda in the Indian Subcontinent (AQIS) attempted to hijack a Pakistani Navy frigate in order to use it to target American naval assets in the Indian Ocean. The plan was foiled and resulted in deaths of one petty officer and 10 militants.

7 **PAK** Nov. 2—Suicide bomber kills at least 57, including three Pakistani security personnel, during an India–Pakistan military ceremony at the Wagah border check point on the Pakistani side.

8 **AFG** Nov. 23—Bomb kills at least 45 Afghans at a volleyball match in eastern Afghanistan.

9 **IND** Dec. 5—Four separate attacks in Jammu and Kashmir, including at an Army camp in Uri, killed 13, including nine soldiers and three policemen.

10 **AFG** Dec. 11—Suicide bomber blows himself up during a performance at the French high school in Kabul, killing at least one and wounding more than a dozen.

11 **PAK** Dec. 16—Nine TTP gunmen stormed the Army Public School and Degree College in Peshawar, killing 145, mostly children.

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Note: For updated data on 2015 attacks in South Asia, see The Heritage Foundation, http://www.heritage.org/south-asia-terror.
in the region and pave the way for terrorist groups of all stripes to reestablish bases there.\(^\text{180}\)

Pakistan's continued support for terrorist groups that have links to 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.

A terrorist attack on a school in Peshawar on December 16, 2014, that killed over 150 people, mostly children, shocked the Pakistani public and prompted the government led by Prime Minister Nawaz Sharif to introduce a National Action Plan (NAP) to reinvigorate the country's fight against terrorism. The action plan includes steps like lifting the moratorium on the death penalty for terrorists, establishing special military courts to try terrorists, curbing the spread of extremist literature and propaganda on social media, freezing the assets of terrorist organizations, and forming special committees, comprised of army and political leaders, in the provinces to implement the NAP.

Implementation of the NAP and the Pakistani military's operations against TTP hideouts in North Waziristan should help to degrade the Pakistani Taliban's threat to both Pakistan and the international community. There are few signs, however, that Pakistan's crackdown on terrorism extends to the Lashkar-e-Taiba (LeT), responsible for the 2008 Mumbai attacks that killed nearly 160, including six Americans. Shortly after the Pakistani media reported in late January that Islamabad was freezing the assets of LeT front organization Jamaat-ud-Dawa (JuD), LeT founder and JuD leader Haziz Muhammed Saeed announced that his organization was starting an ambulance service in Karachi, demonstrating that the organization still operates relatively freely in the country.

In early April 2015, Pakistan released on bail the mastermind of the Mumbai attacks, Zakiur Rehman Lakhvi, who had been in Pakistani custody since 2009. The day before Lakhvi's release, the U.S. Department of State had announced approval of nearly $1 billion in U.S. military sales to Pakistan. It seems likely that Pakistan will continue to pursue a lax policy toward the LeT regardless of U.S. inducements.

In April 2012, the U.S. issued a $10 million reward for information leading to the arrest or conviction of 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.\(^\text{181}\)

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.\(^\text{182}\)

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.\(^\text{183}\)

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 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 premier 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."184

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.185 The potential breakup of the Pakistani state would have to be preceded by the disintegration of the army, which is currently not plausible.186

WWTA: The WWTA notes that the Afghan National Security Forces prevented the Taliban from achieving a decisive military advantage in 2014 but that they would require continued international support and funding to stave off an increasingly aggressive Taliban insurgency in 2015. With regard to Pakistan, the WWTA notes that the Pakistan government will focus on diminishing TTP capabilities in 2015 but that Pakistan's provision of safe haven to the LeT will continue to be an irritant in Indo–Pakistan relations.187

Summary: The threat to the American homeland emanating from Afghanistan and Pakistan is diverse, complex, and mostly indirect and largely involves non-state actors. The intentions of non-state terrorist groups like the TTP and LeT toward the U.S. are demonstrably hostile. Despite the broad and deep U.S. relationships with Pakistan's governing elites and military, however, it is likely that the net result of political-military interplay in Pakistan will continue to result in ambivalence with respect to terrorist groups that mean harm to American interests, both at home and in South Asia.

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.188 Among North Korea's many direct verbal threats to the U.S., in December 2014, the National Defense Commission warned that Pyongyang would "carry out an ultra-harsh war of reaction targeting the entire U.S. mainland, including the White House and the Pentagon. Our military and people are perfectly prepared to fight with the U.S. in all kinds of war, including a cyberwar."189

The United States and South Korea have revised their estimates and now see a more dire North Korean threat. After recovering components of the intercontinental ballistic missile launched by North Korea in December 2012, South Korea assessed that it had "a range of more than 10,000 kilometers."190 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."191

In April 2015, General Curtis Scaparrotti, commander of U.S. Forces Korea, testified that he believes the North Koreans "have had time and capability to miniaturize a nuclear warhead. They have stated that they had had intercontinental missiles and they had a nuclear capability, and they paraded it. As a commander, I think, we must assume that they have that capability."192 In April 2015, Admiral Bill Gortney, commander of the North American Aerospace Defense Command, told reporters that the KN-08 road-mobile ICBM "is operational today.
With the addition of the KN-08, North Korea would add to its arsenal another missile capable of reaching the continental United States. The KN-08 is currently under development.

Our assessment is that they have the ability to put a nuclear weapon on a KN-08 and shoot it at the [U.S.] homeland.”

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.”

China. Chinese nuclear forces are largely the responsibility of the People’s Liberation Army (PLA) Second Artillery Corps, which controls most of China’s ballistic missile forces. It is considered a “super branch,” but not quite an independent service. 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 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. The 2015 WWTA notes that China is likely to begin seaborne nuclear deterrence patrols in the near future but offers no judgment on the degree of threat that 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 and to the security environment in East Asia.” In this regard, it reports that North Korea is “committed to developing a long-range, nuclear-armed missile that is capable of posing a direct threat to the United States and has publicly
The U.S., South Korea, and Japan have military bases that are aligned on similar trajectories and therefore could be threatened by a single missile from North Korea. In South Korea, Seoul is the headquarters of U.S. Forces–Korea, and Osan is headquarters to the U.S. 7th Air Force.
displayed its KN08 road-mobile ICBM twice. We assess that North Korea has already taken initial steps toward fielding this system, although the system has not been flight-tested.” The WWTA 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 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 less predictable, with a vastly lower stake in the international system. There is also a widely acknowledged difference in intentions: China seeks a stable second strike capability and, unlike North Korea, is not actively and directly threatening the United States.

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 state knowledge or control.

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.

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. In addition to three conventional corps alongside the DMZ, Pyongyang has deployed two mechanized corps, an armor corps, and an artillery corps.

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.

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.
China has robust conventional missile capabilities designed to counter land forces, aircraft, and ships 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:** Although not shown, China also has the ability to strike targets within the continental United States with its inventory of intercontinental ballistic missiles (ICBMs) equipped with nuclear warheads. The CSS-3/DF-4, with a range of 5,400 km, can reach Alaska, while the DF-31A (11,000 km) and DF-5 (13,000 km) ICBMs can reach the entire U.S.

Experts have predominantly assessed that North Korea has developed several nuclear devices but has not yet mastered the ability to miniaturize a warhead or deliver it by missile. More recently, however, several studies have concluded that the North Korean nuclear threat is much greater than previously thought. Dr. Siegfried Hecker, former Director of the Los Alamos Nuclear Laboratory, concluded that North Korea could have 20 nuclear weapons by 2016. The Korea Institute at Johns Hopkins SAIS predicted a worst-case scenario of Pyongyang’s having 100 nuclear weapons by 2020.

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. 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. 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 Korean 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].”

WWTA: The WWTA calls North Korea’s nuclear weapons and missile programs “a serious threat to…the security environment in East Asia.” It also references North Korea’s export of ballistic missiles and associated materials to several countries and assistance to Syria’s construction of a nuclear reactor as illustrating “its willingness to proliferate dangerous technologies.” The WWTA warns that “[d]espite renewed efforts at diplomatic outreach, Kim continues to challenge the international community with provocative and threatening behavior in pursuit of his goals.”

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 end de facto independence of Taiwan and ultimately to bring it under the authority of Beijing—if necessary, 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.

Temperatures across the Strait have cooled significantly over the past eight years. Regardless of the state of the relationship at any given time, however, Chinese leaders from Deng Xiaoping and Mao Zedong to Xi Jinping have consistently emphasized the importance of ultimately 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 unify the island with the mainland. 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
MAP 10

The World’s Nuclear Arsenals

Figures are approximate numbers of nuclear warheads.

**United States Around 1,797**
The U.S. maintains 1,597 actively deployed strategic warheads and about 200 short-range nuclear warheads in Europe.

**Russia At least 3,582**
Russia’s active arsenal is an estimated 1,582 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.

**Israel 110**
Israel has not declared its possession of nuclear weapons. The makeup and quantity of its stockpile are uncertain.

**Pakistan 120**
Pakistan’s nuclear strategy is to counter India’s conventional forces. It has not adopted a no-first-use doctrine.

**India 110**
India has declared a no-use-first policy for its arsenal. Most of its warheads can be deployed from land-based ballistic missiles.

**China 250**
The exact size of China’s arsenal is not known. Its delivery systems include long-range missiles, bombers, and submarine-launched ballistic missiles.

**N. Korea 8**
North Korea is working on extending the range of its ballistic missiles. It visibly conducts nuclear weapons explosions.

**U.S. NUCLEAR UMBRELLA**
* Nations protected, population in millions

<table>
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<tr>
<th>Country</th>
<th>Population</th>
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<tbody>
<tr>
<td>U.S.</td>
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<td>Japan</td>
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<td>Iceland</td>
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**TOTAL: 1.09 BILLION**

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) strategy—the deployment of an array of overlapping capabilities, including anti-ship ballistic missiles (ASBMs), submarines, and long-range cruise missiles, satellites, and cyber weapons—is aimed largely 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 assist in the defense of 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. Although currently obscured by positive political relations, the military threat is never off the table. China's ability to execute a military action against Taiwan, albeit at high economic and political cost, is improving. Its intent to unify Taiwan with the mainland under the full authority of the PRC central government and to end the island's de facto independence has been consistent over time.

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 development of a mobile dual-use battlefield ballistic missile with a range of only 60 kilometers is of particular concern, especially given such weapons' impact on India's nuclear use threshold.

The broader military and strategic dynamic between India and Pakistan is essentially unstable. As noted, Pakistan continues to harbor terrorist groups, like Lashkar-e-Taiba and Jaish-e-Mohammad (JeM), which attacked the Indian parliament in 2001. JeM leader Masood Azhar resurfaced in 2014 in Pakistan to address a large public rally where he called on suicide attackers to resume jihad against India.

Hafez Muhammed Saeed, LeT’s founder and leader of its front organization, JuD, also continues to operate freely in Pakistan, often holding press conferences and inciting violence against India during large-scale public rallies. In December 2014, Saeed held a two-day conclave in Lahore that received support from the Pakistani government, including security from 4,000 police officers and government assistance in transporting attendees to the gathering of more than 400,000. India condemned the Pakistani government’s support for the gathering as a “blatant disregard” for global norms against terrorism.

The possibility of armed conflict between India and Pakistan seemed to heighten slightly following the May 2014 election to power of Bharatiya Janata Party (BJP) leader Narendra Modi. While Modi initially sought to reach out to Pakistan by inviting Pakistani Prime Minister Nawaz Sharif to his swearing-in ceremony, he subsequently called off Foreign Secretary-level talks that were scheduled for August 2014 to express anger over a Pakistani official's meeting with Kashmiri separatist leaders. Modi's cancellation of the talks signaled that his
government is likely to take a harder line toward Islamabad than the one taken by his predecessor, Manmohan Singh, and tie progress in dialogue to Pakistani steps to crack down on anti-India terrorists. Before it took power last year, the BJP often criticized previous Indian Prime Minister Singh for being too soft on Pakistan. Another obstacle to improved Indo–Pakistani ties is the political weakness of Pakistani Prime Minister Sharif, whose government barely survived month-long street protests led by the opposition in August 2014.

Adding to the tension has been an increase in cross-border firing between the Indian and Pakistani militaries, raising questions about whether a cease-fire that has been in place since 2003 may be breaking down. In August 2014, the two sides engaged in intense firing and shelling along their international border (called the working boundary) and across the Line of Control (LoC) that divides Kashmir. India’s Border Security Force Director noted that the firing across the international border was the worst it had been since India and Pakistan fought a war in 1971. Tensions were defused following a phone call between the Directors General of Military Operations in which they mutually agreed to stop the firing. A similar escalation in border tensions occurred again in December 2014 when a series of firing incidents over a one-week period resulted in the deaths of at least five Pakistani soldiers and one Indian soldier.

In what could presage a slight thaw in relations, newly appointed Indian Foreign Secretary Subrahmanyan Jaishankar visited Pakistan in early March. Both sides reportedly had constructive talks and would seek to narrow their differences. Jaishankar also reportedly raised Indian concerns with regard to cross-border terrorism and the cases against LeT leaders in Pakistani custody for involvement in the 2008 Mumbai attacks.

There is some concern about the impact on Indo–Pakistani relations of the international troop drawdown in Afghanistan. The vacuum created by the departing international forces will allow the Taliban and other extremists to strengthen their grip in the region, potentially reinvigorating the insurgency in Kashmir and raising the chances of a major terrorist attack against India. Afghan security forces successfully thwarted an attack on the Indian consulate in Herat, Afghanistan, in May 2014. A successful future attack on Indian interests in Afghanistan along the lines of the bombing of the Indian embassy in Kabul in 2008 would sharpen tensions between New Delhi and Islamabad.

With terrorist groups operating relatively freely in Pakistan and maintaining links to the country’s military and intelligence services, the risk of the two countries climbing the military escalation ladder and eventually engaging in all-out conflict is relatively high. Pakistan’s nuclear weapons capability appears to have acted as a deterrent against Indian military escalation during both the 2001–2002 military crisis 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 training camps inside Pakistan. This would likely lead to broader military conflict with some prospect of escalating to a nuclear exchange. Neither side desires another general war. Both countries have limited objectives and have demonstrated their intent to avoid escalation. This is, however, a delicate calculation.

Major Chinese Border Incursion into India.

The possibility of armed conflict between India and China, while currently remote, poses an indirect 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 northern Indian territory on the Depsang Plains in Ladakh. A visit by Chinese President Xi Jinping to India in September 2014 was overshadowed by another flare-up in border tensions when hundreds of Chinese PLA forces reportedly set up camps in the mountainous regions
of Ladakh, prompting Indian forces to deploy to forward positions in the region. The border standoff lasted three weeks and was defused when both sides agreed to pull back their troops to previous positions. India claims that China occupies more than 14,000 square miles of Indian territory in the Aksai Chin along its northern border in Kashmir, and China lays claim to more than 34,000 square miles of India’s northeastern state of Arunachal Pradesh. The issue is also closely related to China’s concern for its control of Tibet and the presence in India of the Tibetan government in exile and Tibet’s spiritual leader, the Dalai Lama.

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.215

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 highlights that Indian leaders will pursue closer economic and trade relations with China to attract investment and close their bilateral trade gap. The WWTA further notes that New Delhi’s concern about perceived Chinese aggressiveness along the disputed border is likely growing in light of the border incidents.

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. Both India and China apparently want to avoid allowing minor incidents to escalate into a more general war. The Chinese seem to use border tensions for limited diplomatic/political gain vis-à-vis India, and India responds in ways intended to contain minor incursions and maximize reputational damage to China. Yet, despite limited aims, the unsettled situation and gamesmanship along the border could result in miscalculation, accidents, or overreaction.

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 shares a common conception of international space with the United States or interest in perpetuating American predominance in securing the commons.

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 in 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 liquefied 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 and a dangerous intercept of a U.S. Navy P-8 aircraft in August 2014.

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.” To this end, China has begun a “large-scale” land reclamation program involving six reefs in the Spratly Islands, constructing islands and building facilities and airstrips and stationing artillery on them.

Airpower. Although China is not yet in a position to enforce an ADIZ consistently in either area, the steady two-decade improvement of the PLA Air Force (PLAAF) and naval aviation will one day 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.222 Consequently, the PLA 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 domestically designed and produced J-10, as well as the Su-27/Su-30/J-11 system, comparable to the F-15 or F-18, that dominates both the fighter and strike missions.223 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 5th-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.224

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.225 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.

Sea power. 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.

**Summary:** In the absence of U.S. forces, 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 other countries in the region. 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. China’s military and party leaders appear to be intent on establishing a dominant position in regional air and maritime commons.

**Escalation of Territorial Disputes or Accidental Incidents at Sea.** 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.

Rising nationalism is exacerbating tensions, making geostrategic relations in Asia increasingly complex and volatile. Nationalist themes are becoming an increasingly strong undercurrent, affecting
MAP 13

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 “Takehima” in Japan, the two disputed islands—better measured in acres than square kilometers—evoke considerable emotion.

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 China and the Philippines or between China and Japan, either by intention or as a result of an accidental incident at sea, the U.S. could be required to exercise its treaty commitments. Escalation of a direct U.S.–China incident is itself not unthinkable. Even keeping an inadvertent incident from escalating into a broader military confrontation would be difficult. This is particularly true in the East and South China Seas,
where naval as well as civilian law enforcement vessels from both China and the U.S. operate in what the U.S. considers to be international waters.

**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 freedom of the commons that benefits the entire region. Both territorial disputes related to what the U.S. considers the commons and accidental incidents could draw the U.S. into conflict. China likely does not intend to engage in armed conflict with its neighbors, particularly American treaty allies, or the U.S. itself. However, China will continue to press its territorial claims at sea in ways that, even if inadvertently, cause incidents that could escalate into more belligerent action.

**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 (or any other country) could prove far harder to handle, especially if conducted in conjunction with attacks by kinetic systems or directed-energy weapons.

**WWTA:** The WWTA 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. This appears to be its intent.

**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.”\(^{235}\) 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.\(^{236}\) 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 (zhixi 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).\(^{237}\)

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.\(^ {238}\)

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-Safe-guarding 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.249

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.240 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 2014, North Korea conducted a cyber attack on Sony Pictures in retaliation for the studio’s release of a satirical film depicting the assassination of Kim Jong-un. The cyber attack was accompanied by physical threats against U.S. theaters and citizens. Contrary to the perception that North Korea is a technologically backward nation, the regime has an active cyber warfare capability. In 2009, North Korea declared that it was “fully ready for any form of high-tech war.”241 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.242

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.243

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.244 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.”245

WWTA: According to the 2014 WWTA, China “seeks to [continue] its expansive worldwide program of network exploitation and intellectual property theft.”246 Additionally, “the North Korean Government was responsible for the November 2014 cyber attack on Sony Pictures Entertainment (SPE), which stole corporate information and introduced hard drive erasing malware into the company’s network infrastructure, according to the FBI.”247 The 2015 WWTA noted that “Chinese economic espionage against US companies remains a significant issue.”248

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.249 China sees cyber as part of an integrated capability for achieving strategic dominance in the Western Pacific region. For North Korea, cybersecurity is an area in which even its limited resources can directly support discrete political objectives.

**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 U.S. 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 in development. 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 “gathering.”

**Threats: Af-Pak Terrorism**

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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 ICBMs; four SSBMs; 6,540 main battle tanks (300 fewer than 2014); 66 tactical submarines; 72 principal surface combatants (including one aircraft carrier and 17 destroyers); and 2,239 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 2014 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. The 2015 Military Balance contains neither of these caveats but does state that “without evidence from active operations...the actual extent of improvements in China’s equipment inventory and military doctrine remain difficult to assess.” This Index assesses the overall threat from China, considering the range of contingencies, as “aggressive” and “gathering.”
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 likely has 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 563 combat-capable aircraft (40 fewer than 2014), including 80 H-5 bombers. IISS counts 1,020,000 members of the North Korean army. With regard to these capabilities, the 2014 IISS Military Balance states that “[e]quipment is mainly in a poor state, and training, morale and operational readiness all remain questionable.” The 2015 Military Balance does not repeat this quotation. It does say, however, that “maintaining ageing fleets of equipment while approaching anything resembling adequate training hours is likely an increasing difficulty.” Like the 2014 edition, 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 “hostile” and “gathering.”
Conclusion: Global Threat Level

America 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 in some cases, (3) growing military capabilities. The government of the United States 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 remains the primary threat to American interests. The 2016 Index, like the previous year’s Index, assessed the threat emanating from Russia as: a behavior score of “aggressive” and a capability score of “gathering.” Russia has continued to support separatist movements in Ukraine, has engaged in massive pro-Russia propaganda campaigns internal to Ukraine and in other Eastern European countries, and over the past year has performed a series of provocative military exercises and training missions that are viewed as warning signals to neighboring countries.

In the Middle East, Iran has long been the state actor most hostile to American interests. The 2016 Index assessed Iran’s behavior as “aggressive” and capability as “aspirational,” the same scores as the 2015 Index. Of note since publication of the 2015 Index, Iran has moved closer to becoming a nuclear power as a consequence of its negotiations with the U.S., has continued to back Houthi rebels in Yemen in what some consider a proxy war between Iran and its Sunni Arab neighbors, has continued to exert influence in the region through its backing of the Assad regime and Hezbollah, and has deepened its involvement in the instability of Iraq by providing direct support to Shia militias.

Also in the Middle East, a broad array of terrorist groups, most notably ISIS and the Iran-sponsored Hezbollah, are the most hostile of any of the global threats to America examined in the Index. They also, however, are evaluated as among the least capable. In 2015, the threat posed by ISIS has increased dramatically through a combination of highly publicized acts of brutality, territorial gains in Iraq and Syria, and aggressive campaigns both for recruiting and for inciting “lone wolf” attacks around the globe.

In Asia, China represents a degree of provocation that the 2016 Index classifies as “aggressive,” the same as the 2015 assessment. Since the 2015 assessment, China has developed islands on reefs in international waters that it claims as sovereign territory, positioning military equipment on some of them. By contrast to the principal state-based threat in the Middle East, however, China represents a “gathering” threat with a fuller range of capabilities that could be used in ways that are contrary to American interests, evidenced most notably by its continued military buildup.

North Korea’s level of behavior in this edition was raised to “hostile” from the previous edition’s
“aggressive,” driven by the Pyongyang regime’s cyber attack on Sony and continued provocative actions on the Korean peninsula. The 2016 Index also assessed North Korea’s capability level as increasing due to developments in its missile technology.

The terrorist threats emanating from the Afghanistan–Pakistan region continue to be viewed as “aggressive” in the 2016 Index. Cross-border attacks, continued aggression of groups such as the Taliban and LeT, and the appearance of ISIS as a contributor to Afghanistan’s security woes contributed to this assessment. The capability score for the region’s terrorist threat has increased to “gathering” from “capable,” mostly because the region’s weakening governing structures have helped to make it a hotbed of terrorist activity.

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 greater.

Compiling the assessments of these threat sources, the 2016 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.” This score is the same as the inaugural 2015 Index; however, it is slightly higher than in 2015, suggesting that if certain factors do not reverse course, the overall threat generated from Asia could rise to the level of “high” in the near future.

### Behavior of Threats

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### Capability of Threats

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Threats to U.S. Vital Interests

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Our combined score for threats to U.S. vital interests can be summarized thus:
Endnotes:


4. Ibid.


24. Ibid.
25. Stratfor Global Intelligence, “Russia Targets NATO With Military Exercises.”


29. RIA Novosti, “Russia Puts Some 20,000 Internal Troops on Training Alert.”


39. Ibid.


43. Kochis, “Countering Russian Propaganda Abroad.”


59. Petersen, “Russia Shows Its Hand on Karabakh.”


72. Grove, “Russia Starts Nationwide Show of Force.”


77. Ibid.


98. Grove, “Russia Starts Nationwide Show of Force.”


100. Ibid., p. 164.

101. Ibid, p. 159.

102. Ibid.

103. Ibid., p. 163.

104. Ibid., p. 159.


129. Ibid.


148. Ibid.


177. 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. Often, the U.S. handled terrorism as a law enforcement and intelligence collection matter, especially within the United States and when it presents a threat to particular U.S. interests in other countries. Compared 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 on Americans at home and abroad; it 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, terrorist groups seldom have the physical ability either to accomplish the extreme objectives they state or to present a physical threat that rises to a level that threatens U.S. vital security interests. Of course, terrorist organizations can commit, on a continuing basis, acts of war, as reflected in their conduct in the war against al-Qaeda and its associates in which the United States has been engaged for more than a decade.


227. 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.


248. Ibid.
253. Ibid.
An Assessment of U.S. Military Power

America is a global power with global interests. Its military is meant first and foremost to defend America from attack. Beyond that, it is meant to protect Americans abroad, allies, and the freedom to use international sea, air, and space while retaining the ability to engage in more than one major contingency at a time. America must be able not only to defend itself and its interests, but also to deter enemies and opportunists from taking action that would challenge U.S. interests, a capability that includes preventing the destabilization of a region and guarding against threats to the peace and security of America’s friends.

As noted in the 2015 Index, however, 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. Consequently, the U.S. risks seeing its interests increasingly challenged and the world order it has led since World War II undone.

How to Think About Sizing Military Power

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 either 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, 1,000 or more tanks might be needed 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, or his tank operations might be 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, 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—people, tanks, planes, or ships—it has. 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 a small, poorly equipped force.

All of these factors and a multitude of others bear upon the outcome of any military contest. Military planners attempt to account for them when devising requirements, developing training and exercise plans, formulating war plans, and providing advice to the President in his role as Commander in Chief of U.S. military forces.

Measuring hard combat power in terms of its adequacy in capability, capacity, and readiness to defend U.S. vital interests is hard, especially in such a limited space as this Index, but it is not impossible. 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 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; hence 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.

Administrations take various approaches to determine the type and amount of military power needed and, by extension, the amount of money and other resources to commit to it. 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 of 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 might 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? How much value should be assigned to advanced technologies as they are incorporated into the force?

Where to Start

There are references that one can use to help sort through the variables and 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 frequently cited example. Secretary Aspin recognized “the dramatic changes that [had] occurred in the world as a result of the end of the Cold War and the dissolution of the Soviet Union...[altering] America's security needs” and driving an imperative “to reassess all of our defense concepts, plans, and programs from the ground up.”

The BUR formally established the requirement that U.S. forces should 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, while minimizing the risk of significant American casualties.” Thus was formalized the two-MRC standard.

Dr. Daniel Gouré, in his 2015 Index essay “Building the Right Military for a New Era: The Need for an Enduring Analytic Framework,” noted that various
Administrations have redefined force requirements based on their perceptions of what was necessary to protect U.S. interests. In an attempt to formalize the process, and perhaps to have a mechanism by which to exert influence on the executive branch in such matters, 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 Quadrennial Defense Reviews (QDR) have been conducted since 1997, accompanied in 1997, 2010, and 2014 by independent National Defense Panel (NDP) reports that have reviewed and commented on them. Both sets of documents purport to serve as key assessments, but analysts have come to minimize their value, regarding them as justifications for executive branch policy preferences (the QDR reports) or overly broad, generalized commentaries (the 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. used the Soviet threat as its primary reference for what it needed in hard power. 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.

The evolution of guided, precision munitions and the rapid technological advancements in surveillance and targeting systems, however, have made comparing combat power 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.

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 ability of the U.S. Joint Force 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 seizing, 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 of and need for exercising 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, assesses 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, and radar cross-section are examples of quantifiable characteristics that can be measured. Specific future instances in which 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.

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.

Employment concepts 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 it 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.

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.

The Army provides a host of “common user support” capabilities to the overall force that can include operating ports, theater-wide trucking and rail operations, large-scale fuel and ammunition storage and distribution, engineering and construction services, and general supply support.

Institutional elements like recruiting are 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 that is 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 that 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 2015 was $522 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 of 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 the fact that the economy changes over time does not necessarily mean that defense spending should increase or decrease in lockstep 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 requirements 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.

In fiscal year (FY) 2015, debate about how much funding to allocate to defense was affected by a larger political debate that pitted those who wanted to see an overall reduction in federal spending against those who pushed for higher levels of spending for defense and those who wanted to see any increase in defense spending matched by commensurate increases in domestic spending. Efforts to repeal or substantially modify the Budget Control Act (BCA) were stymied by those who feared losing a mechanism that disciplines federal spending. Yet there appears to be a consensus that more money is needed for defense, given the BCA requests for FY 2016 funding from the White House and both chambers of Congress.

The FY 2015 defense budget was only $1 billion more than the FY 2014 budget. Adjusted for inflation, this is actually a 1 percent cut. The President’s budget request for FY 2016 was $561 billion, which would represent an almost 6 percent real increase over FY 2015. For comparison, President Obama’s 2012 defense budget, the last under former Secretary of Defense Robert Gates, proposed spending $624 billion on defense in FY 2015. A bipartisan consensus, as seen in the National Defense Panel report in 2014, has identified the so-called Gates budget as the minimum the United States should be spending on national defense. As seen in Chart 3, the FY 2015 enacted budget and the FY 2016 budget proposal are well below this minimum.

The restrictions placed on defense spending by the BCA continue to be a major concern of the military service chiefs, who have consistently testified about the damage these restrictions are causing to readiness, modernization, and capacity for
operations. As FY 2015 ended, the budget debates about FY 2016 had not been resolved, but it appears unlikely that any resolution will bring the national defense budget close to even the minimum levels proposed by the Gates budget.

"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 have been rare, averaging roughly 15–20 years between occurrences. In between (and even during) such occurrences, the military is used in support of regional engagement, crisis response, strategic deterrence, and humanitarian assistance, as well as providing support to civil authorities and U.S. diplomacy.

The U.S. Unified Combatant Commands, or COCOMS (EUCOM, CENTCOM, PACOM, SOUTHCOM, and AFRICOM), all 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. In 2015, these engagements included training and assisting Iraqi military forces and participating in joint training exercises with NATO members. Such events help to establish working relationships with other countries, acquire a more detailed understanding of regional political–military dynamics and on-the-ground conditions in areas of interest, and signal U.S. security interests to friends and competitors.

To support such COCOM efforts, the services provide forces that are based permanently in respective regions or that 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, 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 will 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.

Thus, the size of the total force must necessarily be much larger than any sampling of its use at any point in time.

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 war.
- 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), and any peacetime engagement typically requires some level of air support.
- 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. To illustrate with a simplistic example, a commander who wants one U.S. warship stationed off
the coast of a hostile country needs the 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 sufficiency of armored vehicles, ships, airplanes, and other equipment and weapons to win against the enemy.

- 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 and later in the conventional military operation to liberate Iraq in 2003. 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” 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 situation 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.

In fact, 2015 saw a shift in debate within military circles about the extent to which the U.S. military is ready for major conventional warfare, given its focus on counterinsurgency, stability, and advise-and-assist operations over the past decade. The Army in particular has noted the need to reengage in training and exercises that feature larger-scale combined arms maneuver operations, especially to ensure that its higher headquarters elements are up to the task.

This Index ascertains the relevance and health of military service capabilities by looking at such factors 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 reaches 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 areas 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 whether 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. Along the way to acquiring the capability, 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 the realization sets in that the country either cannot afford or is unwilling to pay the cost of acquiring the total number of platforms originally advocated. The acquisition goal is adjusted downward (if not canceled), and the military finally fields fewer platforms (at higher unit cost) than it originally said it needed to be successful in combat.

As deliberations proceed toward a decision on whether to reduce planned procurement, they rarely focus on and quantify the increase in risk that accompanies the decrease in procurement.

Something similar happens with 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 the 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 at 23 on a path to 21. The Army was on a build toward 48 brigade combat teams, but funding reductions now have it at 35 on its way to 24 BCTs by 2019—half the number that the Army originally thought necessary—if sequestration remains law.

Older equipment can be updated with new components to keep it relevant, and commanders can employ fewer units more expertly for longer periods of time in an operational theater to accomplish an objective. At some point, however, sheer numbers of updated, modern equipment and trained, fully manned units 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 in at least three 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. Some percentage of the force will always be unavailable because of 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.

The historical record shows that the U.S. Army commits 21 BCTs on average to a major conflict; thus, 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. Again, this *Index* assesses only the Active component of the services, though with full awareness that 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.
### TABLE 6

#### 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.
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.

We conducted a review of the major defense studies (1993 BUR, QDR reports, and independent panel critiques) that are publicly available, as well as 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 6. To this we added 20 percent, both 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.

America’s security interests require the services to have the capacity to handle two major regional conflicts successfully.

**Readiness.** The consequences of the current sharp reductions in funding mandated by sequestration have caused military service officials, senior DOD officials, and even Members of Congress to warn 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. To avoid this, the services have traded quantity/capacity and modernization to ensure that what they do have is “ready” for employment.

As was the case in 2014, the service chiefs have stated that current and projected levels of funding continue to take a toll on the ability of units to maintain sufficient levels of readiness across the force. Some units have reduced manning. Though progress has been made in some areas due to supplemental funding provided by Congress in 2014, the return of full sequestration threatens to undo these gains. For example:

- General Raymond T. Odierno, former Chief of Staff of the Army, has stated that the Army can maintain only one-third of its force at acceptable levels of readiness. Each shuttering of a BCT incurs a lengthy restart cost. Specifically, “it takes approximately 30 months to generate a fully manned and trained Regular Army BCT,” and “senior command and control headquarters... take even longer.”

- General Mark A. Welsh, Chief of Staff of the Air Force, has noted that if the Air Force shut off all utilities at all major installations for 12 years or quit flying for nearly two years, it would save $12 billion—enough to buy back just one year of sequestered funds.

- The Navy is accepting risk in its ability to meet defense strategy requirements according to Admiral Jonathan Greenert, Chief of Naval Operations. He has testified that under current spending limitations, “ships will arrive late to a combat zone, engage in conflict without the benefit of markedly superior combat systems, sensors and networks, or desired levels of munitions inventories.” Also, the Navy can now surge only one-third of the force required by Combatant Commanders to meet contingency requirements.

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, from the work of recognized experts in the defense and national security analytic community, and from 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 such concepts 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 when (2) U.S. forces are operating thousands of miles from home, (3) orchestrated with a particular operational concept, and (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) 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 a scale 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.

### U.S. Military Power

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U.S. Army

The U.S. Army is America’s 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 and destroy enemy land forces in battle.

As is the case with all of the other services, the U.S. Army has sought ways to absorb the budget cuts driven by the Budget Control Act (BCA) of 2011 in a responsible manner while still meeting the missions outlined in the 2012 Defense Strategic Guidance (DSG).16 Fiscal challenges have strained the Army’s ability to meet the national security requirements outlined in the DSG even as it has worked to find a proper balance among readiness, modernization, and end strength.17 The Army has continued to reduce its end strength and accept greater risk to its modernization programs to preserve readiness levels—an even more challenging problem given that its budget in FY 2015 was $4 billion lower than it was in FY 2014.

From a height of 566,000 in FY 2011, the Army’s end strength has shrunk to 490,000 Active Army soldiers in FY 2015.18 The ongoing debate between the White House and Congress (and within Congress) over funding levels as constrained by the BCA will determine whether the Army is able to sustain a projected end strength of 450,000—the minimum force level required to execute the DSG19—or must reduce its end strength even further to 420,000 soldiers. It should be noted that in July 2015, the Army announced that it would accelerate its troop reduction timeline, shedding 40,000 soldiers by the end of FY 2018 to arrive at the 450,000 minimum outlined in the DSG.20 (Since these cuts are not in effect in FY 2015, they do not factor into the Army scoring for the 2016 Index.)

Operationally, the Army has 140,130 soldiers forward stationed across 150 countries.21 This is a slight decline from the previous year’s level of 150,090 soldiers.22 Of these 140,130 soldiers, approximately 45,000 are actively engaged in named operations, with the Army maintaining less than 8,000 soldiers in Afghanistan, a dramatic decline from the 32,000 stationed there in 2014.23

Capacity

In FY 2015, total Army end strength was 1,042,000 soldiers: 490,000 Active soldiers, 202,000 in the Army Reserve, and 350,000 in the Army National Guard.24 In FY 2015, all soldiers in the Active Component were paid for in the base budget.25 This is unlike FY 2014, where a portion of personnel costs was paid through the Overseas Contingency Operations (OCO) budget function.

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.26 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 (GCV). 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 aviation 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.

CABs and Stryker, Infantry, and Armored BCTs make up the Army's main combat force, but they do not make up the entirety of the Army. About 90,000 troops form the “Institutional Army” and provide support, such as preparing and training troops for deployments and overseeing military schools and Army educational institutions. The troops constituting the “Institutional Army” cannot be reduced at the same ratio as BCTs or CABs, and the Army plans to insulate these soldiers from drawdown and restructuring proposals in order to “retain a slightly more senior force in the Active Army to allow growth if needed.” 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 concert with the end strength reduction to 490,000 soldiers, the Active Army underwent brigade restructuring that decreased the number of BCTs from 38 to 32 by the end of FY 2015. As a part of this reorganization, the Army is also adding a third maneuver battalion to its infantry and armored BCTs by the end of FY 2015. Additionally, all BCTs will receive additional engineer and fire support capabilities (i.e., additional 105mm and/or 155mm howitzers). In FY 2015, the Active Army retained 13 CABs, and the Army National Guard maintained eight CABs, although under the Aviation Restructure Initiative, two more CABs are expected to be inactivated from the Active Component by the end of the fiscal year.

The reduction in end strength in the past year has had a disproportionate effect on BCTs. To illustrate, the Active Army has been downsized from 45 BCTs (552,100 soldiers) in FY 2013 to 32 BCTs (490,000 soldiers) in FY 2015. Thus, a 12 percent reduction in troop numbers resulted in a 29 percent reduction in BCTs. The Army Chief of Staff told the Senate Armed Services Committee in March 2015 that the Army can meet the missions outlined in the 2012 DSG with this current force size, but he also warned that the continuation of sequestration would prevent the Army from executing the DSG.

**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 Stryker BCTs, as one would expect, are equipped with Stryker vehicles. Infantry BCTs rely on the M1A1 Abrams main battle tank and the M2 Bradley vehicles. A Stryker BCT is a mechanized infantry force organized around the Stryker ground combat vehicle (GCV). Armored BCTs are the Army’s principal armored unit and employ the Abrams main battle tank and the M2 Bradley fighting vehicle. A Stryker BCT is a highly maneuverable motorized unit.

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Overall, the Army’s equipment inventory is relatively healthy. While some equipment has been worn down by usage in Afghanistan and Iraq, the Army has undertaken 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 5.5 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 still have plenty of airframe service life. Today, the UH-60M, which is 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: 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.

The U.S. military services are continually assessing how best to stay a step ahead of competitors, whether to modernize the force today with currently available technology or wait 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 that will leverage the latest developments in matériel, computing, platform sciences, and designs.

The Army is currently undertaking several modernization programs to replace or improve its ground combat vehicles and current rotorcraft fleet. However, budget reductions levied in previous years have significantly affected modernization, with Research and Development, Acquisition, and Procurement accounts all experiencing cuts. In fact, “the Army has ended 20 programs, delayed 125 and restructured 124.” For example, current and projected budget pressures led the Army to cancel the ground combat vehicle program, which was intended to replace the M2 Bradley fighting vehicle, to free funding for its readiness account.

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, cancellation of the Ground Combat Vehicle (GCV) program raises the question of replacing the M2 Bradley. Although the DOD officially cancelled the GCV program, the possibility of replacing the M2 Bradley at some point in the future could still be considered, as the Army set aside $150 million in funding for GCV research and development in FY 2015 despite the absence of a budget request for the program for that year. Updating the capability that the Bradley Infantry Fighting Vehicle provides remains a requirement, and the Army is currently “refining concepts, requirements, and key technologies” in preparation for a future modernization program.

The Army is also continuing development efforts for the Armored Multi-Purpose Vehicle (AMPV) to replace its 1960s-vintage M113 Armored Personnel Carrier. The AMPV will have five mission modules, including General Purpose, Medical Treatment, Medical Evacuation, Mortar Carrier, and Mission...
Command. Because it is still in development and has not yet entered LRIP, the AMPV is not yet an MDAP and is not included in this year’s scoring.

**Readiness**

As a result of sequestration in FY 2013, the Army experienced a shortage in readiness funding that resulted in “significantly and rapidly degraded Army readiness,” which the Secretary of the Army and the Army Chief of Staff testified would “translate directly into FY 14 and beyond.” Although a higher level of funding in FY 2014 allowed for some degree of budget relief, the Army received $5.1 billion less in funding dedicated to rebuilding its readiness in FY 2015. Army Vice Chief of Staff General Daniel Allyn explained that:

> [T]o operate under this budget, we are significantly reducing key installation services, individual training events, and modernization to such an extent as to jeopardize future readiness and quality of life. For example, Logistics Readiness Centers were underfunded by $350 million in FY15, which covers funding for dining facilities, contract operations at ammo supply points, central issue facilities, maintenance, laundry and dry cleaning operations. In addition to the effect on Soldier quality of life, these cuts force Commanders to divert Soldiers from training to perform logistics tasks.

Recognizing the risk that degraded readiness introduces into its ability to respond to an emergent threat, the Army chose to prioritize operational readiness over other expenditures, such as near-term modernization, for FY 2015. A return to “full spectrum combat readiness” would require sustained investment and a projected timeline stretching to FY 2023.

This tiered readiness strategy means that only a limited number of BCTs are available and ready for decisive action. Accordingly, the tiered readiness model employed by the Army has resulted in approximately one-third of the 32 Active BCTs being ready for contingency operations in FY 2015. This is an improvement from early in 2014 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 it to regain some of the readiness lost as a result of sequestration the prior year.

The Army uses Combat Training Centers (CTCs) to train its forces to desired levels of proficiency. Specifically, the mission of the CTC Program is to “provide realistic Joint and combined arms training” to approximate actual combat and increase “unit readiness for deployment and warfighting.” In FY 2015, the Army financed 19 CTC rotations, the same number as in FY 2014, despite lower levels of funding. Although utilizing CTCs continues to be a priority for the Army, resource constraints have limited investment in readiness.

In FY 2015, the Army supported the Army Contingency Force (ACF) initiative that is developing “a contingency response force which provides Combatant Commanders an initial response capability that can achieve early objectives for most contingency plans.” Under the ACF model, the Army maintains readiness for only 24 of the 60 total BCTs maintained by the Active, National Guard, and Reserve Components, which “receive sufficient funding to conduct training at CTCs and home station.” The other 36 BCTs maintained by the Total Army are limited to “minimum Individual/Crew/Squad resourcing levels through sufficient Training Support Systems.” The aforementioned numbers can be misleading, as the Active Component maintains only 32 BCTs in total and realistically maintains only about 30 percent of them at acceptable levels of combat readiness.

Another key factor in readiness is 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 has continued with its reset program to restore used equipment to desired capability or to replace worn-out equipment for use in future engagements. In 2014, the Army estimated that it would require three years of reset funding “after redeployment of the last piece of equipment from theater” to complete redeployment and retrograde operations.

Reduced funding throughout FY 2013, a consequence of sequestration, forced the Army to postpone the reset of several pieces of equipment, totaling “700 vehicles, 28 aircraft, and 2,000 weapons” in 2014. However, the Army was able to synchronize equipment retrograde out of Afghanistan efficiently in 2014, and “retrograde operations remain on schedule” in 2015. Furthermore, after identifying “potential requirement reductions in contractor logistics and training support” and reducing depot maintenance, the Army was able to enhance
“the capability of its prepositioned stocks program” without raising the associated costs.\textsuperscript{29} If the necessary funding is again reduced by the BCA, the Army’s efforts to recover from recent operations and prepare for the future will be further stymied.

Scoring the U.S. Army

Capacity Score: Weak

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 Quadrennial Defense Review, 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.\textsuperscript{71} 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 2015 Level:** 32 brigade combat teams.

The Army’s current Active Component BCT capacity meets 64 percent of the two-MRC benchmark and thus is scored as “weak.”

Capability Score: Marginal

The Army's aggregate capability score remains “marginal.” While the Army will continue to pursue a model of tiered readiness with the aim of improving, if only slightly, troop readiness levels in FY 2015 over the previous year, the service’s overall capability score remains static due to continued reductions to end strength, which degrades capability. Capability is further diminished by the fact that the Army now has fewer soldiers deployed around the world than it has had in recent years.

Additionally, in spite of progress with the JLTV and AMPV, subsequent budget reductions and continuing resolutions have led to inadequate and short-sighted funding for the development of future modernization programs, negatively affecting platform innovation and modernization. These subsequent reductions have set back the Army’s development of future capabilities needed to remain dominant in any operational environment.

This aggregate score 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

Only 12 Active BCTs were ready for action according to official Army testimony by the Vice Chief of Staff in March 2015.\textsuperscript{72} The Army had 32 BCTs; therefore, roughly a third of the Active Army was considered ready for combat. For that reason, this Index assesses Army readiness as “weak.” However, it should be noted that the Vice Chief of Staff also reported in March that of the BCTs fully trained for “decisive action operations,” the readiness of nine had been consumed in support of ongoing operations, which means that only three were uncommitted and ready for use.\textsuperscript{73} With this in mind, actual readiness is therefore likely dangerously close to nearing a state of “very weak.”

Overall U.S. Army Score: Weak

The Army’s overall score is calculated based on an unweighted average of its capacity, capability, and readiness scores. The average score was 2.3; thus, the overall Army score is “weak.” This was derived from the aggregate score for capacity (“weak”); capability (“marginal”); and readiness (“weak”).
### U.S. Military Power: Army

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The Navy’s mandate is “to be where it matters, when it matters.” As the military’s primary maritime arm, 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 project combat power rapidly anywhere in the world, the Navy’s peacetime forward presence supports missions that include securing sea lines of communication (SLOC) 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.

Three key documents inform the Navy as to the level of its day-to-day fleet requirements: the 2012 Defense Strategic Guidance (DSG);75 the fiscal year (FY) 2015 Global Force Management Allocation Plan (GFMAP);76 and the 2015 update to “A Cooperative Strategy for 21st Century Seapower.”77 The 2012 DSG issued by the Secretary of Defense describes 10 primary missions for the Navy and the other branches of the U.S. military. In addition, the U.S. Navy must meet forward presence requirements laid out in the FY 2015 GFMAP, which states the force presence needed around the world as determined by the combatant commanders (COCOMs) and the Secretary of Defense.78

This past year, the Navy was able to avert some of the foreseen challenges caused by budget cuts as a result of legislative action; however, as Admiral Jonathan Greenert, Chief of Naval Operations (CNO), testified in his March 2015 posture statement, the Navy was “compelled to further reduce the capacity of weapons and aircraft, slow modernization, and delay upgrades to all but the most critical shore infrastructure” due to continued budget shortfalls of $11 billion.79

Capacity

For the Navy, capacity is measured by the number of ships rather than the number of sailors, and 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 missions.80 Last year, the Navy attempted to change how it counted its “battle force” fleet by justifying the inclusion of hospital ships and certain smaller craft that previously had not been counted.81 Congress added language to the FY 2015 National Defense Authorization Act that prevented this new counting rule from going into effect.82 The language clarified a battle force ship as “any commissioned ship built or armed for naval combat or any naval ship designed to provide support to combatant ships and other naval operations. Such term does not include patrol coastal ships, non-commissioned combatant craft specifically designed for combat roles, or ships

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**U.S. Navy**

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that are designated for potential mobilization.”

This subsequently prevented 12 vessels (two hospital ships and 10 forward-deployed patrol craft) from being counted in the battle force fleet. As a consequence, the battle force fleet declined from 282 as of the time the 2015 Index was published to 271 as of the time the 2016 Index was being written. This rule change accounts in part for the major fluctuation in the fleet between the 2015 and 2016 Indexes, which also changed due to normal ship commissionings and retirements that occur annually.

In 2015, the Navy increased its battle force requirement to 308 ships, two more than the previous year. This figure is derived from the 2014 Force Structure Analysis, the DSG, and the GFMAP. The additional two ships in the fleet requirement are an LPD-17 amphibious ship and a Mobile Landing Platform vessel. Congress added funding for the amphibious ship in FY 2013 and FY 2015; it had not been requested by the Navy. While this may seem excessive since the Navy did not officially request a 12th LPD-17 ship, the Navy’s amphibious fleet is currently well below the Navy and Marine Corps program of record requirement (34 hulls); therefore, the addition of an unrequested LPD-17 contributes to the Navy’s broader amphibious vessel needs. The highest ship count in the past five years was 288 in FY 2010.

The “biggest shortfall” assessed in the 2016 Index is the same as in the 2015 edition: “small surface combatants: Littoral Combat Ships, frigates, and mine countermeasures (MCM) ships.” The main driver of this gap is the retirement of all remaining Oliver Hazard Perry-class frigates by the end of FY 2015 (September 2015). Of the larger battle force ships (including destroyers, cruisers, amphibious vessels, and aircraft carriers), the aircraft carrier fleet currently has a shortfall of one vessel (10 instead of 11), but that is considered to be a temporary condition that will be remedied in early 2016.

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 March 2016. 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.

Without significant funding increases, it appears unlikely that the Navy will reach its own capacity goals for the foreseeable future. Due to expected funding shortfalls relative to fleet goals, “the Navy projects that the fleet would experience a shortfall in small surface combatants from FY2016 through
FY2027, a shortfall in attack submarines from FY2025 through FY2036, and a shortfall in large surface combatants (i.e., cruisers and destroyers) from FY2036 through at least FY2045.94

In December 2014, the Congressional Budget Office (CBO) calculated that the Navy’s 306-ship fleet goal would cost $20.7 billion annually, well above the historical average of $15.7 billion per year.95 Using its own cost estimates, the CBO estimated that the Navy would be able to purchase 69 fewer ships over a 30-year period, including two fewer aircraft carriers, 17 fewer attack submarines, and six fewer amphibious ships. Although the CBO had not published its assessment of the FY 2016 shipbuilding request as of the time the 2016 Index was being written, the Navy’s FY 2016 request of $16.6 billion also falls well below the $20.7 billion level that the CBO assesses as necessary to reach fleet goals.96

As important as the total fleet size is, the Navy 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 deployment time for sailors. However, given the COCOMs’ requirements for naval power presence in each of 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 95 ships deployed globally—just over 35 percent of the total available fleet (a 1 percent decline since last year’s assessment).97 Note that this slight decline in percentage of ships deployed to the total battle force fleet is driven partly by the more significant decline in the total fleet from the past year (as previously noted, down from 282 ships to 271 ships). The percent decrease in presence around the globe, using the forward-deployed ship count in 2014 (104) and that of 2015 (95) is therefore roughly 9 percent.98

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.99

- **Home-ported**: The ships, crew, and their families are stationed at the port or based abroad.
- **Forward Stationed**: Only the ships will be based abroad while crews are rotated out to the ship.100

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.101 A key example of the use of this practice is the Navy’s constant forward deployment of an aircraft carrier at the U.S. naval base in Yokosuka, Japan. In May 2015, the USS George Washington (CVN-73) departed this base with the USS Ronald Reagan sailing there to replace it.102 The George Washington, stationed at Yokosuka since 2008, left to undergo its midlife refueling and complex overhaul (RCOH).

The Navy maintains that it currently will be able to meet the FY 2015 GFMAP requirements and 10 missions outlined in the DSG. However, Admiral Greenert has acknowledged that budget shortfalls over the past few years, under Budget Control Act of 2011 (BCA) caps and otherwise, have “forced the Navy to accept significant risk in key mission areas, notably if the military is confronted with a technologically advanced adversary or forced to deny the objective of an opportunistic aggressor in a second region while engaged in a major contingency.”103

This statement refers to a sizing construct that enables the U.S. military to win a major contingency operation in one region of the world while holding off or deterring another adversary from creating another major engagement. Note that this sizing construct is below the one prescribed in this Index: one that would enable the U.S. military to win two major operations nearly simultaneously.

**Capability**

Scoring the U.S. Navy’s capability is not just a matter of 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.

This year, the Navy will retire its entire fleet of Oliver Hazard Perry-class guided missile frigates. The Perry-class is to be replaced by the new Littoral Combat Ship (LCS), but some naval analysts have suggested that the LCS lacks the firepower of the frigate.104 In 2015, the Navy modified its LCS program to add more firepower to future hulls, and it will be referring to these upgunned LCSs as frigates beginning in FY 2019.105 This modification resulted from a restructuring of the LCS program initiated in 2014 by Secretary of Defense Chuck Hagel. The upgrades that the Navy says will give this future block of LCS/frigates capabilities closer to those of the Perry-class frigates include “[o]ver-the-horizon surface to surface missile and additional weapon systems and combat system upgrades” and “increased survivability [through] incorporating additional self-defense capabilities and increased hardening of vital systems and vital spaces.”106

On March 31, 2015, the final Tarawa-class amphibious ship, the USS Peleliu, was decommissioned.107 The Austin-class amphibious ships 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 attempting to put the Ticonderoga-class cruiser fleet into temporary layup status in order to extend this class’s fleet service time into the 2030s, even though these ships average 24.2 years out of an expected 35-year service life.108 Early 2015, for the second year in a row (after Congress pushed back on the 2014 attempt), the Navy proposed a plan to put some of these cruisers in temporary layup status. The proposal issued in the Navy’s FY 2016 budget request would mean that “two cruisers would enter in a modernization cycle each year, [and] no cruisers will remain in layup for more than four years with no more than six cruisers out of service at one time,” according to Rear Admiral William Lescher, Deputy Assistant Secretary of the Navy for Budget.109 Driven by budget shortfalls, this plan is an attempt (as was the previous year’s) to keep 11 of the 22 commissioned cruisers in service at all times through 2034.110 There is currently no program to replace the Ticonderoga-class cruisers; a program initiated in FY 2001, called “CG(X),” was to yield a replacement cruiser vessel, but it was canceled in FY 2011 after it was deemed too expensive.111

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 other ships that the Navy sails are also legacy platforms. Of the 18 classes of ships in the Navy, only seven are currently in production. For example, 72 percent of the Navy’s attack submarines are Los Angeles-class submarines, an older platform that is being replaced with a more modern and capable Virginia-class.112 This will shift as the Navy continues to purchase more ships.

The procurement of ships is a critical aspect of meeting Navy capacity requirements, maintaining ship capabilities, and maintaining the industrial capacity to build any warships. The Navy plans to procure 48 ships between FY 2016 and FY 2020, including 14 battle force ships in FY 2016 alone.113 The procurement of 10 Arleigh Burke-class DDGs (two per year) and 10 Virginia-class SSNs (two per year) and funding for the final nine LCS (three per year in FY 2016–FY 2018) along with the upgraded frigate (FF) variants will also be prioritized and executed in accordance with the 2016 budget.114 Current procurement plans also call for securing the first LX(R), the amphibious ship replacement for the LSD; a 12th LPD (landing platform/dock); four Fleet Oilers; and four Fleet salvage ships.115

Modernization programs supplement procurement plans and 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. Ship modernization programs as they currently stand are problematic because they do not “keep pace to deal with high-end adversary weapons systems by 2020.”116 The CBO reported in 2015 that to reach its procurement goals, the Navy would need to increase spending on shipbuilding by one-third over what it has spent per year during the past
30 years.\textsuperscript{117} It is worth noting that this assessment was for the Navy’s goal of a 306-ship Navy, which is lower than the previous determination of 313 ships and lower than the current requirement of 308; it is also well below this Index’s prescribed fleet size of 346 ships.

Because ships take such a long time to build and only a few shipyards are capable of building them, and because 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.\textsuperscript{118} According to the current 30-year plan, the Navy will reach its 308-ship requirement by FY 2022.\textsuperscript{119}

However, the 30-year shipbuilding plan is not limited to programs of record and assumes procurement programs that have yet to materialize. For that reason, it is often considered optimistic. For example, the goal of 308 ships stated in the Navy’s most recent 30-year plan includes an objective for 12 Ohio-class replacement submarines, the SSBN(X), which will require an average of $17.2 billion a year in shipbuilding costs from 2020–2035.\textsuperscript{120} This is something that the Navy will have difficulty maintaining as it struggles to sustain, overhaul, modernize, and eventually retire the remainder of its legacy SSBN fleet.

The service is planning to acquire the first SSBN(X) in FY 2021, with advanced procurement funding starting in FY 2017.\textsuperscript{121} The Government Accountability Office (GAO) reported that total program acquisition costs will be about $95.8 billion.\textsuperscript{122} According to the Congressional Research Service, “The Navy in January 2015 estimated the average procurement cost of boats 2 through 12 in the Ohio replacement program at about $5.2 billion each in FY2010 dollars.”\textsuperscript{123} Based on the historical average, the Navy will have to spend more than a third of its shipbuilding budget on one SSBN(X) hull each year that it procures one.\textsuperscript{124} 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—well short of the 48 attack submarines the Navy requires. At this current rate, assuming that the Seawolf-class has been retired, there will be an 18-attack submarine shortfall in the Navy’s 308-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.\textsuperscript{125} Similarly, the Navy plans to replace the 14 aging Ohio-class SSBN with 12 SSBN(X).\textsuperscript{126} 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. As discussed above, the LCS and its follow-on, which will be called a frigate, are intended to make up this shortfall with a procurement of 52 total projected LCS/frigates.

Timing for the small surface combatants will be another issue. While the LCS/frigate procurement has been scheduled, ship delivery will not be rapid enough to fill small surface combatant requirements entirely.

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 and are being considered for upgrades to improve their respective 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, as mentioned earlier, received funding for one additional hull (which the Navy requested be procured in FY 2016) but is not likely to continue beyond 12 ships of this class.\textsuperscript{127}

On the other hand, the Ford-class aircraft carrier, America-class amphibious ship, Zumwalt-class (DDG-1000) destroyer, and Littoral Combat Ship have had varying degrees of difficulty in cost overruns. The Zumwalt class was essentially relegated to an experimental order, having been reduced from a projected fleet of 32 hulls to just 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. Both the America-class
amphibious ship and the Littoral Combat Ship also face 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. It should be noted that the LCS program was able to reduce overall costs in 2015, as it was reported that the cost per hull has been reduced by a third since the first hull in class was built.128

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 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.129 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 already have 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 (all F/A-18 variants 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 260 F-35Cs (along with 80 F-35Bs for the Marine Corps, discussed in the section on that service)120 to replace a current inventory of 455 F/A-18 A–Ds.131 The F-35 is supposed to be a more capable aircraft relative to the F/A-18, but at 260 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 faces development problems. The system has been grounded because of engine problems, and software development issues have threatened further delay. The aircraft also has 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. Admiral Greenert stated in 2015 that this delay, combined with unforeseen higher operational tempo on the existing fighter fleet caused by strikes against ISIS, is leading to a possible fighter shortfall of 36 aircraft.132 This shortfall in turn has led the Navy to consider extending the service lives of its legacy F/A-18 C/D Hornet aircraft.

The Navy’s other aircraft programs, EA-18G and E-2D, have been relatively successful. The EA-18G program, which had completed its planned procurement of 135 aircraft in FY 2014, added 15 aircraft in FY 2015 out of 22 it had sought through that fiscal year’s “unfunded priorities” list.133 The Navy included 12 F/A-18F Super Hornets in its FY 2016 list of unfunded priorities that the service explained could be “built…to be converted to EA-18G Growler electronic attack aircraft if necessary.”134 DOD has also established an “Electronic Warfare (EW) Executive Committee” that is currently assessing, among other issues, the potential necessity of future Growlers.135 However, the FY 2016 Navy budget request did not seek additional Growlers.136 The E-2D program is on a steady procurement schedule, with the Navy having successfully procured its requested level of five aircraft each in FY 2014 and FY 2015.

Readiness

Although the Navy can still deploy forces in accordance with GFMAP requirements, various factors indicate a decline in readiness over the past year. Admiral Michelle Howard, Vice Chief of Naval Operations, reported that “Navy readiness is at its lowest point in many years,” which can be attributed chiefly to budget reductions.137 Admiral Greenert acknowledged that continued cuts under BCA limits “compelled us to reduce both afloat and ashore operations, which created ship and aircraft maintenance and training backlogs.”138 As a result, unit deployments were also extended, exacting a cost not only on the service life of the ship, but also on the resiliency of the sailors assigned to the vessel.139

To support readiness, the Navy synchronizes maintenance and modernization with the fleet training required to achieve GFMAP objectives utilizing the Fleet Response Plan (FRP). This force generation plan has been used by the Navy effectively since its implementation in 2007, but “continued employment of our contingency response units...
limited their availability to complete required maintenance and training, negatively affecting overall readiness.

The GAO published a report in May 2015 that identified readiness challenges that forward-stationed ships are facing due to budget shortfalls. The GAO specifically found that:

[C]asualty reports—incidents of degraded or out-of-service equipment—have doubled over the past five years and that the material condition of overseas-homeported ships has decreased slightly faster than that of U.S.-homeported ships.... GAO also found that the high pace of operations the Navy uses for overseas-homeported ships limits dedicated training and maintenance periods, which has resulted in difficulty keeping crews fully trained and ships maintained.

The GAO also commented generally on the gap between demand for naval presence with a diminishing supply of ships: “To meet the increasing demands of combatant commanders for forward presence in recent years, the Navy has extended deployments; increased operational tempo; and shortened, eliminated, or deferred training and maintenance.”

The effects of these degradations in training and maintenance, the report argues, could include the failure of ships to reach their intended service lives in the future.

Admiral Greenert has indicated that over the past few years, although the Navy has been able to deploy one Amphibious Ready Group (ARG) and one Carrier Strike Group (CSG) at all times (even under periods of unforeseen budget reductions such as those caused by the BCA), this has resulted in reductions in the readiness of non-deployed forces. Specifically, the Navy has a goal of being able to surge three ARGs and three CSGs, but maintenance and training delays have reduced this capability. Furthermore, Greenert acknowledged at a hearing in March 2015 that budget challenges have forced the Navy to lengthen deployments to provide the same amount of global presence.

While specific readiness figures are scarce, this Index assumes that FY 2015 readiness levels are somewhat lower than those of the previous year, meaning that they are still below where they should be. However, there is not enough information to quantify the change in readiness from last year to this one beyond the Navy’s own statements about still meeting baseline mission requirements.

Of note, while the Navy is still able to forward deploy a third of its fleet, the total fleet reduction has caused a subsequent reduction in global presence (from 104 to 95 as reported by CNO Greenert). It is worth noting again that the Navy’s own readiness assessments are based on the ability to execute a strategy that assumes a force sizing construct that is smaller than the one prescribed by this Index.

The 2015 Index reported on the Navy’s readiness status as follows:

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.”

The Navy did not officially issue an update to the status discussed in the previous paragraphs. However, Admiral Greenert did state that, “Since 2013, many CSGs, ARGs, and destroyers have been on deployment for 8-10 months or longer. This comes at a cost to the resiliency of our people, sustainability of our equipment, and service lives of our ships.”

The need to stretch deployments and defer maintenance is likely caused in part by the reduced number of ships deployed while the Navy’s presence requirement has not been reduced.
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. This 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 the necessary global presence.

On the other hand, the Navy also must be able to fight and win wars. In this case, the expectation is to be able to fight and win two simultaneous or nearly simultaneously 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. Nevertheless, 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 (BUR) 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.

The 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 each document suggests 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” (ARGs). 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 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 current battle forces fleet capacity of 271 ships retains a score of “marginal,”
as was the case in the 2015 Index. However, as mentioned above, the fleet size has significantly declined from the previous Index assessment and continues to trend downward. Given the CBO’s assessment that the Navy will continue to underfund its shipbuilding programs, and in view of the impending need for a ballistic missile submarine replacement that could cost nearly half of the current shipbuilding budget per hull, the Navy’s capacity score could fall to “weak” in the near future.

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 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 categorized by the government as MDAPs.

Readiness Score: Marginal

The Navy’s current readiness score has dropped from “strong” in the 2015 Index to “marginal.” This assessment combines two major elements of naval readiness: the ability to consistently provide the required levels of presence around the globe and surge capacity. As elaborated below, the Navy’s ability to maintain required presence in key regions is “strong,” but its ability to surge to meet combat requirements ranges from “weak” to “very weak” depending on how one defines the requirement. In both cases—presence and surge—the Navy is sacrificing long-term readiness to meet current demand.

The Navy reported that it continues to meet GFMAP goals but at the cost of future readiness. The GAO reported in May 2015 that “to meet the increasing demands of combatant commanders for forward presence in recent years, the Navy has extended deployments; increased operational tempos; and shortened, eliminated, or deferred training and maintenance.” Furthermore, as the Navy seeks to provide the same amount of forward presence with a smaller fleet through overseas home-porting, the GAO has found that “this additional time is available primarily because training and maintenance periods are shorter than those provided for ships homeported in the United States.”

While forward-deployed ships do not fully represent the total fleet, the Navy has indicated in other ways that its readiness could be compromised in the near future. Admiral Howard testified in March 2015 that “we continue our efforts to rebuild the workforce in our public depots—both shipyards and aviation readiness centers—and reduce the number of lost operational days, but it will take years to dig out of a readiness hole.” She explained that the Bipartisan Budget Act of 2013 had alleviated some of the Navy’s funding concerns wrought by the Budget Control Act of 2011 but that the Navy has “not yet recovered from the readiness impact of over a decade of combat operations.”

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.

While it has been reported that congressional support for increases over sequestered funding levels through the BCA and subsequent authorizations and appropriations in FY 2013 and FY 2014 has helped to stabilize readiness, the Navy, as Admiral Howard noted, has “not yet recovered from the readiness impact of over a decade of combat operations.” Furthermore, the USN reports that “it will require several years to fully recover the capability to rapidly respond to COCOM requirements for a major contingency.” However, readiness of naval expeditionary combat forces (to include COCOM requirements) has improved “significantly” over prior years, as baseline funding in FY 2016 will cover 80 percent of the enduring requirement, with OCO funding covering an additional 15 percent.

Therefore, the Navy’s readiness as it pertains to providing global presence is rated as “strong.”

Another element of naval readiness is the ability to surge forces to respond to a major contingency. As discussed above, the Navy’s goal is the ability to surge three CSGs and three ARGs for a contingency...
operation, three times the level it is currently capable of deploying. Admiral Greenert stated in 2015 that “we might be able to recover from the accumulated backlogs by 2018 for our [CSGs] and by 2020 for our [ARGs]” to deploy three of each, but only if there is stable funding and no major contingency occurs over that time frame.\textsuperscript{162} Therefore, the Navy is operating at a third of its own prescribed ability to surge to meet a regional contingency operation. This yields a surge capacity score of “weak.”

Since the \textit{Index of U.S. Military Strength} uses the two-MRC construct as its benchmark level of necessary military force, the Navy would actually need to be able to surge forces to a level higher than three each of CSGs and ARGs. However, doubling the Navy’s surge capacity requirement to account for this is an oversimplification, as not enough public information exists to assess how much surge capacity the Navy would require to engage in a second contingency. Therefore, this \textit{Index} notes that the Navy must be able to surge remaining forces if the U.S. finds itself responding to a second MRC but does not attempt to determine or count this additional level in its scoring.

\textbf{Overall U.S. Navy Score: Marginal}

The Navy’s overall score for the 2016 \textit{Index} is “marginal,” the same as the previous year. This was derived by aggregating the scores for capacity (“marginal”); capability (“weak”); and readiness (“marginal”). However, given the continued decline in the Navy’s fleet size without a coinciding reduction in presence requirements, Navy officials’ increasingly dire assessment of readiness challenges, and few signs of funding increases to correct these trends, the Navy’s score could degrade to “weak” in the near future if it does not reverse course.

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 & VERY WEAK & WEAK & MARGINAL & STRONG & VERY STRONG \\
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Capacity & & & ✔ & & \\
Capability & ✔ & & & & \\
Readiness & & & ✔ & & \\
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OVERALL & & & ✔ & & \\
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U.S. Air Force

The U.S. Air Force (USAF) provides military dominance in the domains of air and space, enabling the Joint Force to project power quickly anywhere in the world at any time. The Air Force maintains that it must be able to respond rapidly to contingencies across the world to “guarantee the global freedom of movement and access that Americans have come to expect” and to project our nation’s power, influence, and reach.\textsuperscript{163}

To support and defend America’s global interests along with the Joint Force, the Air Force focuses on five main missions:

- Air and space superiority;
- Intelligence, surveillance, and reconnaissance (ISR);
- Mobility and lift;
- Global strike; and
- Command and control (C2).

The Air Force has used the 2012 Defense Strategic Guidance (DSG) as its framework for determining investment priorities and posture. As a result of the DSG and fiscal constraints, the Air Force has “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,”\textsuperscript{164} a goal reiterated in the President’s fiscal year (FY) 2016 budget request.\textsuperscript{165} But while the Air Force’s fleet has been cut intentionally to maintain capability, the FY 2016 Air Force Posture Statement acknowledges that continued cuts in capacity will result in a loss of capability: “[W]e have reached a point where the two are inextricable; lose any more capacity, and the capability will cease to exist.”\textsuperscript{166}

**Capacity**

Due to the constrained fiscal environment of the past few years, the Air Force continues to prioritize capability over capacity. The force also has made clear that near-term reductions will be made in lift, command and control, and fighter aircraft to ensure that its top three modernization programs—the F-35A, Long-Range Strike Bomber (LRS-B), and KC-46A—are preserved.\textsuperscript{167} The USAF is now the oldest and smallest in its history, and the problem is growing as the demand for air power continues to grow.\textsuperscript{168} For FY 2015, the Air Force was granted an authorized end strength of 312,980 active airmen, 67,100 reservists, and 105,000 guardsmen.\textsuperscript{169} Between the active and reserve components, it fields 5,433 aircraft in the total active inventory (TAI),\textsuperscript{170} including 54 total fighter squadrons.\textsuperscript{171} In the active component, the Air Force retained 40 combat coded squadrons during FY 2015.\textsuperscript{172}

The Air Force’s capacity in terms of number of aircraft has been on a constant downward slope since 1952.\textsuperscript{173} Unlike some of the other services, the
Air Force did not grow during the post-9/11 build-up. Rather, it got smaller as older aircraft were retired and replacement programs, such as the F-35, experienced successive delays in bringing new aircraft into the fleet. This reduction in capacity is expected to continue in the future because of ongoing budgetary pressure. Under BCA-mandated spending caps, the Air Force would shrink to 26 tactical aircraft (TACAIR) squadrons, a far cry from the 133 active fighter squadrons during Operation Desert Storm.

The foregoing figures 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 that are tasked primarily with attacking ground targets and providing close air support). “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 5,433 aircraft includes all manned and unmanned aircraft in the Air Force’s inventory. This Index 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. Additionally, four years ago, the Air Force assessed that a fighter force structure of 1,200 primary mission aircraft was necessary. More recently, the service determined that the requirement could be reduced by 100, although the Air Force would take on more risk as a result. Divestments in FY 2015 placed additional risk on the Air Force and left the fighter force structure significantly below this requirement. The continuation of constrained funding levels will only deepen the shortage of fighters, degrading “vital air operations” and “test and training expertise.”

### Capability

Per the 2012 DSG and budget constraints, the Air Force is offsetting cuts in future capacity to preserve present 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. This strategy is associated with another chief concern: maintaining the service and support required for sustaining ongoing operations in Afghanistan, Iraq, and Syria while preparing for traditional contingencies, such as state-vs.-state conflict. Essentially, the Air Force is seeking to maintain the balance required for full-spectrum operations, from relatively simple operations in uncontested airspace to complex, multi-layered operations in anti-access/area denial (A2/AD) environments.

The state of aircraft capability includes not only the incorporation of advanced technologies, but also the overall state of the inventory, with age being a large determinant. According to the USAF, the average age of its aircraft is 27 years, and some fleets, such as the B-52 bomber fleet, are much older. Most aircraft have an original life span of 20 to 30 years, determined largely by estimated flying hours—more flying equals more stress on an aircraft—and dependent on the severity of the flying environment. Thus, without modification, much of the Air Force’s capability is nearing the end of its expected life cycle. Although service life extension programs can lengthen the useful life of some aircraft, the Air Force cannot keep an old aircraft going forever. 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.

On average, the Air Force’s main combat platforms (fighter aircraft, bombers, mobility aircraft, 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 over 90 percent of its estimated 30-year service life (the average age of the F-15C/D is just over 29 years). 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 (comprising 50 percent of the fighter fleet at 913 aircraft) has consumed nearly 80 percent of its expected life span and has an average age of approximately 23 years. The KC-135 comprises 87 percent of the Air Force’s tankers and is over 50 years old on average. 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 (362 of 457) of the Air Force’s ISR aircraft are now unmanned aerial vehicles (UAVs), which are relatively young.
(though they have shorter life spans than manned aircraft) and less expensive to procure, operate, and maintain. Maintaining the service’s shift to predominantly unmanned ISR aircraft will depend on fielding enhanced sensors on the RQ-4 Global Hawk platform to make it as capable as legacy manned U-2 aircraft. The Air Force stated in February 2015 that the Global Hawk was able to reduce costs such that it is now cheaper per flying hour to operate.

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. Going into FY 2016, the Air Force has structured its budget to preserve funding for its top acquisition priorities: the F-35A Joint Strike Fighter, the KC-46A Pegasus aerial refueling and strategic military transport aircraft, and the Long Range Strike–Bomber (LRS-B).

The Air Force’s number one priority remains the F-35A. It is the next-generation fighter scheduled to replace all legacy A-10, F-15, and F-16 aircraft. 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, F-15s, and A-10s combined (1,610). The Air Force has not explicitly stated the rationale behind its F-35A procurement plan (beyond reporting a one-to-one replacement of all F-16, A-10, and F-117 aircraft in service as of 2001), and this has led to speculation that the F-35A could also replace the F-15.

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 159 F-22s, and there are concerns about what will fill this gap when the F-15 is eventually retired. Fulfilling the operational need for fighters could be further strained in the near term, as the F-22 retrofit—a mix of structural alterations to 162 aircraft needed for the airframe to reach its promised service life—has been forecasted to run through 2021, a year later than previously predicted. As a result of the retrofit, only 62 percent of the mission fleet is available. The F-35A was not designed primarily for air-to-air combat; rather, like the F-16s and A-10s that it is replacing, the plane is suited for attack missions against ground targets, with the F-22 shouldering the air-superiority mission.

Like the F-35B and F-35C (the Marine Corps and Navy variants, respectively), the F-35A has experienced a host of problems (including technological delays, cost growth, production delays, and quantity reductions caused by budget cuts) that have slowed development. As a result, the initial operating capability (IOC) date was pushed from 2013 to 2016. In addition, the test program suffered further delays in 2014 due to an engine problem. With regard to software, flight testing for Block 2B is nearly completed, and Block 3i is still undergoing tests as well. Current projections assess that Block 3F—full warfighting capability—will be completed about half a year later than planned. Given the age of the aircraft that the F-35A will be replacing, there is little room for further slippage in the F-35 program.

A second top priority for the USAF is the KC-46A air refueling tanker aircraft, a replacement for the legacy KC-135. Both the Air Force and U.S. Transportation Command have stated that replacing the KC-135 is “their highest priority.” The KC-46A is still in development and is also experiencing delays, which is troublesome given the advanced age (averaging 52 years) and condition of the current KC-135 inventory. In addition, the KC-46A program of record is for 179 aircraft (with current program plans for delivery of 70 aircraft by FY 2020), indicating that this system will replace less than half of the current tanker inventory of 391 aircraft (though a one-to-one replacement of legacy platforms is not inherently necessary for weapons systems).

The third and final priority for the USAF from an acquisition perspective is the Long-Range Strike Bomber (LRS-B), the service’s next-generation deep-strike platform intended to replace the B-52 Stratofortress and the B-1B Lancer by the mid-2020s (B-2s are to be replaced later). The LRS-B is still in the development phase, and continued funding must be maintained so that the Air Force has a bomber with deep-strike capabilities that can penetrate “highly contested environments.” The USAF expects to announce the contract award for the LRS-B in September 2015, and current plans include the acquisition of 80–100 new bombers at a cost of approximately $550 million per plane.

**Readiness**

The Air Force’s readiness is affected by several inputs: training (such as flying hours); weapon system sustainment; facilities; and installations. While all are critical, weapon systems sustainment
is becoming an area of particularly heightened concern because, as a result of the ongoing air campaigns in the Middle East, munitions are being used faster than they can be replaced. Air-to-Surface weapons such as Stand-Off, Direct Attack, and Penetrators are short of current inventory objectives, and the concurrent shortage of Air-to-Air weapons could lead to an increase in the time needed to gain and maintain air superiority in future environments, particularly highly contested ones.

The decision to reduce the size of the Air Force to minimum COCOM requirements now requires that the entire force must be ready at all times, which means there will be no strategic reserve capacity for the service to respond to unanticipated requirements. Maintaining a very high state of readiness is necessary if the Air Force is going to continue to be the world’s dominant air superiority force. By the Air Force’s own assessment, without unequivocal air superiority, American influence is at risk of being diminished, and the U.S. military will be forced to radically change the way it goes to war.

According to the Air Force, readiness has been declining since 2003. This trend was further aggravated in FY 2013 by the implementation of cuts under the Budget Control Act of 2011. 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 funding for readiness, but not at a rate to make up completely for cuts in FY 2013, and the shortfalls in readiness have persisted into FY 2015. This situation illustrates how difficult it is to regain lost readiness even after short-term divestments. According to Air Force Vice Chief of Staff General Larry Spencer, less than 50 percent of the service’s combat air forces meet full-spectrum readiness requirements.

The Air Force claims that it does not have the excess capacity to make cuts without also reducing capability. If requirements continue to increase, the Air Force “will have to make difficult decisions on mission priorities and dilute coverage across the board.” Furthermore, as legacy aircraft continue flying, maintenance costs rise, and the demand for weapons system sustainment increases. As a result, reduced funding for aircraft modernization and sustainment degrades capabilities and lowers readiness levels. The Air Force’s FY 2016 budget submission seeks to strike a balance among capability, capacity, and readiness with the goal of achieving full-spectrum readiness by 2023.

In addition to 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 takes 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.”

A key aspect of building unit readiness is sufficient training. In order to reach full-spectrum readiness, the Air Force must execute its flying hour program successfully and dedicate enough time and resources to training. The Air Force’s “high operations tempo” and worsening deployment to dwell ratios negatively affect “reconstitution and training cycles” and compromise its efforts to recover lost readiness.

**Scoring the U.S. Air Force**

**Capacity Score: Very 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 in the active component to execute one MRC. Based on 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 active fighter aircraft to account for the 20 percent reserve necessary when considering availability for deployment and the risk of employing 100 percent of fighters at any one time.

- **Two-MRC Level:** 1,200 fighter aircraft.
- **Actual 2015 Level:** 1,113 fighter aircraft.
Based on the above figure, the Air Force is operating at 93 percent of the benchmark requirement of 1,200, and its capacity is therefore scored as “very strong.” The 113 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 needed to reach the benchmark.

This increase in capacity score over the 2015 Index is due to an additional 15 F-35As becoming operational, the rejection of USAF plans to retire A-10 aircraft, and the decision to stretch the service lives of other fighter aircraft. Since the F-35A was to replace many of these legacy platforms, the decision not to retire them (e.g., the A-10) has resulted in a net increase in the Air Force’s fighter and attack capacity.

**Capability Score: Marginal**

The Air Force’s 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.” These scores have not changed from the 2015 Index’s assessment. However, continued concerns about the F-35 program’s progress toward replacing legacy aircraft effectively could cause the USAF’s capability score to decline in the near future.

**Readiness Score: Marginal**

The Air Force scores “marginal” in readiness in the 2016 Index, a reduction from the previous Index’s score of “strong.” This is based primarily on the Air Force’s reporting that less than half of its combat air forces met full-spectrum readiness requirements in 2015. While it should be prepared to respond quickly to an emergent crisis and retain full readiness of its combat airpower, the Air Force has been suffering from degraded readiness since 2003, and the implementation of BCA-imposed budget cuts in FY 2013 has continued to exacerbate this problem into 2015. While the USAF’s response ability appears to have been insulated from budget cuts, maintaining full readiness has proved challenging. Similar to the other services, the USAF was able to make up some of its readiness shortfalls under the FY 2015 budget, but given the Air Force’s poor readiness assessment, significant further improvement is needed.

With so little information in the public domain about the current state of readiness in FY 2015, statements such as the foregoing must be heavily weighted. This Index assumes that today’s readiness levels are better than those in FY 2013 when 13 combat-coded squadrons were grounded due to funding shortfalls, but that they are still suboptimal.

**Overall U.S. Air Force Score: Marginal**

The Air Force is scored as “marginal” overall. This is an unweighted average of its capacity score of “very strong,” capability score of “marginal,” and readiness score of “marginal” and is a decline from the 2015 Index score of “strong,” driven primarily by degradation in capability and readiness.
The U.S. Marine Corps (USMC) is the nation’s expeditionary armed force, positioned and ready to respond to crises around the world. Marine units assigned aboard ships (“soldiers of the sea”) or at bases abroad stand ready to project U.S. power into crisis areas. Marines also serve in a range of unique missions, from combat defense of U.S. embassies abroad under attack to operating the President’s helicopter fleet. Although Marines have a wide variety of individual assignments, the focus of every Marine is on combat; every Marine is first a rifleman. The 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. Even though force levels have been decreasing in Afghanistan as operations draw down, the military will maintain 9,800 troops in Afghanistan to support its mission in 2015, and the Marines will make up a portion of those troops. Worldwide, over 31,000 Marines are forward deployed and engaged. Throughout the year, Marines engage in various operations elsewhere; for example, they supported the evacuation of the U.S. embassy in Sana’a, Yemen, in 2015.

Per the Defense Strategic Guidance (DSG), maintaining the Corps’ crisis response capability is critical. Thus, given the fiscal constraints imposed, the Marines have prioritized “near-term readiness” at the expense of other areas, such as capacity, capability, modernization, home station readiness, and infrastructure. This trade-off is a short-term fix to meet immediate needs: Over the longer term, the degradation of investment in equipment will lead to lowered readiness.

Capacity

The Marine Corps has managed the reduction in funding by cutting capacity. The Corps’ measures of capacity are similar to the Army’s: 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 fiscal year (FY) 2012 to 184,100 in FY 2015. Of these 184,100 Marines, 1,400 were funded from the Overseas Contingency Operations (OCO) budget. For FY 2016, the Marine Corps requested a pause in capacity cuts (to remain at an end strength of 184,000) in order to reduce the “impact on deployment to dwell ratios” and “assess the impact of its four[-]year drawdown.” The drawdown is expected to continue in FY 2017, when the Corps will reach an “enduring” end strength of 182,000 Active personnel, funded entirely from the base budget. The Department of Defense estimated in 2014 that if sequestration cuts occurred in FY 2016, end strength would be cut further to 175,000 by FY 2017. With a force of that size, the USMC would be unable to meet the requirements of the DSG and, according to General Joseph Dunford, Commandant of the Marine Corps, a new strategy would need to be developed.
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 23 infantry battalions in the Active Component in FY 2015, down from 25 in FY 2014. While funding at the requested levels for FY 2016 would yield an additional Active infantry battalion, under full sequestration, USMC end strength would be able to support only 21 infantry battalions, which, according to General Dunford, would leave the USMC “with fewer active duty battalions and squadrons than would be required for a single major contingency.”

Marine Aviation units have been particularly stressed by insufficient funding. Although operational requirements have not decreased, fewer Marine aircraft are available for tasking or training. For example, the number of active component squadrons (including both fixed wing and rotary wing aircraft) has decreased from 58 in 2003 to 55 in 2015. Recently, it was announced that three of these active component squadrons would transition to the reserve component, meaning that the Corps will have 52 active squadrons for the foreseeable future. Approximately 33 percent of these 52 active duty squadrons are deployed, and 17 percent are in a pre-deployment phase. Any reduction in Marine Corps aviation capability has a direct effect on overall Corps combat capability, as the Corps usually fights with its ground and aviation forces integrated as Marine Air-Ground Task Forces (MAGTFs).

Additionally, the current inventory of non-commissioned officers and staff non-commissioned officers does not meet USMC force structure requirements. This will pose readiness challenges for the Corps as the shortage of “small unit leaders with the right grade, experience, technical skills and leadership qualifications” grows.

In 2010, the USMC determined that its ideal force size would be 186,800 in light of the requirements of the President’s National Security Strategy. However, given the budget pressures from the Budget Control Act (BCA) of 2011 and the newer 2012 DSG, 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 (D2D) time ratio is 1:3 (seven months deployed for every 21 months at home), which is possible with 186,000 troops. The “fundamental difference” between that optimal force size and an active end strength of 182,000 is a lower D2D ratio of 1:2, which translates to roughly seven-month deployments separated by stretches of 14 months at home. Under the budget caps imposed by the BCA of 2011, capacity will be reduced even further, and the dwell ratio for the Marine Corps could fall to 1:1. This increase in deployment frequency would worsen the degradation of readiness as 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 the Navy’s section of the Index. The Marine Corps is focusing on “essential modernization” and emphasizing programs that “underpin our core competencies,” making the Amphibious Combat Vehicle (ACV) and the F-35 Joint Strike Fighter (JSF) programs its top two priorities.

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 36 and 24 years, respectively. Comparatively, the Corps’ M1A1 Abrams inventory is 14 years old with an estimated 34-year life span, and its fleet of light tactical vehicles such as HMMWs (“Humvees”) is relatively young, averaging six years.

The Corps’ main combat vehicles all entered service in the 1970s and 1980s, 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 improvised explosive devices (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 264 F/A-18 A–Ds and 27 EA-6Bs in its primary mission aircraft inventory (including one reserve squadron), 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 F-35Cs enter service to replace the Harriers and most of the Hornets.

The AV-8B Harrier, designed to take off from the LHA and LHD amphibious assault ships, will be retired from Marine Corps service in 2026. Before its retirement, the AV-8B will receive near-term capability upgrades in 2015 and 2017. The Corps declared its first F-35B squadron operationally capable on July 31, 2015, after it passed an “Operational Readiness Inspection” test. Reservations remain, however, regarding the platform’s reliability following sea trials aboard the USS Wasp. Michael Gilmore, Director of Operational Test and Evaluation for the U.S. Department of Defense, reported reliability figures at less than 50 percent during the readiness inspection test.

The Marine Corps has one Major Defense Acquisition (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 Army retains overall responsibility for JLTV development through its Joint Program Office. The Marines intend to purchase 5,500 vehicles (10 percent of a total of 54,599) and acquisition of the JLTVs should be completed by FY 2022. The program is still in development and previously experienced delays due to a change in requirements, a contract award protest, and concerns regarding technical maturity. In 2014, the Corps cancelled the HMMWV Sustainment Modification Initiative, which would have upgraded 13,000 vehicles, in order to prioritize JLTV funding. Although the Marine Corps has indicated that the JLTV will not be a one-for-one replacement of the HMMWV, there are concerns that reduced procurement will create a battlefield mobility gap for some units.

The JLTV’s FY 2015 plans anticipate that a Production and Deployment Phase Approval decision will be made in the fourth quarter, after which Low Rate Initial Production (LRIP) will follow. Following FY 2015 plans for JLTV, the program awarded a low rate initial production (LRIP) contract, which includes a future option of producing JLTVs for the Marine Corps, to defense contractor Oshkosh. The Marine Corps procured seven JLTVs in FY 2015. The lack of operational detail in the Army’s updated Tactical Wheeled Vehicle Strategy could be an issue for future USMC JLTV procurement and modernization plans. Nevertheless, the USMC expects the JLTV program, consisting of “one infantry battalion fully fielded with the JLTV plus a training element,” to reach initial operational capability in the fourth quarter of 2018.

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 restructuring. The AAV-7A1 was to be replaced by the Expeditionary Fighting Vehicle (EFV), a follow-on to the cancelled Advanced AAV, but the EFV was also cancelled in 2011 due to technical obstacles and cost overruns. The Amphibious Combat Vehicle, which has taken the place of the EFV, is in the development phase and “has been structured to provide a phased, incremental capability.” 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 would be designed primarily to provide enhanced survivability and mobility once ashore.

After restructuring its ground modernization portfolio, the Marine Corps determined that it would combine its efforts by upgrading 392 of its legacy AAVs and continuing development of the ACV in order to replace part of the existing fleet and complement the upgraded AAVs. This would help the USMC to meet its requirement of having armored lift for 10 battalions of infantry. In March 2015, the Marine Corps released its RFP for the ACV program’s engineering and manufacturing development (EMD) phase. Brigadier General Joseph Shrader confirmed that this ACV 1.1 increment would not replace the AAV, but rather would serve to “enhance that capability.”

The ACV 1.1 platform is notable in that it will be an amphibious wheeled vehicle instead of a tracked vehicle, capable of traversing open water only with the assistance of Navy shore connectors such as Landing Craft, Air Cushion Vehicles (LCAC). The ACV 1.2 platform is being planned as a fully amphibious, tracked version. Development and procurement of the ACV program will be phased so that the new platforms can be fielded incrementally alongside a number of modernized AAVs. Plans call for outfitting six battalions with 200 ACVs by 2023 and for modernizing enough of the current AAV fleet.
to outfit four additional battalions, which would allow the Corps to meet its armored lift requirement for 10 battalions. 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 2015, 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 service’s total procurement will consist of 420 F-35s (357 F-35Bs and 63 F-35Cs), and the retirement of AV-8Bs and F/A-18A-Ds will begin after the F-35 enters service. As the F-35 enters into service and legacy platforms reach the end of their service life, the Marine Corps expects a near-term inventory challenge. Specifically, this is due to a combination of reduced JSF procurement, increasing tactical aircraft utilization rates, and shortfalls in F/A-18A-D and AV-8B depot facility production. 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. Probation has since been lifted and the Corps declared initial operational capability (IOC) with its first F-35B squadron, VMFA-121, on July 31, 2015.

Today, the MV-22 program is operating with few problems and nearing completion of the full acquisition objective of 460 aircraft. As of February 2015, the Marine Corps had received 97 Block C MV-22 aircraft and 250 of the 360 aircraft included in the Program of Record. Following deactivation of the final CH-46 squadron in April 2015, the Osprey has replaced the Sea Knight as the USMC’s primary medium lift platform. Currently, there are 13 fully operational capability squadrons to meet these needs, and two additional squadrons are being stood up. The MV-22’s capabilities are in high demand from the Combatant Commanders (COCOMS), and the Corps is adding capabilities such as fuel delivery and use of precision-guided munitions to the MV-22 to enhance its value to the COCOMS.

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. The CH-53K’s first flight has been scheduled for 2015, and the helicopter is predicted to reach initial operational capability in 2019. This time line has been disrupted and now faces the prospect of delay due to problems experienced with the airframe’s gearbox and drive-shaft during ground testing. The FY 2016 request asks for continued RDT&E funding and retains the current Program of Record of 200 CH-53Ks.

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 capacity 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. Even though funding for near-term readiness has been relatively protected from cuts, future readiness is threatened by underinvestment in long-term modernization and infrastructure. As General Dunford has explained, extended or long-term imbalance among the USMC “pillars” of readiness, which address both operational and foundational readiness, “will hollow the force and create unacceptable risk for our national defense.” In order to address readiness challenges more effectively, the Marine Corps is undertaking a comprehensive review of manning and readiness reporting systems and developing a plan to enhance overall readiness during 2015.

In FY 2015, “[o]ver half of home-station/non-deployed units report[ed] unacceptable levels of readiness.” This constitutes about 42 percent of the total USMC force. Personnel and equipment shortages, lower end strength, shorter dwell times, and a scarcity of prepositioned ships have inhibited sufficient training for home-station units and have “degraded full spectrum capability across the Service.” Additionally, Marine aviation is experiencing significant readiness shortfalls. With a smaller force structure and fewer aircraft available for training, aviation units are having difficulty keeping up with demanding operational requirements. Stressed depots, affected by reduced procurement and workforce cuts, are contributing to readiness problems, leaving fewer aircraft available for training or operations. In total, approximately 19 percent of USMC aircraft are unavailable for use, according to Deputy Commandant for Aviation Lieutenant General Jon Davis. The aircraft affected are awaiting “long-term” repairs and spare parts, and their inability to participate in operations has been felt by the Corps.
immediately, as wiring problems kept heavy-lift aircraft from deploying to assist with earthquake relief efforts in Nepal, making it necessary to fill the void by deploying platforms that were less suited to the mission. In particular, some units, such as MV-22 and F/A-18 squadrons, are experiencing deployment ratios below 1:2, exacerbating readiness challenges.

In order to achieve the minimum readiness goal, squadrons must be qualified to perform 70 percent of their Mission Essential Tasks. Deployed squadrons are well-trained and well-resourced, next-to-deploy units, but frequently do not achieve the readiness goal until just before deployment, and non-deployed squadrons face “significant and unhealthy resource challenges” that degrade readiness.

The Corps is operating with slightly less than 64 percent of the number of battalions relative to the two-MRC benchmark. Its capacity is therefore scored as “weak.”

The Corps received scores of “weak” for “Capability of Equipment,” “marginal” for “Age of Equipment” and “Health of Modernization Programs,” but “strong” 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 ACV program and the MPC.

In FY 2015, 42 percent of the USMC experienced degraded readiness. As the nation’s crisis response force, the Corps 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 58 percent of its readiness requirement.

The Marine Corps is scored as “marginal” overall in the 2016 Index. This is the same as the assessment in the previous Index. However, the Corps is at the lower end of this category, and potential further declines in both capacity and readiness signal that this score could drop below “marginal” in the near future.

### 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 for a two-MRC force, not counting Marines that would be unavailable for deployment (assigned to institutional portions of the Corps) or that are deployed elsewhere. 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 end strength of 185,000 being recommended.

- **Two-MRC Level:** 36 battalions.
- **Actual 2015 Level:** 23 battalions.

#### Capability Score: Marginal

- **Age of Equipment**
- **Health of Modernization Programs**
- **Size of Modernization Program**

#### Readiness Score: Marginal

In FY 2015, 42 percent of the USMC experienced degraded readiness.
### U.S. Military Power: Marine Corps

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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 1960s—that were in the stockpile when the Cold War ended rather than take advantage of technological developments to field new weapons that are safer, are more secure, and give the United States improved options for guaranteeing a credible deterrent.

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 composed of many components, some of which are also involved in supporting conventional missions. For example, dual-capable heavy bombers do not fly with nuclear weapons today, although they did routinely until the late 1960s (and are capable of doing so again if the decision should ever be made to resume this practice). Additionally, the nuclear weapons laboratories do not focus solely on the nuclear weapons mission; they also perform a variety of functions related to nuclear nonproliferation, medical research, threat reduction, and countering nuclear terrorism, including nuclear detection.

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.

Additionally, the U.S. nuclear weapons enterprise should be flexible and resilient to underpin the U.S. nuclear deterrent. If the U.S. detects a game-changing nuclear weapons development in another country, the ability of the U.S. nuclear weapons complex to adjust is important.

To this end, 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 are said to be ready within 24 to 60 months. The U.S. preserves some of the upload capability on its strategic delivery vehicles, which means that the nation can decide to increase the number of nuclear warheads on each type of its delivery vehicles. For example, the U.S. Minuteman III intercontinental ballistic missile (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, but even this extended timeline is proving to be a challenge for the National Nuclear Security Administration (NNSA). Successive governmental reports have noted the continued deterioration of technical and diagnostics equipment and the inability to fill technical positions supporting nuclear testing readiness.

The weapons labs are beset by demographic challenges of their own. Thomas D’Agostino, former Under Secretary of Energy for Nuclear Security and Administrator of the NNSA, has 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 designed, developed, and are 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 could well decline with the passage of time, making certification of warhead safety and reliability more difficult as the small changes inherent in a continuing process of refurbishing aging components inevitably cause the weapons to depart from their original tested design envelope.

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 weapons labs to lose their sense of purpose and to feel compelled to reorient their mission focus. Their relationship with the government also evolved in hindering ways. The NNSA was supposed to address these problems but 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 has undermined the morale of the workforce. The issue is so serious that the Congressional Advisory Panel on the Governance of the Nuclear Security Enterprise recommended fundamental changes in the nuclear weapons enterprise’s culture, business practices, project management, and organization. Others propose moving the NNSA to the Department of Defense.

Yet another important indication of the health of the overall force is the readiness of forces that actually operate U.S. nuclear systems. In 2006, the Air Force mistakenly shipped non-nuclear warhead components to Taiwan. A year later, the Air Force transported nuclear-armed cruise missiles across the U.S. without authorization (or apparently even awareness that it was doing so, mistaking them for conventional cruise missiles). 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 the inventory of nuclear weapons, including creating the Air Force 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 success of these changes has been limited. In January 2014, the Air Force discovered widespread cheating on nuclear proficiency exams and charged over 100 officers with misconduct. The Navy had a similar problem, albeit on a smaller scale. The Department of Defense conducted two nuclear enterprise reviews, one internal and one external. Both reviews identified a lack of leadership attention, a lack of resources to modernize the atrophied infrastructure, and unduly burdensome implementation of the personnel reliability program as some of the core challenges preventing a sole focus on accomplishing the nuclear mission.

The Force Improvement Program was initiated and mostly implemented throughout 2014 and into 2015, and the Air Force shifted over $160 million to address the problem with the ICBM mission. The Air Force has also seen an increase in badly needed manpower. If changes in the nuclear enterprise are to be effective, leaders across the executive and legislative branches will have to continue to provide sufficient resources to mitigate readiness and morale issues within the force.

Fiscal uncertainty and a steady decline in resources for the nuclear weapons enterprise (trends that have begun to reverse in recent years) have negatively affected the nuclear deterrence mission. Admiral Cecil D. Haney, Commander, U.S.
Strategic Command (STRATCOM), testified in 2014 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.”

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 conventional and nuclear attacks that threaten American sovereignty, forward-deployed troops, and allies.

U.S. nuclear forces have played an important role in the global nonproliferation regime by providing U.S. assurances to NATO, Japan, and South Korea that 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. Iran continues to be on a path to obtaining a nuclear weapon.

This makes U.S. nuclear assurances to allies and partners ever more important. Should the credibility of American nuclear forces continue to degrade, countries such as South Korea could pursue an independent nuclear option, causing a destabilizing effect across the region.

Certain negative trends could undermine U.S. nuclear deterrence if problems are not addressed. There is no shortage of challenges on the horizon, from an aging nuclear weapons infrastructure and workforce to the need to recapitalize all three legs (land, air, and sea) of the nuclear triad, from 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. Additionally, the United States must take account of adversaries who are modernizing their nuclear forces.

Deterrence is a complex interplay between U.S. conventional and nuclear forces and the psychology of both allies and adversaries that the U.S. would use these forces to defend both the interests of the U.S. and those of its allies. The requirements of nuclear deterrence and nuclear warfighting may be quite different and thus should be considered within their own contexts and then balanced against each other to ensure that the U.S. nuclear portfolio is structured in capacity, capability, variety, flexibility, and readiness to meet both types of demands. In addition, military requirements and specifications for nuclear weapons might be different, depending on different circumstances, who is being deterred, and what they are being deterred from doing.

Due to the complex interplay among strategy, 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 if and when a nuclear or conventional deterrent provided by U.S. forces loses credibility. Nuclear weapons capabilities take years or decades to develop, as does the infrastructure supporting them. The U.S. has neglected its nuclear infrastructure for decades. 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 an outdated and questionable one.

We know that the U.S. is capable of incredible mobilization when danger materializes. 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 advanced capabilities while the U.S. enterprise is relatively static, potentially leaving the United States at a technological disadvantage. This is worrisome 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, nuclear command and control, 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 chemical engineers to maintainers and operators, without which the continuous maintenance of the nuclear infrastructure would not be possible.
The factors selected below are the most important elements of the nuclear weapons complex. They are 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: Strong

U.S. warheads must be safe, secure, effective, and 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” and 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.” Since 1993, reliability has been determined through non-nuclear experiments (that is, without the use of experiments producing nuclear yield); sophisticated calculations using high-performance computers; and related evaluations.

Nuclear warhead and delivery system reliability becomes more important as the number and diversity of nuclear weapons in the stockpile decrease, because fewer types of nuclear weapons leave a smaller margin of error should one type of a weapon be affected by a technical problem that requires the decommissioning of a weapon type or its delivery system. Americans and allies must be confident that U.S. nuclear warheads will perform as expected.

As warheads age, they become less able to perform their mission as expected, and this can complicate military planning significantly. 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.” A plutonium pit is a crucial component of a nuclear weapon and with life extension programs introducing new components to warheads whose radiological effects are not fully known, the level of uncertainty has increased.

The United States has the safest stockpile in the world, but 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. 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 Department of Energy (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 more subjective, albeit based on experience and non-nuclear tests 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 fixes to those problems. Given that modern simulation is based on nuclear tests that were conducted primarily in the 1950s and 1960s, using testing equipment of that era, there is a great deal that modern testing equipment and computer capability could teach about nuclear physics.

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.” By 2005, a consensus emerged in the NNSA, informed by the nuclear weapons labs, that it would “be increasingly difficult and risky to attempt to replicate exactly existing warheads without nuclear testing and that creating a reliable replacement warhead should be explored.” When the U.S. did nuclear testing, it was frequently found that small changes in the tested configuration of a weapon 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.

In fiscal year (FY) 2014, the NNSA met its goal of maintaining 100 percent of the U.S. nuclear stockpile as safe, secure, reliable, effective, and available.

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.
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.” 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.” 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, continues to be uncertain. As a result, this indicator is graded “strong.”

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 disgorgement of the multiple re-entry vehicle warheads from the missile, and the accuracy of the final re-entry vehicle in reaching its target.

The U.S. conducts ICBM and submarine launched ballistic missile (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. However, potential challenges are on the horizon. The United States is not seriously considering modernization of delivery platforms infrastructure, including old communication cables, computers, and silos.

Grade: U.S. ICBMs and SLBMs are flight tested annually, and these tests were successful in 2014. To the extent that data from these tests are publicly available, they provide objective evidence of the delivery systems’ reliability. The aged systems, however, occasionally have reliability problems. Overall, this factor earns a grade of “strong.”

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 a single new nuclear warhead even though all of its nuclear-armed adversaries are developing new nuclear warheads and capabilities. Since the collapse of the Soviet Union, nuclear weapons and delivery vehicles have not been replaced despite being well beyond their designed service life. This both increases the risk of failure due to aging components and signals to adversaries that the United States is less committed to nuclear deterrence.

New weapon designs could allow American engineers and scientists to improve previous designs and address new military requirements (for example, the need to destroy deeply buried and hardened targets) that have emerged since the end of the Cold War. With new warheads, the safety and security of American weapons could also be enhanced in ways that may not be possible today without nuclear testing.

An ability to work on new weapon designs would also help American experts to remain engaged and knowledgeable and would help to attract the best talent to the nuclear enterprise. 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.” Other nations maintain their levels of proficiency by having their scientists work on new nuclear warheads and possibly conducting very low-yield nuclear weapons tests.
Grade: The lack of plans to modernize nuclear weapons—life extension programs are not modernization—and the 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 grade of “weak.”

Nuclear Delivery Systems Modernization Score: Weak

The age of American 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 correctly. Corrupted systems, defective electronics, or performance degradation due to long-term storage defects (in the case of nuclear warheads) can have serious implications for American deterrence and assurance. If a strategic delivery vehicle cannot be counted on to operate at all times, its deterrence and assurance value becomes significantly reduced.

While the U.S. Air Force and U.S. Navy have plans to replace each leg of the nuclear triad in the next several decades, fiscal constraints are likely to make such efforts unlikely. Existing ICBMs and SLBMs are expected to remain in service until 2032 and 2042, respectively, and new bombers are planned to enter into service in 2023. Budgetary shortfalls are leading to uncertainty as to whether the nation will be able to modernize all three legs of the nuclear triad. Having three different methods of delivering nuclear weapons increases the risk of successful delivery of those weapons and complicates our adversary's efforts to prevent such delivery.

Maintenance issues caused by the aging of American SSBNs and long-range bombers could make it difficult to deploy units overseas for long periods of time or remain stealthy in enemy hotspots. The United States can already send a limited number of bombers on missions at any one time. 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.” Remanufacturing some weapon parts is difficult and expensive because 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). The ability of the U.S. to produce solid-fuel rocket motors is another long-range concern.

Grade: U.S. nuclear platforms are in dire need of recapitalization. The U.S. has put into place plans for nuclear triad modernization, and despite some delays, funding has been limited given the circumstance and difficulties caused by sequestration. 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 grade of “weak.”

Nuclear Weapons Complex Score: Weak

A large part of maintaining a reliable and effective nuclear stockpile depends on the facilities where U.S. devices and components are developed, 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.

In addition to these government sites, the defense industrial base supports the development and maintenance of American delivery platforms. These complexes design, develop, test, and produce the weapons in the U.S. nuclear arsenal. Their maintenance is of critical importance. As the 2010 Nuclear Posture Review (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.\textsuperscript{335}

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.\textsuperscript{336} U.S. research and development efforts and the industrial base that supports modernization of delivery systems are an important part of this indicator.

Maintaining a safe, secure, effective, and reliable nuclear stockpile requires modern facilities, technical expertise, and tools to repair any malfunctions quickly, safely, and securely and to produce new nuclear weapons if required. The existing nuclear weapons complex is not fully functional. The U.S. cannot produce more than a few new warheads per year. There are limits on the ability to conduct life extension programs. Dr. John Foster has reported that the U.S. no longer can “serially produce many crucial components of our nuclear weapons.”\textsuperscript{337}

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 program would cost $8.7 billion in FY 2015.\textsuperscript{338} In reality, the National Nuclear Security Administration received about $8.2 billion for this recapitalization.

Since 1993, the DOE has not had a facility dedicated to production of plutonium pits, one of the main components of America’s nuclear weapons. The U.S. currently keeps about 5,000 plutonium pits in strategic reserve. There are significant disagreements as to the effect of aging on 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 at the Los Alamos PF-4 facility. Russia, the closest competitor and potential adversary, can produce around 2,000 pits a year.\textsuperscript{339}

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 mission. Some parts of the complex—most importantly, parts of the plutonium and highly enriched uranium component manufacturing infrastructure—have not been modernized since the 1950s, and plans for long-term infrastructure recapitalization remain uncertain. Thus, the infrastructure receives a grade of “weak.”

**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.\textsuperscript{340}

The U.S.’s ability to maintain and attract a high-quality workforce is critical to assuring the future of the American nuclear deterrent. While today’s weapons designers and engineers are first-rate, they also are aging and retiring. It is essential that their knowledge be passed on to the next generation that will take on this mission. The weapons labs understand this problem and are taking steps, despite significant challenges, to mentor the next generation.

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, effectiveness, and reliability of its nuclear deterrent. Without their experience, the nuclear weapons complex could not function. A basic problem is that few scientists or engineers at the NNSA 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 in attracting and retaining talent. Because many scientists and engineers with a practical nuclear weapon design and testing experience are retired, 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 score of “marginal.”

**Readiness of Forces Score: Marginal**

The readiness of forces is a vital component of America’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 2015, the services continue to align resources in order to preserve strategic capabilities in the short term, but the long-term impacts continue to be uncertain. Continued decline in U.S. general purpose forces could eventually affect nuclear forces, especially the bomber leg of the nuclear triad. Changes prompted by the Navy and Air Force cheating scandals have begun to address some of the morale issues.

**Grade:** Uncertainty regarding the further potential impacts of sequestration earns this indicator a grade of “marginal.”

**Allied Assurance Score: Marginal**

The number of weapons that U.S. allies keep is an important element when speaking about the credibility of America’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, largely as a hedge against uncertainty of American credibility. The U.S. also deploys nuclear gravity bombs in Europe as a visible manifestation of its commitment to its NATO allies.

The U.S., however, must concern itself not just with NATO, but with Asian allies as well. The United States provides nuclear assurances to 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. In addition, the Iranian nuclear program is threatening U.S. nonproliferation goals in the Middle East.

**Grade:** At this time, most U.S. allies are not 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.” Additionally, America’s seeming acceptance of Iran developing nuclear capabilities is contributing toward other countries in the Middle East region considering whether to seek similar capabilities. Thus, allied assurance declines this year to a grade of “marginal.”

**Nuclear Test Readiness Score: Weak**

Testing is one of the key elements of maintaining a safe, secure, effective, and reliable nuclear deterrent. While the U.S. is currently under a self-imposed nuclear testing moratorium, it maintains a low level of 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.\textsuperscript{345}

Test readiness refers to a single test 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.\textsuperscript{346}

**Grade:** As noted, the U.S. can meet the readiness requirement mandated by the law only if certain domestic regulations, agreements, and 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 earns a grade of “weak.”

**Overall U.S. Nuclear Weapons Capability Score: 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. Averaging the subscores across the nuclear enterprise therefore results in an overall score of “marginal.”

### U.S. Military Power: Nuclear

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<td>Allied Assurance</td>
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<td>Nuclear Test Readiness</td>
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<td><strong>OVERALL</strong></td>
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</table>
Endnotes:


2. Ibid., p. 8.


5. The United States has not had to contend in combat with any credible air force since the Vietnam War, but U.S. air force 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 is the number of conventional surface combatants armed with large-caliber guns that an enemy navy has. Likewise, ground force planners have to consider the numbers and types of guided anti-armor weapons that an enemy possesses and whether an 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); 3-300 anti-air missile ($1 million)/F/A-18 Hornet ($60 million) or F-35A Lightning II ($180 million).

6. One example of balancing the forces is the Army’s Aviation Restructure Initiative, in which the active-duty force seeks to redistribute certain rotorcraft platforms among the active-duty Army and the National Guard, a plan that the Guard has contended will reduce the capabilities it has gained during recent combat engagements, such as its pilots’ proficiency flying Apache helicopters. For more on this issue, see U.S. Government Accountability Office, Force Structure: Army’s Analyses of Aviation Alternatives, GAO-15-430R, February 26, 2015 (updated April 27, 2015), http://www.gao.gov/assets/670/669857.pdf (accessed September 7, 2015).


9. 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.

10. The U.S. Marine Corps and the U.S. Navy have Reserve components but no National Guard components equivalent to those of the Army and the 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.

11. 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.


15. For an assessment of the U.S. Navy’s readiness, see infra, pp. 242–243.


17. Ibid.

18. Ibid., pp. 8–9.


27. Ibid.


29. Ibid.


34. Ibid., p. 3–4.


36. For additional information, see Appendix, “Military Capabilities and Corresponding Modernization Programs.”


45. Ibid., p. 3-5.

46. Ibid., p. 3-6.

47. Ibid., p. 3-8.


51. Ibid.


53. Ibid.


56. Ibid.


58. Ibid., p. 1-1.


63. Ibid., p. 11.


66. Tan, “Big BCT Changes Mapped out for 2015?”


71. 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.


73. Ibid.


81. 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-I); 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 Report, June 12, 2015, pp. 17-18, http://www.fas.org/sgp/crs/weapons/RL32665.pdf (accessed June 17, 2014).


85. Greenert, “FY 2016 Department of the Navy Posture,” p. 18; 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 FY2015, June 2014, p. 11, http://navylive.dodlive.mil/files/2014/07/30-year-shipbuilding-plan1.pdf (accessed June 17, 2015). 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). At 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 2016 Department of the Navy Posture,” p. 3.


87. Ibid.

88. Ibid., p. 59.


93. Eleven cruisers will also be placed in “Reduced Operating Status” but will be included in the ship count as they are not being retired.

94. O’Rourke, “Navy Force Structure and Shipbuilding Plans.”


97. 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). At 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 2016 Department of the Navy Posture,” p. 3.


99. Rotational deployments involve a ship sailing to a location for a set amount of time and returning to the United States.


101. 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.


106. Ibid., p. 16.


110. Ibid.


112. This is based on a calculation of the total number of attack submarines (which includes three different classes), which was 54 as of publication, and the number of Los Angeles-class submarines, which was 39 as of publication.


114. Ibid., pp. 17–18.

115. Ibid., p. 18.

116. Ibid.


118. 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 Corporation. General Dynamics has three shipyards, Huntington Ingalls has two, and the remaining two shipbuilders have one each.


123. O’Rourke, “Navy Ohio Replacement (SSBN[X]) Ballistic Missile Submarine Program.”

124. This is based on a Congressional Budget Office analysis of historical shipbuilding funding, which the CBO calculates as $13.9 billion annually. See Congressional Budget Office, An Analysis of the Navy’s Fiscal Year 2015 Shipbuilding Plan, p. 3.


129. 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).


140. Ibid., p. 6.


142. Ibid. p. 1.


144. Ibid.


147. As discussed above, the Navy reported 95 ships forward deployed for 2015 versus 104 the previous year.

148. This requirement is derived from the BUR’s requirement for four–five carrier strike groups per MRC; however, this Index finds that number low by historical accounts and recommends one additional carrier per MRC.


151. 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.


153. 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.


157. Ibid., p. 8.


159. Ibid.

160. Ibid., p. 4.

161. Ibid., pp. 9–10.


167. Ibid., p. 18.

168. Ibid., p. 9.


179. Ibid.

180. Ibid., pp. 8–9.


182. Ibid., p. 7.


196. Ibid.


198. Ibid., p. 15.


207. Ibid., p 17.


209. Ibid., p. 18.


213. Ibid., p. 3.

214. Ibid., p. 5.


217. Ibid.


219. This number represents total active component fighters. This Index considers requirements, such as aircraft, that are needed to perform Operation Noble Eagle (ONE), an ongoing mission to defend American airspace. Details regarding ONE are limited and largely unavailable to the public. Because the exact number of active component fighter aircraft participating in ONE is unknown, those fighters that may be tasked with the ONE mission are not counted in this total.


227. Ibid., p. 10.

228. Ibid., p. 11.


230. Ibid.


232. Ibid.


236. Ibid.


238. Dunford statement, January 28, 2015, p. 32.

239. Paxton statement, p. 7.

240. Ibid., p. 87.


243. Ibid.

244. Dunford statement, February 26, 2016, pp. 24-25.


246. Paxton statement, p. 10.

247. Ibid., p. 11.


249. Ibid.


253. Ibid.


259. Ibid., pp. 2-3.


267. Ibid., p. 3-2.


272. In regard to this overall requirement—armored lift for 10 battalions of infantry—the AAV Survivability Upgrade Program would provide for four battalions, and ACV 1.1 and ACV 1.2 would account for six battalions. Ibid., pp. 27-28.


275. Feickert, “Marine Corps Amphibious Combat Vehicle (ACV) and Marine Personnel Carrier (MPC): Background and Issues for Congress.”


284. Grosklags, Manazir, and Davis, “Department of the Navy’s Aviation Programs,” pp. 15–16.

285. Ibid., p. 16.

286. Dunford statement, February 26, 2015, p. 16.


289. Ibid., p. 20.

290. Ibid.


292. Ibid., p. 23.

293. 31,000 Marines were forward deployed out of 184,100 authorized total end strength in FY 2015, or roughly 17 percent. For these respective figures, see Paxton statement, p. 23, and U.S. Department of Defense, United States Department of Defense Fiscal Year 2016 Budget Request: Overview, p. A-2.


299. Ibid., p. 7.


301. This count is based on an average number of 1.5. divisions deployed to major wars (see Table 6, p. 226) and an average of 10–11 battalions per division.


303. Ibid.


310. Ibid.


320. Ibid.


342. Ibid.


Glossary of Terms and Abbreviations

A

A2/AD  anti-access/area-denial
AAV  Amphibious Assault Vehicle
ABM  Ansar Bayt al-Maqdis
ACV  Amphibious Combat Vehicle
ADIZ  Air Defense Identification Zone
AEHF  Advanced Extremely High Frequency (satellite system)
AEW  airborne early warning
AFAFRICA  U.S. Air Forces Africa
AFP  Armed Forces of the Philippines
AFRICOM  U.S. Africa Command
AFSOC  U.S. Air Force Special Operations Command
AIP  Air Independent Propulsion
AIT  American Institute in Taiwan
AMDR  Air and Missile Defense Radar
AMPV  Armored Multipurpose Vehicle
ANSF  Afghan National Security Forces
AN/TPY-2  Army Navy/Transportable Radar Surveillance
ANZUS  Australia–New Zealand–U.S. Security Treaty
AUSMIN  Australia–United States Ministerial
AOR  area of responsibility
APC  armored personnel carrier
AQAP  al-Qaeda in the Arabian Peninsula
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AQI</td>
<td>al-Qaeda in Iraq</td>
</tr>
<tr>
<td>AQIM</td>
<td>al-Qaeda in the Islamic Maghreb</td>
</tr>
<tr>
<td>ARG</td>
<td>amphibious ready group</td>
</tr>
<tr>
<td>ASBM</td>
<td>Anti-ship ballistic missile</td>
</tr>
<tr>
<td>ASEAN</td>
<td>Association of Southeast Asian Nations</td>
</tr>
<tr>
<td>ASW</td>
<td>anti-submarine warfare</td>
</tr>
<tr>
<td>ASUW</td>
<td>anti-surface warfare</td>
</tr>
<tr>
<td>AW</td>
<td>air warfare</td>
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**B**

<table>
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<tr>
<th>Acronym</th>
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<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>
</tr>
<tr>
<td>BJP</td>
<td>Bharatiya Janata Party</td>
</tr>
<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**

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<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>C2</td>
<td>command and control</td>
</tr>
<tr>
<td>C4ISR</td>
<td>command, control, communications, computers, and intelligence, surveillance, and reconnaissance</td>
</tr>
<tr>
<td>CA</td>
<td>civil affairs</td>
</tr>
<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>
</tr>
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<td>CENTCOM</td>
<td>U.S. Central Command</td>
</tr>
<tr>
<td>CFC</td>
<td>Combined Forces Command (South Korea–U.S.)</td>
</tr>
<tr>
<td>CIA</td>
<td>Central Intelligence Agency</td>
</tr>
<tr>
<td>CJTF–HOA</td>
<td>Combined Joint Task Force–Horn of Africa</td>
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<tr>
<td>CLF</td>
<td>Combat Logistics Force</td>
</tr>
<tr>
<td>CMRR</td>
<td>Chemistry and Metallurgy Research Replacement</td>
</tr>
<tr>
<td>CMT</td>
<td>Combat Mission Team</td>
</tr>
<tr>
<td>COCOM</td>
<td>Combatant Command</td>
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<td>CONUS</td>
<td>continental United States</td>
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<tr>
<td>CPMIEC</td>
<td>China Precision Machinery Import–Export Corporation</td>
</tr>
<tr>
<td>CPT</td>
<td>Cyber Protection Team</td>
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<tr>
<td>CSF</td>
<td>coalition support funds</td>
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<td>CSG</td>
<td>carrier strike group</td>
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<td>CSO</td>
<td>Critical Skills Operator</td>
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<td>CT</td>
<td>Counterterrorism</td>
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<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>CTC</td>
<td>Combat Training Centers</td>
</tr>
<tr>
<td>CTF</td>
<td>Combined Task Force</td>
</tr>
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<td>CTIC</td>
<td>Counter Terrorism Information Center</td>
</tr>
<tr>
<td>CVW</td>
<td>carrier air wing</td>
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<td>CW</td>
<td>chemical warfare</td>
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<td>CYBERCOM</td>
<td>U.S. Cyber Command</td>
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<td>deployment-to-dwell</td>
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<tr>
<td>DA-KKV</td>
<td>direct-ascent kinetic-kill vehicle</td>
</tr>
<tr>
<td>DDPR</td>
<td>Deterrence and Defense Posture Review</td>
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<tr>
<td>DMZ</td>
<td>demilitarized zone</td>
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<tr>
<td>DNI</td>
<td>Director of National Intelligence</td>
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<tr>
<td>DOD</td>
<td>U.S. Department of Defense</td>
</tr>
<tr>
<td>DOE</td>
<td>U.S. Department of Energy</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>DSG</td>
<td>Defense Strategic Guidance</td>
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<tr>
<td>DSR</td>
<td>Defense Strategic Review</td>
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<td>Enhanced Defense Cooperation Agreement</td>
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<td>EEZ</td>
<td>exclusive economic zone</td>
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<tr>
<td>EFV</td>
<td>Expeditionary Fighting Vehicle</td>
</tr>
<tr>
<td>EOD</td>
<td>explosive ordinance disposal</td>
</tr>
<tr>
<td>EMD</td>
<td>engineering and manufacturing development</td>
</tr>
<tr>
<td>EMP</td>
<td>electromagnetic pulse</td>
</tr>
<tr>
<td>ESG</td>
<td>Expeditionary Strike Group</td>
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<tr>
<td>EUCOM</td>
<td>U.S. European Command</td>
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<td>EW</td>
<td>electronic warfare</td>
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<td>Federally Administered Tribal Areas</td>
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<td>FCS</td>
<td>Future Combat Systems</td>
</tr>
<tr>
<td>FTA</td>
<td>free trade agreement</td>
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<td>Acronym</td>
<td>Description</td>
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<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>GAO</td>
<td>Government Accountability Office</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>GDP</td>
<td>gross domestic product</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>
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<tr>
<td>GPS</td>
<td>Global Positioning System</td>
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<tr>
<td>HA/DR</td>
<td>humanitarian assistance/disaster relief</td>
</tr>
<tr>
<td>HEO</td>
<td>highly elliptical orbit</td>
</tr>
<tr>
<td>HMMWV</td>
<td>High Mobility Multipurpose Wheeled Vehicle</td>
</tr>
<tr>
<td>HVE</td>
<td>homegrown violent extremist</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>
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<tr>
<td>IED</td>
<td>improvised explosive device</td>
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<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>
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<tr>
<td>IOC</td>
<td>initial operating capability</td>
</tr>
<tr>
<td>IRGC</td>
<td>Islamic Revolutionary Guard Corps</td>
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<td>ISAF</td>
<td>International Security Assistance Force</td>
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<td>ISIL</td>
<td>Islamic State of Iraq and the Levant</td>
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<td>ISIS</td>
<td>Islamic State of Iraq and Syria</td>
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<tr>
<td>ISR</td>
<td>intelligence, surveillance, and reconnaissance</td>
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<td>JOAC</td>
<td>Joint Operational Access Concept</td>
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<td>JeM</td>
<td>Jaish-e-Mohammed</td>
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<td>JSF</td>
<td>Joint Strike Fighter (F-35 Lightning II)</td>
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<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>JSOC</td>
<td>Joint Special Operations Command</td>
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<tr>
<td>JSTAR</td>
<td>Joint Surveillance and Target Attack Radar System</td>
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<td>JLTV</td>
<td>Joint Light Tactical Vehicle</td>
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<td>JTF North</td>
<td>Joint Task Force North</td>
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<tr>
<td>JuD</td>
<td>Jamaat-ud-Dawa</td>
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<tr>
<td>KATUSA</td>
<td>Korean Augmentees to the United States Army</td>
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<tr>
<td>LAC</td>
<td>Line of Actual Control</td>
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<td>LAF</td>
<td>Lebanese Armed Forces</td>
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<tr>
<td>LAV</td>
<td>Light Armored Vehicle</td>
</tr>
<tr>
<td>LCAC</td>
<td>Landing Craft Air Cushion Vehicle</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>LRS-B</td>
<td>Long-Range Strike Bomber</td>
</tr>
<tr>
<td>LRIP</td>
<td>Low Rate Initial Production</td>
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<tr>
<td>LSD</td>
<td>landing ship, dock (amphibious ship)</td>
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<td>MAGTF</td>
<td>Marine Air-Ground Task Force</td>
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<td>MANPADS</td>
<td>man-portable air defense systems</td>
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<td>MARCENT</td>
<td>U.S. Marine Corps Forces Central Command</td>
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<td>U.S. Marine Corps Forces Africa</td>
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<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>Code</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>MEB</td>
<td>Marine Expeditionary Brigade</td>
</tr>
<tr>
<td>MEF</td>
<td>Marine Expeditionary Force</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>MPC</td>
<td>Marine Personnel Carrier</td>
</tr>
<tr>
<td>MPS</td>
<td>Maritime Prepositioning Ships</td>
</tr>
<tr>
<td>MRC</td>
<td>major regional conflict (see MTW, MCO)</td>
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<tr>
<td>MRAP</td>
<td>Mine-Resistant Ambush-Protected (vehicle)</td>
</tr>
<tr>
<td>MRBM</td>
<td>medium-range ballistic missile</td>
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<tr>
<td>MTW</td>
<td>major theater war (see MCO, MRC)</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>NAP</td>
<td>National Action Plan</td>
</tr>
<tr>
<td>NATO</td>
<td>North Atlantic Treaty Organization</td>
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<td>NAVAF</td>
<td>U.S. Naval Forces Africa</td>
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<td>NAVEUR</td>
<td>U.S. Naval Forces Europe</td>
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<td>NDN</td>
<td>Northern Distribution Network</td>
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<td>NDAA</td>
<td>National Defense Authorization Act</td>
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<td>NDP</td>
<td>National Defense Panel</td>
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<tr>
<td>New START</td>
<td>New Strategic Arms Reduction Treaty</td>
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<td>NNNSA</td>
<td>National Nuclear Security Administration</td>
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<td>NPR</td>
<td>Nuclear Posture Review</td>
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<tr>
<td>NPRIS</td>
<td>Nuclear Posture Review Implementation Study</td>
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<td>NSR</td>
<td>Northern Sea Route</td>
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<td>NSWC</td>
<td>Naval Special Warfare Command</td>
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<table>
<thead>
<tr>
<th>Code</th>
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<td>OAS</td>
<td>Organization of American States</td>
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<tr>
<td>OCO</td>
<td>overseas contingency operations</td>
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<tr>
<td>OEF</td>
<td>Operation Enduring Freedom</td>
</tr>
<tr>
<td>OIF</td>
<td>Operation Iraqi Freedom</td>
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<tr>
<td>ONA</td>
<td>Office of Net Assessment</td>
</tr>
<tr>
<td>ONE</td>
<td>Operation Noble Eagle</td>
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<tr>
<td>OPCON</td>
<td>operational control</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
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<td>---------</td>
<td>-------------</td>
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<tr>
<td>PACAF</td>
<td>U.S. Pacific Air Forces</td>
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<td>PACFLT</td>
<td>U.S. Pacific Fleet</td>
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<tr>
<td>PACOM</td>
<td>U.S. Pacific Command</td>
</tr>
<tr>
<td>PAF</td>
<td>Philippine Air Force</td>
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<tr>
<td>PDD-15</td>
<td>Presidential Decision Directive-15</td>
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<td>PLFP</td>
<td>Popular Front for the Liberation of Palestine</td>
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<tr>
<td>PLFP-GC</td>
<td>Popular Front for the Liberation of Palestine-General Command</td>
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<tr>
<td>PKO</td>
<td>peacekeeping operation</td>
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<tr>
<td>PLA</td>
<td>People's Liberation Army</td>
</tr>
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<td>PLAAF</td>
<td>People's Liberation Army Air Force</td>
</tr>
<tr>
<td>PLAN</td>
<td>People's Liberation Army Navy</td>
</tr>
<tr>
<td>PLO</td>
<td>Palestine Liberation Organization</td>
</tr>
<tr>
<td>PNI</td>
<td>Presidential Nuclear Initiative</td>
</tr>
<tr>
<td>PNT</td>
<td>positioning, navigation, and timing</td>
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<tr>
<td>PRC</td>
<td>People's Republic of China</td>
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<td>PRT</td>
<td>Provisional Reconstruction Team</td>
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<td>PSA</td>
<td>Port of Singapore Authority</td>
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<tr>
<td>PSF</td>
<td>Peninsula Shield Force</td>
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<td>QDR</td>
<td>Quadrennial Defense Review</td>
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<td>QNSTR</td>
<td>Quadrennial National Security Threats and Trends</td>
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<td>RAF</td>
<td>Royal Air Force</td>
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<tr>
<td>RCOH</td>
<td>refueling and complex overhaul (nuclear-powered ship)</td>
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<tr>
<td>RDJTF</td>
<td>Rapid Deployment Joint Task Force</td>
</tr>
<tr>
<td>RFP</td>
<td>Request for Proposals</td>
</tr>
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<td>ROK</td>
<td>Republic of Korea (South Korea)</td>
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<td>RP</td>
<td>Republic of the Philippines</td>
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<tr>
<td>SAARC</td>
<td>South Asia Association of Regional Cooperation</td>
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<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>Term</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</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>SFA</td>
<td>Strategic Framework Agreement</td>
</tr>
<tr>
<td>SIGINT</td>
<td>signals intelligence</td>
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<tr>
<td>SLBM</td>
<td>submarine-launched ballistic missile</td>
</tr>
<tr>
<td>SMU</td>
<td>special mission unit</td>
</tr>
<tr>
<td>SOCAFICA</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>SOP</td>
<td>Standard Operating Procedure</td>
</tr>
<tr>
<td>SORT</td>
<td>Strategic Offensive Reductions Treaty</td>
</tr>
<tr>
<td>SOTFE</td>
<td>Support Operations Task Force Europe</td>
</tr>
<tr>
<td>SPE</td>
<td>Sony Pictures Entertainment</td>
</tr>
<tr>
<td>SPMAGTF</td>
<td>Special-Purpose Marine Air Ground Task Force</td>
</tr>
<tr>
<td>SRBM</td>
<td>short-range ballistic missile</td>
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<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>
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<tr>
<td>STRATCOM</td>
<td>U.S. Strategic Command</td>
</tr>
<tr>
<td>SUW</td>
<td>surface warfare</td>
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<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
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<tr>
<td>TACAIR</td>
<td>tactical air</td>
</tr>
<tr>
<td>TAI</td>
<td>total active inventory</td>
</tr>
<tr>
<td>TANAP</td>
<td>Trans-Anatolian Natural Gas Pipeline</td>
</tr>
<tr>
<td>TAP</td>
<td>Trans-Adriatic Pipeline</td>
</tr>
<tr>
<td>TCO</td>
<td>transnational criminal organization</td>
</tr>
<tr>
<td>TPP</td>
<td>Trans-Pacific Partnership</td>
</tr>
<tr>
<td>TTP</td>
<td>Tehrik-e-Taliban Pakistan</td>
</tr>
<tr>
<td>TLAM/N</td>
<td>Tomahawk Land Attack Missile/Nuclear</td>
</tr>
<tr>
<td>TNW</td>
<td>tactical nuclear weapon</td>
</tr>
<tr>
<td>TRA</td>
<td>Taiwan Relations Act</td>
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<tr>
<td>TRANSCOM</td>
<td>U.S. Transportation Command</td>
</tr>
<tr>
<td>TSOC</td>
<td>Theater Special Operations Command</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
</tr>
<tr>
<td>--------------</td>
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</tr>
<tr>
<td>UAV</td>
<td>unmanned aerial vehicle</td>
</tr>
<tr>
<td>UAE</td>
<td>United Arab Emirates</td>
</tr>
<tr>
<td>UCLASS</td>
<td>Unmanned Carrier-Launched Airborne Surveillance and Strike</td>
</tr>
<tr>
<td>UNASUR</td>
<td>Unión de Naciones Suramericanas (Union of South American Nations)</td>
</tr>
<tr>
<td>UNC</td>
<td>United Nations Council</td>
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<tr>
<td>USAF</td>
<td>U.S. Air Force</td>
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<tr>
<td>USAFCENT</td>
<td>U.S. Air Forces Central</td>
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<td>USAFE</td>
<td>U.S. Air Forces Europe</td>
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<td>U.S. Army Africa</td>
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<td>USARCENT</td>
<td>U.S. Army Central</td>
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<td>USARPAC</td>
<td>U.S. Army Pacific</td>
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<td>U.S. Army Europe</td>
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<td>USASOC</td>
<td>U.S. Army Special Operations Command</td>
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<td>USFJ</td>
<td>U.S. Forces Japan</td>
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<td>USFK</td>
<td>U.S. Forces Korea</td>
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<td>U.S. Naval Forces Central</td>
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<td>USNORTHCOM</td>
<td>U.S. Northern Command</td>
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<td>USSOCOM</td>
<td>U.S. Special Operations Command</td>
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<tr>
<td>USSOUTHCOM</td>
<td>U.S. Southern Command</td>
</tr>
<tr>
<td>USW</td>
<td>undersea warfare</td>
</tr>
<tr>
<td>VLS</td>
<td>vertical launching system</td>
</tr>
<tr>
<td>WGS</td>
<td>Wideband Global SATCOM (satellite system)</td>
</tr>
<tr>
<td>WMD</td>
<td>weapons of mass destruction</td>
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<tr>
<td>WWTA</td>
<td>Worldwide Threat Assessment</td>
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Methodology

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. Further, conditions in each of the areas assessed are changing throughout the year, so any measurement is based on the information at hand and must necessarily be viewed as a snapshot in time. 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 irrefutable 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 that 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 to 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. **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 is 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 is characterized by adequate infrastructure, a moderate alliance structure, and acceptable levels of regional political stability. The U.S. military is adequately placed.

4. **Favorable.** A favorable 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.** An extremely favorable operating environment includes well-established and maintained infrastructure, strong capable allies, and a stable political environment. 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. Various indicators 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, prepositioned 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, andlogistically 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.

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 the authors and internal and 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, because even if the newer system is presumably better than the older, until it is 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 is significantly too small or inappropriate to sustain current capability or program in place.

- **Weak:** Modernization programs are smaller than current capability size.

- **Marginal:** Modernization programs are 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 breach occurs when the cost of a new item exceeds the most recently approved amount by 25 percent or more or if it exceeds the originally approved amount by 50 percent or more. 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 deployment of 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.

Further, a service’s assessment of its readiness occurs within its size or capacity at that time and as dictated by the Defense Strategic Guidance, National Military Strategy, and related top-level documents generated by the Administration and senior Defense officials. It does not account for the size-related “readiness” of the force to meet national security requirements assessed as needed by this Index. Thus, for a service to be assessed as “very strong” would mean that 80 percent–100 percent of the existing force in a service meets that service’s requirements for being “ready” even if the size of the service is less than that required to meet the two-MRC benchmark. Therefore, it is important for the reader to keep this in mind when considering the actual readiness of the force to protect U.S. national security interests against the challenges presented by threats around the world.

**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>5</td>
<td>5</td>
<td>None</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>4</td>
<td>1</td>
<td>N/A—Ground Combat Vehicle (GCV) cancelled</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>4</td>
<td>3</td>
<td>None</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>4</td>
<td>1</td>
<td>N/A—Armored Multi-Purpose Vehicle (AMPV) not yet a Major Defense Acquisition Program (MDAP)</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.
## Army Scores

### 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>3</td>
</tr>
<tr>
<td>Inventory: 150,000 Fleet age: 20 Date: 1985</td>
<td>234</td>
<td>49,675</td>
<td>Timeline: 2015–2042</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Currently in development, the JLTV is a vehicle program meant to replace some of the HMMWVs and improve reliability and survivability of vehicles. So far the program has experienced a one-year delay due to changes in vehicle requirements. This is a joint program with USMC. Low rate initial production was awarded to a single contractor in August 2015.

### 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>1</td>
<td>AH-64E Reman</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Inventory: 758 Fleet age: 14 Date: 1984</td>
<td>91</td>
<td>548</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

<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-64E New Build</td>
<td>3</td>
<td>4</td>
<td>AH-64E New Build</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Timeline: 2013–2026</td>
<td>All 63 pending</td>
<td>$582</td>
<td>$2,057</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

### AH-64E Reman

<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-64E Reman</td>
<td>4</td>
<td>4</td>
<td>AH-64E Reman</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Timeline: 2010–2025</td>
<td>$4,873</td>
<td>$10,208</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The AH-64E Reman is a program to remanufacture old Apache helicopters into the more advanced AH-64E version. The AH-64E will have more modern and interoperable systems and be able to carry modern munitions. The overwhelming majority of AH-64Es will be from remanufacture.

### AH-64E New Build

<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-64E New Build</td>
<td>3</td>
<td>4</td>
<td>AH-64E New Build</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Timeline: 2013–2026</td>
<td>$582</td>
<td>$2,057</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The AH-64E New Build pays for the production of new Apaches. The program is meant to modernize and sustain the current Apache inventory. The AH-64E will have more modern and interoperable systems and be able to carry modern munitions. Very few AH-64Es are being built compared with the remanufactured variant.

### 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><strong>UH-60M Black Hawk</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 592</td>
<td>Fleet age: 23</td>
<td>Date: 1979</td>
<td>Timeline: 2005–2025</td>
<td>3</td>
<td>4</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></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>UH-60M Black Hawk</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 698</td>
<td>Fleet age: 8</td>
<td>Date: 2006</td>
<td>DELIVERY: 664</td>
<td>$14,202</td>
<td>$12,037</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></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-47D Chinook</strong></td>
<td></td>
<td></td>
<td><strong>CH-47F</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 208</td>
<td>Fleet age: 26</td>
<td>Date: 1962</td>
<td>Timeline: 2003–2017</td>
<td>3</td>
<td>4</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-47.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CH-47F Chinook</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 189</td>
<td>Fleet age: 3.4</td>
<td>Date: 2001</td>
<td>DELIVERY: 366</td>
<td>$13,262</td>
<td>$1,756</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></td>
<td></td>
<td></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><strong>MQ-1C Gray Eagle</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 99</td>
<td>Fleet age: 2</td>
<td>Date: 2009</td>
<td>Timeline: 2010–2015</td>
<td>5</td>
<td>4</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></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

#### 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>Ford-Class Aircraft Carrier (CVN-78)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Inventory: 10</td>
<td></td>
<td></td>
<td>Timeline: 2008–2018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 23.5</td>
<td></td>
<td></td>
<td>The expected life of the Nimitz-class nuclear aircraft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 1975</td>
<td></td>
<td></td>
<td>carrier is 50 years. The class will start retiring in the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>mid-2020s and will be replaced by the Ford-class carriers.</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.

### 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>Zumwalt-Class Destroyer (DDG-1000)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Inventory: 22</td>
<td></td>
<td></td>
<td>Timeline: 2007–2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 24.2</td>
<td></td>
<td></td>
<td>The Ticonderoga-class guided missile cruiser has a life</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 1983</td>
<td></td>
<td></td>
<td>expectancy of 35 years. There are plans to lay up half of</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>the cruiser fleet starting in FY 2015 through FY 2026</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>to modernize it and extend its life into the 2030s. There</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>are no replacements currently planned.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Arleigh Burke-Class Destroyer (DDG-51)       | 4         | 4               | Arleigh Burke-Class Destroyer (DDG-51)                    | 3          | 4            |
| Inventory: 62                                |           |                 | Timeline: 1985–2019                                       |            |              |
| Fleet age: 13.3                              |           |                 | The Arleigh Burke-class guided missile destroyer is the    |            |              |
| Date: 1991                                    |           |                 | only operating class of large surface combatant currently  |            |              |
|                                              |           |                 | in production. The DDG-51 has a 35-year life expectancy.  |            |              |

<table>
<thead>
<tr>
<th></th>
<th>DELIVERY</th>
<th>SPENDING ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All 3 pending</td>
<td>$25,486   $16,104</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>DELIVERY</th>
<th>SPENDING ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All 3 pending</td>
<td>$11,843   $603</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>DELIVERY</th>
<th>SPENDING ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>72</td>
<td>$84,621   $9,403</td>
</tr>
</tbody>
</table>
# 2016 INDEX OF U.S. MILITARY STRENGTH

## 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>1</td>
<td>1</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></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Littoral Combat Ship (LCS)** | 5 | 1 | Littoral Combat Ship (LCS) | 1 | 1 |
| Inventory: 4 | Fleet age: 3.3 | Date: 2008 | Timeline: 2009-2018 | | |
| 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. | | | The LCS program is in the early stages of production. The LCS is intended to fulfill the mine countermeasure, antisubmarine warfare, and surface warfare roles for the Navy. It will be the only small surface combatant in the fleet once the Navy’s frigates and MCM ships retire in the coming years. The program is facing controversy due to cost growth, development issues, and requirements issues for survivability and strike. A modified LCS classified as a frigate was announced to fill out the remaining 20-ship small surface combatant requirement in late 2014. |

| **Avenger-Class Mine Counter Measure (MCM-1)** | 2 | | | | |
| Inventory: 8 | Fleet age: 22.1 | Date: 1987 | | | |
| 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. | | | |

### SSGN 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>2</td>
<td>1</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></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.
## NAVY SCORES

### Attack Submarines

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><strong>Seawolf-Class (SSN-21)</strong></td>
<td></td>
<td></td>
<td><strong>Virginia-Class (SSN-774)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 3</td>
<td></td>
<td></td>
<td>Timeline: 1998–2019</td>
<td>2</td>
<td>4</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 three 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>
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<td></td>
</tr>
<tr>
<td><strong>Los Angeles-Class (SSN-688)</strong></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Inventory: 41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 25.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 1976</td>
<td></td>
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</tr>
<tr>
<td>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.</td>
<td></td>
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</tr>
<tr>
<td><strong>Virginia-Class (SSN-774)</strong></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Inventory: 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 5.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 2004</td>
<td></td>
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</tr>
<tr>
<td>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.</td>
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</tbody>
</table>

### 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></td>
<td>3</td>
<td>1</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>
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</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. 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>
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</tr>
</tbody>
</table>

N/A—SSBN(X) not yet a Major Defense Acquisition Program (MDAP)

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
## NAVY SCORES

### Amphibious Warfare Ship

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size</th>
<th>Health</th>
<th>Age Score</th>
<th>Capability Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wasp-Class Amphibious Assault Ship (LHD-1)</strong></td>
<td><strong>America-class (LHA 6)</strong></td>
<td></td>
<td></td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Inventory: 8  Fleet age: 17.5  Date: 1989</td>
<td>Timeline: 2007–2017</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</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>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| America-Class Amphibious Assault Ship (LHA-6) | | 1 | 1 | 5 | |
| Inventory: 1  Fleet age: 1  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’s 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

#### 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. 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.

### Notes

- Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
Airborne Early Warning

<table>
<thead>
<tr>
<th>Platform</th>
<th>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>1</td>
<td>1</td>
<td>E-2D Advanced Hawkeye</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Inventory: 68</td>
<td></td>
<td></td>
<td>Timeline: 2009–2023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 1964</td>
<td></td>
<td></td>
<td>Meant to replace the E-2C, the E-2D Hawkeye is in production.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>The original plan was to purchase five per year until 2023. DOD plans to make up for the cut in FY 2017 by purchasing six units.</td>
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<td></td>
</tr>
</tbody>
</table>

**E-2D Advanced Hawkeye**

<table>
<thead>
<tr>
<th>Score</th>
<th>Capability Score</th>
<th>MODERNIZATION PROGRAM</th>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>10</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$2,630</td>
<td>$3,785</td>
</tr>
</tbody>
</table>

Electronic Attack Aircraft

<table>
<thead>
<tr>
<th>Platform</th>
<th>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>1</td>
<td>5</td>
<td><strong>EA-18G Growler</strong></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Inventory: 20</td>
<td></td>
<td></td>
<td>Timeline: 2006–2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 1971</td>
<td></td>
<td></td>
<td>The EA-18G Growler has been in production for several years, with few current acquisition problems. The program total of 135 is an increase from previous years, which estimated the Navy would purchase 88. All 135 have been procured. Recent budget discussions in FY 2015 indicate the Navy may request additional Growlers.</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EA-18G Growler</strong></td>
<td>5</td>
<td></td>
<td></td>
<td>130</td>
<td>$12,588</td>
</tr>
<tr>
<td>Inventory: 104</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$281</td>
</tr>
<tr>
<td>Fleet age: 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 2010</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>The EA-18G electronic warfare aircraft is replacing the legacy EA-6B Prowlers. The platform is still in production and is relatively new.</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**

**Platform/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>23.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 455</td>
<td>Fleet age: 23.5</td>
<td>Date: 1983</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>F/A-18 E/F Super Hornet</td>
<td>12.4</td>
<td>2</td>
<td>F-35C Joint Strike Fighter</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Inventory: 563</td>
<td>Fleet age: 12.4</td>
<td>Date: 2001</td>
<td>Timeline: 2009–2033</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The F/A-18 E/F Super Hornet is a newer, more capable version of the Hornet. The Navy is aiming to have a combination of Super Hornets and F-35Cs make up their carrier-based strike capability. The F/A-18E-F has an expected service life of 20 years.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>DELIVERY</th>
<th>SPENDING ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 232</td>
<td>$20,012 $55,661</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 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. See also Dakota L. Wood, ed., 2015 Index of U.S. Military Strength (Washington, DC: The Heritage Foundation, 2015), http://index.heritage.org/militarystrength/
### 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><strong>B-52</strong></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>
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</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>
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</tr>
<tr>
<td><strong>B-1</strong></td>
<td>3</td>
<td>1</td>
<td>Timeline: 1986–2040</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 63</td>
<td>Fleet age: 27</td>
<td>Date: 1986</td>
<td></td>
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</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>
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</tr>
<tr>
<td><strong>B-2</strong></td>
<td>4</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>
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</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>
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</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><strong>A-10 Thunderbolt II</strong></td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 359</td>
<td>Fleet age: 32</td>
<td>Date: 1977</td>
<td></td>
<td></td>
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</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>
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<tr>
<td><strong>F-16</strong></td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 913</td>
<td>Fleet age: 23.9</td>
<td>Date: 1978</td>
<td></td>
<td></td>
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</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>
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</tr>
<tr>
<td><strong>F-35A</strong></td>
<td>5</td>
<td>1</td>
<td>Timeline: 2007–2038</td>
<td></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>
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</table>

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
# AIR FORCE SCORES

## Fighter 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>F-15</strong></td>
<td></td>
<td>2</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 438</td>
<td>Fleet age: 26.7</td>
<td>Date: 1979</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>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.</td>
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</tr>
</tbody>
</table>

| **F-22** | 2 | 5 | None |
| 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><strong>KC-10</strong></td>
<td>3</td>
<td>3</td>
<td>KC-46</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Inventory: 59</td>
<td>Fleet age: 29.6</td>
<td>Date: 1981</td>
<td>Timeline: 2015-2027</td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
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</tbody>
</table>

| **KC-135** | 1 | 2 |   |
| Inventory: 391 | Fleet age: 53 | Date: 1956 |   |   |
| The KC-135 supports the mobility and lift mission by providing the joint force aerial refueling capability. The KC-135 makes up the bulk of the aerial refueling capability. The aircraft was initially deployed in 1956, completing production in 1965. The aircraft has undergone several modifications, mainly engine upgrades to improve reliability. It is expected to be in service until 2040, but excessive usage has created many reliability issues due to problems from wear and tear, such as corrosion and fuel bladder leaks. |

## Notes:
Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
## AIR FORCE SCORES

### 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>C-5</strong></td>
<td>3</td>
<td>2</td>
<td><strong>C-5 RERP</strong></td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Inventory: 74</td>
<td>Fleet age: 34.5 Date: 1970</td>
<td></td>
<td>Timeline: 2008-2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
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</tr>
<tr>
<td><strong>C-17</strong></td>
<td>4</td>
<td>5</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 228</td>
<td>Fleet age: 11 Date: 1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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>C-130</strong></td>
<td>1</td>
<td>3</td>
<td><strong>C-130J</strong></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Inventory: 338</td>
<td>Fleet age: 21.9 Date: 1956</td>
<td></td>
<td>Timeline: 1994-2021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</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.
### AIR FORCE SCORES

**Intelligence, Surveillance, and Reconnaissance (ISR)**

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>RQ-4 Global Hawk</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 31</td>
<td>Fleet age: 4</td>
<td>Date: 2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The RQ-4 is an unmanned aerial vehicle (UAV) that supports the USAF’s ISR mission. Unlike the MQ-1 or MQ-9, the RQ-4 is a high-altitude, long-endurance (HALE) UAV, which in addition to higher altitude has a longer range than medium-altitude, long-endurance (MALE) UAVs. Originally deployed in 2011, the new Block 40 version is being procured. The life expectancy of the Global Hawk is 20 years.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQ-1 Predator</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 137</td>
<td>Fleet age: 7.4</td>
<td>Date: 2005</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The MQ-1 Predator is a MALE UAV that supports the USAF’s ISR mission. The MQ-1 is being replaced by the newer MQ-9. The expected life span of the MQ-1 is 20 years.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQ-9 A/B</td>
<td>3</td>
<td></td>
<td></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>The MQ-9 Reaper is the replacement for the MQ-1 Predator, to fulfill the USAF’s ISR mission. The UAV is in production. The expected life span of the MQ-1 is 20 years.</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></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>The RC-135 is a manned ISR aircraft. It was originally fielded in 1964. The Air Force plans to keep the system in service until 2018.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U-2</td>
<td>4</td>
<td></td>
<td></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>Initially deployed in 1956, this manned ISR aircraft can operate at high altitudes and long ranges. The U-2 has undergone a series of modification programs since 1967 to extend the life of the aircraft.</td>
<td></td>
<td></td>
<td></td>
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<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><strong>E-3 AWACS</strong></td>
<td></td>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 36.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 1978</td>
<td></td>
<td></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><strong>E-8 JSTARS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 13.7</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>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><strong>Global Positioning System (GPS)</strong></td>
<td></td>
<td></td>
<td>GPS III</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Inventory: 31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: 29.6</td>
<td></td>
<td></td>
<td>Timeline: 2012–2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 1990</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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 lifespan of 7.5 years, although 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><strong>Spaced-Based Infrared System (SBIRS)</strong></td>
<td></td>
<td></td>
<td>SBIRS High</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Inventory: n/a</td>
<td></td>
<td></td>
<td>Timeline: 2009–2013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet age: n/a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date: 2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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.
### MARINE CORPS SCORES

#### Main Battle Tank

<table>
<thead>
<tr>
<th>PLATFORM</th>
<th>Age Score</th>
<th>Capability Score</th>
<th>Modernization Delivery and Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1A1/2 Abrams</td>
<td>4</td>
<td>5</td>
<td>None</td>
</tr>
</tbody>
</table>

Inventory: 447  Fleet age: 13  Date: 1989

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>
<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>3</td>
</tr>
</tbody>
</table>

Inventory: 24,000  Fleet age: 20  Date: 1985

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).

#### Amphibious Assault 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>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>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inventory: 1,311  Fleet age: 35  Date: 1972

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>
<th>Size Score</th>
<th>Health Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAV-25</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inventory: 252  Fleet age: 23  Date: 1983

The LAV is a wheeled light armor vehicle with modest amphibious capability used for armed 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>
</tr>
</thead>
<tbody>
<tr>
<td>AH-1W Cobra</td>
<td>2</td>
<td>2</td>
<td>AH-1Z</td>
</tr>
<tr>
<td>Inventory: 120 Fleet age: 23 Date: 1986</td>
<td></td>
<td></td>
<td>Timeline: 2004–2020</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>
</tr>
<tr>
<td>AH-1Z Viper</td>
<td>5</td>
<td>2</td>
<td>DELIVERY</td>
</tr>
<tr>
<td>Inventory: 38 Fleet age: 2 Date: 2010</td>
<td></td>
<td></td>
<td>48 141</td>
</tr>
<tr>
<td>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.</td>
<td></td>
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</tr>
</tbody>
</table>

#### 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>
</tr>
</thead>
<tbody>
<tr>
<td>EA-6B</td>
<td>1</td>
<td>1</td>
<td>F-35B/C</td>
</tr>
<tr>
<td>Inventory: 29 Fleet age: 26 Date: 1971</td>
<td></td>
<td></td>
<td>Timeline: 2008–2033</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>
</tr>
<tr>
<td>AV-8B</td>
<td>2</td>
<td>2</td>
<td>DELIVERY</td>
</tr>
<tr>
<td>Inventory: 142 Fleet age: 17 Date: 1985</td>
<td></td>
<td></td>
<td>37 383</td>
</tr>
<tr>
<td>The Harrier is a vertical/short takeoff and landing aircraft designed to fly from LHA/LHDs. It provides strike and reconnaissance capabilities. The aircraft will be retired around 2024.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-35B</td>
<td>5</td>
<td>1</td>
<td>DELIVERY</td>
</tr>
<tr>
<td>Inventory: 30 Fleet age: 0 Date: 2015</td>
<td></td>
<td></td>
<td>37 383</td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F/A-18 A-D</td>
<td>3</td>
<td>3</td>
<td>DELIVERY</td>
</tr>
<tr>
<td>Inventory: 237 Fleet age: 22.5 Date: 1978</td>
<td></td>
<td></td>
<td>37 383</td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Notes:** Fleet age refers to the average age of the fleet. Date refers to the year the fleet first entered service.
# MARINE CORPS 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>CH-46E Sea Knight</td>
<td>1</td>
<td>1</td>
<td>MV-22B</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Inventory: 116</td>
<td>Fleet age: 45 Date: 1964</td>
<td>Timeline: 1997-2031</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>MV-22</td>
<td>5</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory: 210</td>
<td>Fleet age: 4 Date: 2007</td>
<td>Timeline: 1997-2031</td>
<td>DELIVERY 276 184</td>
<td>SPENDING ($ millions)</td>
<td>$43,265 $11,678</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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</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>CH-53E Super Stallion</td>
<td>2</td>
<td>1</td>
<td>CH-53K</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Inventory: 151</td>
<td>Fleet age: 25 Date: 1981</td>
<td>Timeline: 2017-2028</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>
<tr>
<td></td>
<td></td>
<td></td>
<td>DELIVERY</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>All 200 pending</td>
<td>SPENDING ($ millions)</td>
<td>$4,868 $24,596</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>KC-130J</td>
<td>5</td>
<td>5</td>
<td>KC-130J</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Inventory: 74</td>
<td>Fleet age: 7 Date: 2004</td>
<td>Timeline: 1997-2031</td>
<td>The KC-130J is both a tanker and transport aircraft. The program is currently in production. The airframe is expected to last 38 years.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DELIVERY 48 56</td>
<td>SPENDING ($ millions)</td>
<td>$4,101 $6,942</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. As part of the F-35 program, 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.

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An Assessment of the American Military’s Ability to Defend U.S. Interests

The Preamble to the Constitution makes it clear that one of the government’s primary responsibilities is to “provide for the common defence.” Countless reports exist in the government, academic, and policy communities that attempt to assess the military’s ability to support this responsibility, but Congress, the American people, and even the Department of Defense lack a single, consolidated reference to inform the crucial debate on whether the government is fulfilling its most important role.

Last year, The Heritage Foundation took an unprecedented look at this issue by combining various disciplines to answer the question: Taking into account conditions in key regions and the capabilities of America’s competitors, is the U.S. military capable of providing for the defense of the nation? This edition builds upon the first annual Index’s themes by exploring new components of national security, observing how threats and opportunities have changed in the world, and finally, assessing whether U.S. military forces have become better or worse able to defend American interests over the past year. The 2016 Index of U.S. Military Strength includes:

- An assessment of key regions where U.S. military forces may have to operate to defend America’s vital interests.
- An evaluation of threats to U.S. vital interests, identifying those who desire to harm American interests and the extent to which they can do so.
- An in-depth analysis of the U.S. military’s ability to provide for the common defense.
- Easy-to-read charts, maps, and tables that highlight key factors affecting the condition and relevance of America’s military power.
- Special essays from Dr. William Inboden of the University of Texas and Dr. Frank Hoffman from the National Defense University, among others, that provide a solid foundation upon which to build a more informed understanding of national security and defense matters.
- A preface by Senator Jim DeMint, President of The Heritage Foundation.

The 2016 Index of U.S. Military Strength is written for those who wish to understand how global conditions affect America’s most important interests and whether the United States’ military is up to the challenge of protecting them.

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