

JANUARY 2016

Asia-Pacific Rebalance 2025

Capabilities, Presence, and Partnerships

An Independent Review of U.S. Defense Strategy in the Asia-Pacific

STUDY DIRECTORS

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CSIS | CENTER FOR STRATEGIC &
INTERNATIONAL STUDIES

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EXECUTIVE SUMMARY

IN NOVEMBER 2011, PRESIDENT OBAMA DECLARED, “the United States is turning [its] attention to the vast potential of the Asia Pacific region.” This announcement of a deliberate “rebalance” to Asia and the Pacific reflected the American people’s growing recognition of the importance of the region to U.S. interests and the need to reassert American engagement and leadership after the uncertainty caused by the 2008 financial crisis and a decade of combat operations in Southwest Asia. The Obama administration’s rebalance built on policies begun in the George W. Bush and prior administrations and added critical new elements such as participation in the East Asia Summit and enhanced engagement with Southeast Asia.

Overall, this increased focus on Asia and the Pacific enjoyed bipartisan support in the Congress, but concerns emerged on both sides of the aisle about whether the administration had articulated a strategy to justify the resources required for new military construction needed to support U.S. presence in the region. Seeking an external perspective on the administration’s approach, Congress required the Department of Defense to commission an independent assessment of U.S. strategy and force posture in the Asia-Pacific under the 2012 National Defense Authorization Act. Tasked by the Department to conduct that study, the Center for Strategic and International Studies (CSIS) concluded in September 2012 that there was a strong consensus in the U.S. government and among allies and partners with respect to the objectives of rebalancing U.S. force posture, but no durable framework to guide specific lines of effort.

The 2012 CSIS study found that the administration needed a clearer articulation of U.S. strategy to explain the requirement for forward posture. CSIS noted that the Pacific Command requires a force posture that in peacetime enables the U.S. military to build partner capacity, cooperate on common challenges such as humanitarian assistance, and conduct joint and combined training and exercises to enhance interoperability, and in wartime can prevail and achieve U.S. objectives. To that end CSIS made recommendations, including better alignment of regional engagement strategy within Pacific Command and with other government agencies; the stationing of an additional attack submarine in Guam; deployment of a second amphibious ready group to the Pacific; deployment of a Terminal High Altitude Area Defense battery to Guam; construction of a second fuel pipeline on Guam; and rotational deployments of U.S. forces to South Korea. Many of these recommendations were subsequently implemented by the Department of Defense, and Congress has approved the Department’s annual requests for regional military construction. The 2012 study recommendations are at Appendix B.

Since 2012, however, the international security environment has become significantly more complicated. China has accelerated the frequency of its coercive activities and the pace of its island-building in the East and South China Seas, and North Korea has continued developing its nuclear and ballistic missile capabilities. Meanwhile, Russian revanchist activities and the emergence of the Islamic State of Iraq and the Levant have competed with the Asia-Pacific for attention and resources. Economically, the United States is recovering from the global financial crisis

and Congress has passed Trade Promotion Authority necessary to complete the Trans-Pacific Partnership, yet political challenges in Washington have resulted in steep cuts in planned defense spending projections and limited the Defense Department's flexibility to respond to strategic changes. Militarily, the Pacific Command has fully embraced the rebalance, but the anti-access challenge is worsening and China's tolerance for risk has exceeded most expectations. Taken together, these trends demonstrate that the United States will need to remain focused on implementing the rebalance to the Asia-Pacific and adapting as regional circumstances change.

Recognizing the need to review the rebalance in light of changes in the security environment, Congress tasked the Department of Defense to commission a new independent assessment under the 2015 National Defense Authorization Act. This study revisits earlier recommendations on U.S. strategy and force posture, but pursuant to the congressional tasking, it also assesses the capabilities of U.S. allies and partners in light of evolving regional security challenges. The seven sections that follow address: 1) the overall strategic picture in Asia and the methodology for this study; 2) U.S. interests and risks in the region; 3) the status of U.S. strategy and current and future force posture; 4) the roles and capabilities of regional allies and partners; 5) capability gaps and shortfalls; 6) security issues in the Arctic; and 7) recommendations for U.S. strategy and force posture in the Asia-Pacific region toward 2025.

This study reconfirms the 2012 CSIS finding that the United States will continue to pursue three historically interrelated interests in Asia and the Pacific: protection of the American people and U.S. allies; promotion of trade and economic opportunity; and support for universal democratic norms. Forward military posture and engagement will remain indispensable to these objectives in the years ahead, both to shape patterns of cooperation and to ensure effective contingency responses if crises or conflicts do occur.

Nevertheless, the study team is concerned that the administration's rebalance effort may be insufficient to secure these interests. Chinese and North Korean actions are routinely challenging the credibility of U.S. security commitments, and at the current rate of U.S. capability development, the balance of military power in the region is shifting against the United States. Robust funding is needed to implement the rebalance. Capping resources at the budget levels set by the Budget Control Act would severely constrain implementation of the rebalance. Although the 2015 budget agreement was a positive step, it does not provide the needed long-term funding levels and stability. To fully implement the recommendations of this study requires resources at a level above the president's budget. The rebalance to the Asia-Pacific will therefore require the Congress to forge a long-term bipartisan agreement to fund defense at the higher levels for which there is a broad consensus

The CSIS study team thus identified four broad lines of effort that build upon and go beyond current administration efforts to sustain and implement the defense component of the rebalance in a more competitive and challenging regional environment.

- **First, Washington needs to continue aligning Asia strategy within the U.S. government and with allies and partners.** The study finds that although the Obama administration has issued a series of speeches and documents on the rebalance, there remains no central statement of the U.S. government's rebalance strategy. In interviews with leaders throughout the Department of Defense, in other U.S. departments and agencies, on Capitol Hill, and across the Asia-Pacific, the study team consistently heard confusion about the rebalance strategy and concern about its implementation. Indeed, a 2014 study by CSIS found that language used to describe the rebalance has changed substantially (and repeatedly) since its announcement in 2011. Addressing this confusion will require that the executive branch develop a clear and coherent strategy and discuss that strategy with Congress as well as U.S. allies and partners across the world. We recommend preparing an Asia-Pacific strategic report; increasing administration outreach to Congress; ensuring alignment between strategy and resources; better coordinating U.S. strategy with allies and partners; and expanding confidence building and crisis management with China.
- **Second, U.S. leaders should accelerate efforts to strengthen ally and partner capability, capacity, resilience, and interoperability.** The study finds that security challenges are increasingly outpacing the capabilities of frontline regional states. Building ally and partner security capability and capacity is in the United States' interest. Many states are struggling to mitigate regional security risks that range from major humanitarian crises to maritime disputes to missile threats. Increased regional capacity to manage security challenges lessens the dependency on the United States. Strengthening security capability, capacity, resilience, and interoperability in Asia requires a strategy that differentiates the requirements of highly capable allied militaries from those of allies and partners with more basic defense needs. We recommend pursuing federated approaches with highly capable regional allies; building maritime security capacity in Southeast Asia; forming a standing U.S. joint task force for maritime security; encouraging Japan to establish a joint operations command; and further deepening regional whole-of-government humanitarian assistance and disaster relief expertise.
- **Third, the United States should sustain and expand U.S. military presence in the Asia-Pacific.** The study finds that leaders in Washington and in foreign capitals are concerned about the long-term resilience and sustainability of legacy force posture, particularly in Northeast Asia. The U.S. military is a stabilizing force in the region, helping to deter conflict on the Korean Peninsula and manage crises from the East China Sea through the Indian Ocean. Yet, the Chinese People's Liberation Army's anti-access/area denial capabilities that many once viewed as Taiwan-specific are rapidly expanding to the Second Island Chain and beyond, affecting not only an increasing number of U.S. allies and partners, but also U.S. territories such as Guam. Diversification of U.S. military posture remains critical not simply for resilience against challenges in Northeast Asia, but also to contend with the growing importance of Southeast Asia and the Indian Ocean region. We reject the option of withdrawal from the Western Pacific because of these new challenges. Such a withdrawal would lead to rapid deterioration of the security environment and render operations more difficult rather than easier. In this report, the authors offer recommendations needed to sustain

a predictable, credible, and robust forward presence capable of shaping the peacetime security environment and prevailing in the event of conflict. We recommend continuing to implement and resource key posture initiatives; increasing surface fleet presence; improving undersea capacity; deploying within the theater additional amphibious lift to allow enhanced theater-wide engagement and crisis response; continuing to diversify air operating locations; bolstering regional missile defenses; advancing and adapting the U.S. Army's Regionally Aligned Forces concept; addressing logistical challenges; stockpiling critical precision munitions; and enhancing intelligence, surveillance, and reconnaissance cooperation with allies within the region.

- **Fourth, the United States should accelerate development of innovative capabilities and concepts for U.S. forces.** The study finds that as the United States looks to clarify its Asia-Pacific strategy, strengthen regional allies and partners, and diversify military posture, U.S. leaders will also need to pursue innovative capabilities and concepts to address the most challenging military risks. The authors identified critical capability gaps in two areas. First are those capabilities required to defend against emerging risks to U.S. forces, such as the growing ballistic missile risk to U.S. ships and forward bases. Second are those capabilities that would give the United States an asymmetric, cost-imposing counter to potential regional competitors. The United States requires both sets of investments to ensure that the U.S. military retains the ability to project combat power in the Asia-Pacific well into the future. We recommend institutionalizing a culture of experimentation; encouraging rapid platform evolution; developing advanced long-range missiles; funding innovative missile defense concepts; fielding additional air combat systems; exploiting the U.S. undersea advantage; and augmenting space, cyber, and electronic warfare capabilities.

Executing an effective Asia strategy will require a clear and consistent approach across the U.S. government; continuous dialogue with regional allies, partners, and competitors; robust economic engagement throughout the region; development of new military capabilities for deterrence and defense; prioritization of critical activities and their associated funding streams; and close cooperation between the executive and legislative branches. This study assesses U.S. progress to date and recommends initiatives necessary to protect U.S. interests in the Pacific Command area of responsibility through 2025.



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In addition to those within the U.S. government, the authors consulted with many nongovernmental experts in Washington as well as government officials and nongovernment experts in the Asia-Pacific region. Their insights and perspectives informed the report's findings and analysis, particularly on regional views of the United States and of the rebalance to Asia.

Finally, we wish to thank the senior review group for providing their valuable time to review the findings of this report: the Honorable Richard Armitage, Lt. Gen. Thomas Conant (USMC, ret.), the Honorable Michèle Flournoy, Lt. Gen. Wallace "Chip" Gregson (USMC, ret.), Gen. Gary North (USAF, ret.), Adm. Gary Roughead (USN, ret.), Gen. Walter "Skip" Sharp (USA, ret.), and the Honorable James Steinberg. The authors are also grateful to Mr. Andrew Shearer, former national security adviser to the prime minister of Australia, who provided valuable insights while a visiting fellow at CSIS.

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1 | INTRODUCTION

The Obama administration's rebalance to the Asia-Pacific region was intended to demonstrate the United States' commitment to work closely with allies and partners to maintain regional security and prosperity. Since its announcement in 2011, administration officials have taken actions to execute the rebalance. Congressional support has been necessary for implementation of many of these actions, but some questions have persisted in Congress about aspects of U.S. strategy. In an effort to address these concerns, the National Defense Authorization Act of 2012 required that the Department of Defense (DOD) commission an independent assessment of U.S. strategy and force posture in the Asia-Pacific. The Center for Strategic and International Studies was tasked with that independent assessment and issued its findings in September 2012, which helped to secure funding for critical efforts and identified potential new initiatives. Now, three years after CSIS's first study, the Congress has again requested an independent assessment that takes into account not only U.S. strategy and force posture, but also that of U.S. allies and partners. The assessment that follows fulfills this tasking and sets forth an agenda for the United States in the Asia-Pacific through 2025.

OVERVIEW OF THE REBALANCE TO ASIA

President Barack Obama spoke of the United States' interest in, and aspirations for, the Asia-Pacific during his 2011 speech to the Australian Parliament.

Here, we see the future. As the world's fastest-growing region—and home to more than half the global economy—the Asia Pacific is critical to achieving my highest priority, and that's creating jobs and opportunity for the American people. With most of the world's nuclear power and some half of humanity, Asia will largely define whether the century ahead will be marked by conflict or cooperation, needless suffering or human progress.¹

Subsequently, then-Secretary of State Hillary Clinton published a piece in *Foreign Policy* extolling "America's Pacific Century."² The piece highlighted the significant role the Asia-Pacific region plays for the United States, and how the United States has been, and will remain, engaged in the region.

As explained by the Obama administration, the rebalance to the Asia-Pacific is a whole of government effort with three primary lines of effort. First (and most visible to date) is the security component. Second is the economic element, represented by the Trans-Pacific Partnership. Third is the pursuit of human dignity.³ In this study, Congress required an assessment of only the security element of the rebalance, although both Congress and the study authors recognize the importance of the other two components.

In August 2015, Secretary of Defense Ashton Carter described the defense component of the Asia-Pacific rebalance as consisting of the following four elements:

- Investing in future capabilities relevant to the Asia-Pacific security environment;
- Fielding adequate numbers of key capabilities already developed and finding new ways to use existing systems;

- Adapting regional force posture to be “geographically distributed, operationally resilient, and politically sustainable,” including deployment of more rotational forces into more places in Asia and an increased pace of exercises and training;
- Reinforcing alliances and partnerships.⁴

Secretary Carter also noted that, amid its rebalance efforts, the U.S. relationship with China would be a complex one, mixing elements of cooperation and competition. The U.S. rebalance policy seeks to create space for China to contribute to peace and prosperity throughout the region while deterring Chinese aggression or coercion and defending U.S. interests.

Assessing the Defense Component of Rebalance

Four years into the rebalance, the Defense Department should receive high marks for sustained attention to the Asia-Pacific. Measured by senior-leader focus on the region, including meeting regularly with senior leaders from the region—both in Asia and in the United States—the United States is maintaining a steady pace of engagement. Further, the Defense Department has increased the proportion of its capabilities dedicated to or deployed in the region. The Pentagon has also deployed new capabilities to the Asia-Pacific, including the F-22, *Virginia*-class submarines, and Terminal High Altitude Area Defense (THAAD), among others. Together with the negotiation of new and updated posture agreements with regional allies and partners, and the increase in exercises with countries from the Indian Ocean region through East Asia, these changes suggest the Defense Department is indeed focused on a long-term rebalance strategy that includes capabilities, posture, and relationships.

Nevertheless, the United States will need to continue and in some cases accelerate investments in regional relationships, posture, operational concepts, and capabilities if it is to achieve the strategic goals of the rebalance. The past 14 years of war have left the military services with significant challenges in recapitalizing equipment used at a pace faster than programmed, reestablishing full-spectrum force readiness, and confronting an expanding range of challenges from state and nonstate actors globally. It is doing so while drawing down forces and structure and, the recent two-year budget deal notwithstanding, with lower long-term defense spending projections than planned even a few years ago. China’s rapidly expanding military investments and increasingly coercive actions in the region demonstrate both the long-term and near-term challenges facing the United States and its allies and partners in protecting vital regional and global interests. Although Washington seeks to cooperate with Beijing where it can, the United States must also ensure that its engagements, posture, concepts, and capabilities allow it to shape, deter, and, if necessarily, decisively defeat threats to U.S. interests. The threat of invasion by North Korea continues to decrease, but the North’s missile and nuclear programs continue unabated while scenarios for instability within North Korea appear less remote going forward.

Over the last few years, the Asia-Pacific region has witnessed significant developments that require a reappraisal of U.S. strategy and force posture, as well as an assessment of the strategy and force posture of U.S. allies and partners. Many of these trends have improved prospects for regional security, but some new challenges are emerging, and some existing risks are worsening. These trends span issue areas of geopolitics, diplomacy, economics, domestic politics, and military considerations.

Geopolitically, most states in the Asia-Pacific region are embracing closer security and economic ties with the United States. At the same time, however, states across the region have become more sensitive to China's growing political, economic, and military power, and are potentially vulnerable to Beijing's increasingly coercive behavior.

Polls in Asian countries indicate strong support for the rebalance, with the notable exception of China.⁵ The United States is working bilaterally, trilaterally, and multilaterally to reinforce critical rules and norms that underpin a secure and prosperous regional and international order. Yet despite these efforts, there is more acrimony and tension in the U.S.-China relationship, a general deterioration in relations with Russia, and increasing bellicosity from North Korea. In preparing this study, the authors heard a consistent refrain from U.S. allies and partners that, despite their appreciation for the goals of the rebalance, many regional observers worry that U.S. efforts to manage the Iran nuclear negotiations, Russia's invasion of Ukraine, and conflict with the Islamic State of Iraq and the Levant (ISIL) have distracted it from fully implementing the rebalance.

The administration has taken important steps to reinforce the rebalance strategy, beginning with the 2012 Defense Strategic Guidance and recently, the August 2015 Asia-Pacific Maritime Security Strategy prepared for Congress.⁶ The authors also found that the U.S. Pacific Command (PACOM) is well aligned with the rest of DOD in its various lines of effort, including theater campaign planning. Much progress has been made since 2012, when CSIS scholars found significant disconnects across the U.S. government and with allies and partners. Nevertheless, the implementation of the rebalance may be insufficient to secure U.S. interests. Actions by countries in the region routinely challenge the credibility of U.S. security commitments, and U.S. capability development is not keeping pace with challenges by potential competitors, resulting in the balance of military power in the region shifting against the United States.

First, *the Obama administration still has not articulated a clear, coherent, or consistent strategy for the region*, particularly when it comes to managing China's rise. The language used to explain the rebalance in administration speeches and documents has varied substantially over the last four years.⁷ The 2012 CSIS independent assessment highlighted this shortcoming, but it remains a problem in terms of reassuring allies and partners and sustaining congressional support.

Second, *cuts to the defense budget from 2009–2015 have limited the Defense Department's ability to pursue the rebalance*. The October 2015 budget agreement notwithstanding, long-term budget uncertainty and the large cuts already implemented represent major changes from the environment that existed when CSIS scholars conducted the 2012 review.

Third, while the U.S. military has instituted major posture changes and is developing new military capabilities to strengthen the rebalance, *the anti-access/area denial (A2/AD) challenge is increasing* and concerns are growing about the ability of potential adversaries to hold at risk forward-deployed and forward-operating forces throughout the region. Chinese military strategy places a premium on investments in A2/AD capabilities. Its A2/AD umbrella includes long-range cruise and ballistic missiles, advanced integrated air and missile defense (IAMD) systems, and submarines. The goal of these systems is to restrict or outright deny an attacker freedom of entry or maneuver. Chinese investments in cyber; electronic warfare (EW); a blue-water navy; missiles; and intelligence, surveillance, and reconnaissance (ISR) capabilities serve as powerful reminders of China's plans to

push the United States out of the region in a conflict. These capabilities give China the ability to hold at risk U.S. installations and naval assets in the Western Pacific, U.S. allies and partners, and the freedom to use international air and waterways on which the U.S. economy depends. Absent major operational or technology breakthroughs by the United States and its allies and partners, substantial risk remains that China's strategy could undermine the U.S. military's ability to defend U.S. interests in the Asia-Pacific.

Fourth, *China's tolerance for risk has exceeded most expectations*—as demonstrated by Beijing's increased operational tempo and construction of military airfields and facilities on seven features in the Spratly Islands. This risk tolerance requires the United States to reassess its China policy, and may lead allies and partners to do the same.

Taken together, these trends suggest that the U.S. rebalance must be enhanced to fulfill defense and deterrence requirements in the PACOM area of responsibility (AOR). Executing an effective Asia-Pacific strategy will require a clear and consistent but agile approach; continuous dialogue with regional allies, partners, and competitors; robust economic engagement throughout the region; development of new military concepts and capabilities for deterrence, defense, and crisis management; divestment of lower-priority activities if budget constraints continue; and close cooperation between the executive and legislative branches. The pages that follow suggest how the United States might adopt just such an approach.

STUDY BACKGROUND

In 2012, CSIS released a report entitled "U.S. Force Posture Strategy in the Asia Pacific Region: An Independent Assessment," co-directed by David Berteau and Michael Green. That study was conducted pursuant to Section 346 of the National Defense Authorization Act for Fiscal Year 2012. The Congress required that the Department of Defense commission an independent assessment of force posture options for the Pacific Command area of responsibility, to include the following elements: a review of current and emerging U.S. national security interests in the Pacific Command area of responsibility; a review of current U.S. military force posture and deployment plans of Pacific Command; options for the realignment of U.S. forces in the region to respond to new opportunities presented by allies and partners; and the views of noted policy leaders and regional experts, including military commanders.

The 2012 study found that the consequences of conflict with China are almost unthinkable and should be avoided to the greatest extent possible consistent with U.S. interests. The study also noted the need to achieve the right combination of assurance, dissuasion, and deterrence to maintain a favorable peace and avoid conflict. The study concluded, "the ability of the United States to work with allies and partners to achieve those peaceful ends will depend on the perceptions, both of allies and partners and of China, of the United States' ability to prevail in the event of conflict. U.S. force posture must demonstrate a readiness and capacity to fight and win, even under more challenging circumstances associated with A2/AD and other risks to U.S. military operations in the Western Pacific. Forward presence and engagement are not simply helpful to shaping the environment and setting the stage for effective responses to contingencies—they are indispensable for minimizing the likelihood of larger conflicts."⁸

The 2012 study assessed U.S. strategy and force posture, resulting in a set of policy options designed to strengthen the rebalance. While the Defense Department has implemented certain rec-

ommendations, such as upgrading U.S. Army Pacific (USARPAC) to a four-star command and stationing an additional attack submarine in Guam, much work remains to be done. Most importantly, despite the U.S. Pacific Command's better alignment, Chinese coercive activities in East Asia have increased and highlight a growing disconnect between Washington's policies and rising regional threats. This disconnect is evidenced by the increasing concern from regional allies and partners that the U.S. commitment to the rebalance is waning.

2015 Congressional Tasking

Acknowledging the need for a continued commitment to the Asia-Pacific region, Section 1059 of the National Defense Authorization Act for Fiscal Year 2015 required that the secretary of defense commission an independent review of the U.S. Asia-Pacific rebalance. This study fulfills that tasking. The Congress required that the study focus on the 2015 to 2025 period and that it include the following:

- Risks to U.S. national security interests in the Pacific Command area of responsibility as a result of changes in the security environment through 2025;
- Assessment of the current force posture and planned adjustments by the United States and its allies and partners in the region, as well as the expected impact of such adjustments on the U.S. strategy to rebalance to the Asia-Pacific region;
- Evaluation of the key capability gaps and shortfalls of the United States and its allies and partners in the Asia-Pacific region, including undersea warfare (including submarines); naval and maritime; ballistic missile defense (BMD); cyber; munitions; and intelligence, surveillance, and reconnaissance capabilities;
- Analysis of the willingness and capacity of allies, partners, and regional organizations to contribute to the security and stability of the Asia-Pacific region, including potential required adjustments to U.S. military strategy based on that analysis;
- Appraisal of the Arctic ambitions of actors in the Asia-Pacific region in the context of current and projected capabilities, including an analysis of the adequacy and relevance of the Arctic Roadmap prepared by the navy;
- Evaluation of theater security cooperation efforts of Pacific Command in the context of current and projected threats, and desired capabilities and priorities of the United States and its allies and partners;
- Views of noted policy leaders and regional experts, including military commanders, in the Asia-Pacific region.

Appendix A contains the statutory language and shows how this report addresses each of the congressional requirements.

REPORT METHODOLOGY

In seeking to fulfill the requirements set forth by the Congress, the study authors established a project team consisting of experts on Asia and security from across the institution. Members of the project team met with senior officials throughout the Asia-Pacific and conducted research in

Australia, China, Indonesia, Japan, Malaysia, the Philippines, Singapore, South Korea, Taiwan, and Vietnam. Members of the project team also traveled within the United States to Guam and Hawaii and consulted relevant officials in the Washington, D.C., region.

To conduct this study, the CSIS team adopted a strategy-driven, budget-informed approach. This analysis begins with national interests, then identifies potential risks to those interests, and finally determines a strategy and associated policies. The study assesses U.S., ally, and partner capabilities and makes recommendations for closing capability gaps and capacity shortfalls. The study notes that the fiscal environment will drive the viability of many recommendations and therefore includes an assessment of the resource implications of its recommendations.

Senior Review Group

In an effort to engage noted policy leaders in Washington, the study team enlisted a senior review group to assess the study's preliminary findings. Members of the review group provided valuable insights, but the authors take full responsibility for the content of the study. The senior review group included:

- The Honorable Richard Armitage, former deputy secretary of state;
- Lt. Gen. Thomas Conant (USMC, ret.), former deputy commander of PACOM;
- The Honorable Michèle Flournoy, former under secretary of defense for policy;
- Lt. Gen. Wallace "Chip" Gregson (USMC, ret.), former assistant secretary of defense for Asian and Pacific security affairs and former commander of Marine Corps Forces Pacific;
- Gen. Gary North (USAF, ret.), former commander of Pacific Air Forces (PACAF);
- Adm. Gary Roughead (USN, ret.), former chief of naval operations and former deputy commander of PACOM;
- Gen. Walter "Skip" Sharp (USA, ret.), former commander of U.S. Forces Korea (USFK), Combined Forces Command (CFC), and United Nations Command (UNC); and
- The Honorable James Steinberg, former deputy secretary of state.

Report Structure

This report responds to the specific requirements set forth in Section 1059 of the 2015 National Defense Authorization Act. Section 1 has introduced the report and outlined the congressional tasking and the methodology used in this report. Section 2 describes U.S. interests and risks in Asia through 2025. Section 3 addresses the first of three major pillars in the Defense Department's portion of the U.S. rebalance effort: U.S. defense posture in Asia. Section 4 addresses the second major pillar: the role, capabilities, and cooperation of regional allies, partners, and organizations. Section 5 addresses the third pillar of the defense rebalance: capabilities and concepts, and associated gaps and shortfalls. Section 6 assesses the Arctic ambitions of various countries and discusses the U.S. Navy (USN) arctic roadmap, as explicitly called for by Congress. Section 7 summarizes the study team's highest-priority recommendations for advancing the U.S. rebalance to Asia. Additional recommendations appear in Section 5 and Appendix D.



2 | U.S. INTERESTS AND RISKS IN ASIA

When President Obama announced the rebalance to the Asia-Pacific, he proclaimed, “The United States is turning its attention to the vast potential of the Asia Pacific region. . . . Our new focus on this region reflects a fundamental truth—the United States has been, and always will be, a Pacific nation.”⁹ Indeed, the United States has engaged with Asia since at least 1784, and U.S. interests in the region have been largely consistent for over 230 years. Understanding these interests, and potential risks that might emerge over the next decade, is vital to developing a regional strategy. This section therefore begins by defining U.S. interests in Asia. The section then addresses a series of national security concerns, ranging from China’s rise and North Korea’s belligerence to the challenges from nonstate actors.

U.S. INTERESTS IN ASIA

Throughout its history, the United States has pursued three interrelated core interests in Asia. First, U.S. leaders have sought to protect the security of the American people and U.S. allies. Second, U.S. leaders have attempted to expand trade and economic opportunity. Third, U.S. leaders have supported universal democratic norms. These three interests form a longstanding framework for U.S. engagement in Asia and represent clear and consistent national interests.

In pursuing these interests, particularly the desire to protect the security of the American people, U.S. leaders have focused primarily on preventing the rise of a hostile hegemon within Asia that would threaten U.S. interests in the Pacific. This geostrategic objective motivated U.S. policy during the rise of Japan in the first half of the twentieth century and throughout the Cold War with the Soviet Union during the second half of the twentieth century. China’s coercive behavior, particularly in disputed maritime areas, is once again raising questions about whether the United States needs to be concerned about a hostile hegemon in Asia. However, Washington’s containment policy during the Cold War is not the historical norm for the United States, nor would such a strategy be feasible or appropriate vis-à-vis China today.

Managing the rise of the Asia-Pacific will require a mix of engagement, deterrence, and reassurance toward the People’s Republic of China (PRC). Although the changing security environment presents challenges, a fundamental strength of the United States is that it has a stake in the success of every nation, provided that those states uphold the rules and norms that have underpinned the regional and international order for the last 70 years. China has the potential to play a critical role in either reinforcing or undermining regional and international order, so this section first addresses the opportunities and risks posed by China’s rise.

CHINA

The course charted by China’s reemergence as a great power over the next few decades represents the primary strategic challenge for the United States and for the Asian security landscape writ large. If China’s economic, military, and geopolitical influence continues to rise at even a modest pace during this period, the world will witness the largest shift in the global distribution of power since the rise of the United States in the late nineteenth and early twentieth centuries. In many ways, it is precisely the multidimensional character of China’s resurgence—whether

through Chinese initiatives like the Asian Infrastructure Investment Bank (AIIB) or signals from the global community, such as the International Monetary Fund's November decision to add China's currency, the renminbi, to its basket of major global currencies through the extension of Special Drawing Rights—that has been among its most striking features. Moreover, if China surpasses the United States as the world's largest economy in the next 10 to 15 years, it will mark the first time in centuries that the world's economic leader will be non-English speaking, non-Western, and non-democratic.

Of course, these are some major "ifs." To stay on the path toward realizing this new global balance of power, China's leaders will have to navigate successfully the many challenges they face both at home and abroad. They will have to demonstrate sufficient foresight and flexibility to respond to immediate tactical concerns while always staying mindful of their geostrategic long game. They will have to prove that China's political and economic rise will be as sustainable over the next 30 years as it has been over the last third of a century, even though the task they are confronting now, as highlighted by the economy's present struggles to maintain momentum, arguably is much more complex than that faced by their predecessors. They will have to address worsening demographic challenges, particularly population aging. They will have to craft a workable strategic framework for channeling the country's growing wealth and power in a way that facilitates China's return to the dominant position in East Asia without sparking conflict with their neighbors or, more importantly, with the United States. More fundamentally, they must find an answer to the nagging question of what type of great power China wants to be, including whether or not to adhere to long-established global rules they had no hand in shaping.

Against this backdrop, finding a means to navigate these challenges in a way that avoids war and promotes sustained regional, and ultimately global, economic growth is essential to ensuring security and prosperity. For U.S. allies and partners in the region, getting China right will be essential to determining how they can contribute both individually and collectively to keeping Asia safe and prosperous in a period of great uncertainty and diminishing resources. Successfully establishing a favorable balance of power in East Asia will be impossible, however, without a clearer understanding of the fundamental underpinnings of China's growing power and influence under the Chinese leadership team that took power in 2012.

Chinese Internal Dynamics

A debate running through much of the public commentary on China's return to the world stage centers on the personal role of Chinese President and Communist Party General Secretary Xi Jinping in shaping Beijing's emerging strategy. At its core, the discussion about Xi turns on assessments of his personal power, and particularly whether China's shift toward greater global activism under his stewardship is a function of Xi's unique style and personal authority.¹⁰ Some observers argue that Xi is not much different from his two immediate predecessors, Jiang Zemin and Hu Jintao—China itself may be more powerful, but Xi is still a captive of collective decision-making.¹¹ Others contend that Xi has palpably more political gravitas and an accompanying unity of purpose that look more like the stature of the lions of the Chinese Communist Party (CCP), Mao Zedong and Deng Xiaoping.¹² Still others suggest that trying to gauge Xi's strength in a political system as opaque as China's is a fool's errand.¹³

Nevertheless, the observable facts of Xi Jinping's rule thus far do indicate that he has managed to accrete substantial power to himself in the comparatively short time he has been in office.¹⁴ Re-viewing the record of his accomplishments, we can see that he has achieved several things that came to Jiang and Hu very late in their tenures, or even eluded them entirely.

- Xi has used a coercive toolkit, most notably through his anticorruption drive, to rein in the institutions that constitute the regime's key levers of power—the party bureaucracy, the security services, and China's military, the People's Liberation Army (PLA).
- Xi has created several new high-level party policy bodies and sits as chair on all of them.
- Xi has changed the nature of policymaking at the senior-most levels of the Party, diminishing the deliberative role of the regime's formal institutions—especially the government ministries—in favor of a more informal, “kitchen cabinet” style of policy advisory.
- Xi has weakened the authority of his retired peers, making it harder for them to intervene in policymaking from behind the scenes.

This does not mean that Xi wields unencumbered power. Regardless of the number of new policy mechanisms he creates or the number of retired and sitting officials he purges, he still faces a Politburo lineup that he had very little hand in shaping, and he presumably will have to wait for the next party congress in 2017 to change that in any significant way. He also faces passive resistance to his agenda from powerful vested interests in the state-owned enterprises, their allies in the state machinery, and from provincial officials who resent his efforts to reverse three decades of devolving power from the center to the localities. Add to this the difficulties of managing the economy's transition to a slower-growth, consumption- and services-led development model, as well as the uncomfortable pairing of a bold economic reform vision statement that calls for freeing up market forces with an unrelenting ideological and political retrenchment program, and it is clear that Xi's pathway to becoming the transformative leader he obviously aspires to be is very much a journey in progress.

Chinese Foreign Policy

With such a full plate at home, it is surprising that President Xi has managed to find the wherewithal to also craft a redesigned foreign policy strategy. In late November 2014, he delivered a keynote address to a Central Foreign Affairs Work Conference of the CCP, the first convened under his stewardship as China's top leader. Such meetings are exceedingly rare and equally authoritative. In his speech, Xi laid out a sweeping foreign policy platform, suggesting that despite the many challenges he and his colleagues are facing at home, a proactive, balanced, and (where necessary) more muscular foreign policy approach is likely to be a hallmark of his rule.¹⁵ In fact, Xi's approach seems to take as its operating principle that Beijing should be wielding its new-found strategic heft in the manner of a traditional great power.

China's regional neighbors and the United States should take at least some comfort from Xi's affirmation of several of the key foreign policy precepts that have guided Chinese diplomacy for more than a decade. He noted in his speech, for example, that China will continue to follow the path of “peaceful development,” or the notion that Beijing's neighbors and other major partners

may rest easy that China's rise can only be accomplished by peaceful means and will be pursued with an eye toward achieving "win-win" outcomes for all concerned.¹⁶ With China's rapid military modernization, sizable year-on-year defense budget increases, and forthright assertion of its territorial sovereignty claims, it is easy to lose sight of the fact that peaceful development acts as an important conceptual brake on a runaway military buildup.¹⁷ Implicit in its characterization of China's priorities is the notion that economic development—not the path of arms races and military adventurism followed by the Soviet Union—is paramount in securing the country's return to regional preeminence.

Likewise, Xi acknowledged that China remains in a "period of strategic opportunity" running through at least 2020, or roughly the period of Xi's time in office.¹⁸ This concept encapsulates the CCP's primary external strategic guideline and reflects the leadership's judgment that China is enjoying a window in which a benign external security environment allows it to focus on its internal development. Moreover, implicit in Xi's endorsement of the period of strategic opportunity is a signal that China is not overtly seeking to be a disruptive power either regionally or globally. As long as the concept remains in force, there will be hard limits on Beijing's willingness and ability to set out on a truly revisionist course aimed at fundamentally reshaping the balance of power in East Asia. Authoritatively acknowledging that China's external security environment will remain largely placid for the foreseeable future makes it far more difficult for the leadership to argue—as have revisionist powers in the past—that they must assert Chinese power more overtly and forcefully because the country's interests in the region are somehow under threat.

However, Xi's speech was much more than just old wine in new bottles. Perhaps its most striking feature is the way in which its content seems to move China more rapidly away from Deng Xiaoping's longstanding injunction for the country to maintain a low profile internationally. Foreign assessments have long argued that China seeks "to become the preeminent Asian power."¹⁹ Xi now argues that China's biggest opportunity lies in the determined leveraging and further development of its strength and influence internationally. He also says, "China should develop a distinctive diplomatic approach befitting its role [as] a major country." So, in effect, Xi is telling his audience that China already is a great power, and should start acting like one.

In fact, Xi's remarks in this vein also would seem to be subtly altering the definition of the period of strategic opportunity by stressing greater Chinese activism. Whereas the original framework carries the notion of China meekly accepting its advantageous external environment as a gift to be sustained within the constraints of its limited capabilities, Xi's formulation would seem to suggest a much more forward-leaning approach whereby China seeks to shape the contours of the period of strategic opportunity through its growing power. In his speech, Xi acknowledged the deep interdependence between China's domestic and foreign policies, but again, he chose to frame that linkage in a seemingly different way. Instead of being the beneficiary of good fortune on its periphery, Xi appears to view China's domestic development as an engine for the promotion and expansion of a stable and secure abroad. Implicit in such a description is a sense of immense faith in the inevitability and sustainability of China's rise.

China's neighbors have already been experiencing the operational effects of this burgeoning confidence in Beijing's foreign policy approach. On the upside, Xi has called for improving ties with China's near abroad by pursuing more focused, and more adept, regional diplomacy. In his foreign policy address, Xi made repeated references to the need for Beijing to adopt "win-win" strategies in its approach to its neighbors, and he suggested that several new elements should be added to the country's diplomatic toolkit—with specific references to systematically developing Chinese soft power—to achieve that aim. Xi also sees robust economic diplomacy as a key element in his overall diplomatic strategy. Signaling to its neighbors that China fundamentally grasps the notion that, in Asia, economics is security, underpins Chinese initiatives like the AIIB and the "One-Belt, One-Road" projects, which are aimed at crafting a modern-day version of the ancient Silk Road linking China with Central, South, and Southeast Asia, Africa, and Europe. Implying through such programs that the economic health of the region is intimately tied to China's continued growth and prosperity also serves to advance Xi's seeming predilection for a more multidirectional foreign policy approach than that of his predecessors.

Moreover, Xi sees U.S. power in the region as a lesser constraint on China's exercise of its influence—both benign and coercive—than earlier leaders. In fact, while still meriting pride of place in the hierarchy of Beijing's foreign relationships, ties with the United States seem less of a preoccupation for Xi than for his predecessors. This is not to suggest that Xi is not eager for stable and healthy U.S.-China ties. Rather, he seems to prefer a more casual approach to the relationship that lacks the eagerness and rapt attention that characterized the policies of Hu Jintao and Jiang Zemin. This less awestruck view of U.S. power contributes to Xi's greater tolerance for risk and has the important side effect of imbuing Xi with greater confidence to more deliberately court China's other important foreign partners rather than pursuing a single-minded focus on the United States. Nevertheless, leaders in China's neighboring countries are befuddled by the leadership's ostensible inability, at least so far, to sustainably reconcile the contending impulses to seek improvements in relations along China's periphery while simultaneously pushing hard to reinforce its expansive territorial claims and to expand its military footprint. Xi's unflinching assertion of China's sovereignty claims over disputed territories in both the East and South China Seas is generating a pervasive level of insecurity among China's bordering nations that risks invalidating Beijing's good-neighbor policy mantra and increasing the desire for a strong U.S. security and economic presence in the region. In practical terms, China's robust embrace of the exercise of its newfound power and influence is already having a meaningful impact on its approach to some of its critical peripheral relationships that in turn has a direct correlation to the persistence of some regional hotspots and the possible emergence of new ones.

In its management of ties with Japan, for example, the notion that China should behave like a traditional great power means that it must seek Japanese acquiescence to a subordinate position in both the bilateral relationship and in the overall regional power dynamic. Much of Beijing's approach is designed to belittle Japan by creating a persistent sense of pressure while simultaneously increasing Tokyo's sense of isolation. Despite some improvement in ties in recent months, there is little evidence that Beijing's fundamental instinct to diminish Japan's regional influence has changed. Even in its evolving relationship with its erstwhile ally, North Korea, China's actions seem

meant to convey to Pyongyang that the “special relationship” of the past is no more, having been replaced with a so-called “normal” state-to-state relationship.²⁰ With that as the premise, a Chinese leadership bent on wielding its strength will expect North Korea to accept its position as Beijing’s client. Given North Korean leader Kim Jong-un’s apparent penchant to turn toward provocations when he judges he is being ignored, Beijing’s more dismissive approach could inadvertently contribute to rising strain on the peninsula. Mounting tensions with Taiwan are also possible, given Beijing’s more assertive and risk-tolerant approach throughout the region, as well as the reality that polling on Taiwan finds that the population is growing less interested in unification. The 2016 election in Taiwan could give rise to a heightened period of tensions as leaders in Taipei and Beijing attempt to manage cross-strait relations in the shadow of these larger trends.

China’s approach to its territorial disputes in the South China Sea suggests a similar dynamic. Its turn to a more robust assertion of its claims seems motivated by two key drivers, one tactical, and the other more strategic. On the tactical side, Beijing’s activism reflects its assessment that it lost substantial ground to its rival claimants during its 1996–2008 entanglement in managing heightened tensions across the Taiwan Strait. China’s irritation at being outmaneuvered by its smaller, far-less-powerful competitors, coupled with a growing sense of confidence in its capacity to effect meaningful change, combined to unleash the robust pushback that has characterized China’s actions for the last several—and particularly the last few—years. More broadly, China’s approach reflects its interest in developing more strategic depth on its maritime periphery as its interests expand well beyond its shores. In effect, China sees its activities in the South China Sea as contributing to its efforts to signal to its regional neighbors, and the United States, that its forces intend to operate at times of their choosing out to the Second Island Chain and into the Western Pacific.

Chinese Military Strategy

In many ways, Chinese ambitions are a reflection of the staggering success of China’s robust military modernization program over the last two decades. Beijing’s desire for advanced military capabilities stems from its general assessment of the pillars of U.S. military power projection—as demonstrated in the 1991 Persian Gulf War, 1995–96 Taiwan Strait Crisis, former Yugoslavia conflict, and more recent operations in Iraq and Afghanistan—and the recognition that these capabilities amounted to an insurmountable obstacle for the PLA. It is intuitively obvious that Chinese planners, with the assurance of sustained, targeted funding, have responded to these shortcomings by developing a suite of capabilities designed to counter each U.S. pillar: aircraft carriers; air superiority and long-range precision strike; regional bases and alliances; and space and information dominance.

Much has been written and said about the most obvious of these anti-access/area denial capabilities—submarines and anti-ship cruise (ASCMs) or ballistic missiles (ASBMs) to deter U.S. aircraft carriers and modern fighter aircraft and surface-to-air missiles (SAMs) to counter U.S. air superiority.²¹ Yet, in many ways, the more game-changing leaps have been made in the development of robust Chinese electronic warfare capabilities, cyber capabilities, and the PLA’s multilayered approach to dealing with U.S. regional bases and alliances, each of which poses unprecedented challenges for senior U.S. planners and decisionmakers. Chinese EW arguably is the most im-

portant part of the A2/AD revolution, and yet it is poorly understood in the West. In short, the key information systems that enable U.S. joint operations—satellite communications, the global positioning system (GPS), tactical datalinks, and high-frequency (HF) communications—could be fundamentally degraded, or even rendered unusable, especially the closer U.S. forces get to Chinese territory. Similarly, advances in Chinese command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) will be the great enabler of PLA capabilities over the next 10–15 years. China has invested heavily since the mid-1990s and will continue to do so.²² By 2030, the PLA can be expected to have persistent regional reconnaissance from space-based platforms and near-space tactical platforms—imagery, electronic intelligence (ELINT), and signals intelligence (SIGINT)—and timely global reconnaissance from a robust space-based architecture.²³ China has similarly invested in robust cyber espionage and attack capabilities. The most public case was the Office of Personnel Management’s 2015 announcement its security clearance database had been compromised, likely by China.²⁴ A 2013 National Intelligence Estimate is reported to have concluded that China was undertaking a cyber-based campaign to undermine U.S. competitiveness.²⁵ Additionally, many other cyber actions have links to China.²⁶ As China continues to develop its cyber capabilities, it is likely that it will be increasingly capable of interfering with U.S. military networks as well. It will be very hard for U.S. forces—especially large naval assets and forward-deployed forces—to hide from Chinese space, near-space, and cyber ISR.

The PLA’s response to U.S. regional bases and alliances operates on two levels, one kinetic and the other diplomatic and political. China has deployed a host of theater-range weapons—medium-range ballistic missiles (MRBMs), land-attack cruise missiles (LACMs), and air-launched stand-off attack munitions—that give China the capability to strike key U.S. bases, which are high-value targets for the PLA and single points of failure for the United States. Chinese capabilities also make U.S. regional allies targets instead of sanctuaries, complicating the calculation for host governments and further slowing the U.S. decision cycle in a conflict.

This dilemma is not limited to U.S. allies and partners, however. The acquisition of theater-range weapons also changes the calculus of U.S. policymakers and senior military commanders considering the wisdom and implications of U.S. intervention in a conflict close to China’s periphery. In the mid-1990s, such a prospective U.S. intervention was comparatively low-cost, non-escalatory, and highly effective. Today, and especially by 2020, it could be a very dubious calculation. China has credible, even if fundamentally unproven, capabilities to disable or destroy U.S. carriers—with incalculable implications for U.S. prestige globally—making the efficacy of such an intervention much more questionable.

Moreover, U.S. military intervention would have significant escalatory potential. The most immediate options for U.S. policymakers to counter China’s growing A2/AD capabilities involve kinetic attacks on key nodes and systems—initially air defenses but also long-range precision strike systems. The prospect of substantial kinetic attacks against a nuclear power with credible conventional and nuclear retaliatory capability would give any U.S. president pause, especially when the likely proximate cause is an unmistakable move toward independence by Taiwan or the assertion by a U.S. ally or partner of murky sovereignty claims in the South China Sea. Efforts to manage crises and escalation dynamics will be required to minimize the risk, especially given vulnerabilities of both U.S. and Chinese systems in space and cyberspace.

FIGURE 1: Chinese Headquarters (HQ) Locations and Missile Ranges



Despite its impressive technical modernization, senior commanders and military scholars indicate that the PLA retains substantial shortcomings when it comes to questions of “software,” particularly in its inability to translate weapons modernization into combat power for conducting truly integrated joint operations.²⁷ While most foreigners focus on new equipment, PLA officers understand their doctrine requires the integration of all forces, old and new, military and civilian, into joint operations that incorporate firepower, mobility, information operations, and special operations.²⁸ The PLA undoubtedly has complicated any U.S. military intervention calculus, particularly in a Taiwan scenario, but the PLA’s assessment of the Chinese military’s actual warfighting capability remains quite negative. To some extent, these challenges are all the more difficult for the PLA because it is rooted in its standing as the armed wing of the CCP. Other PLA writings, for example, are more specific, arguing that the current command structure, modes of training, command and control (C2) systems, and modes of operation are not sufficient for Chinese strategic imperatives or for the demands of modern warfare.²⁹ China’s current national command structure also dates from 1985, when China’s proximate security preoccupation was the Soviet Union. That structure has little inherent capacity for joint service integration and expeditionary

operations; in fact, it is a key impediment. Other “software” constraints on the PLA’s fighting capabilities include a lack of combat experience since 1979; a truncated non-commissioned officer (NCO) corps that has failed to create a strong cohort of small unit leaders; pervasive corruption, including in the senior officer corps; and the PLA’s standing as “the Party’s Army” instead of the national military of China.

Recent adjustments to China’s official military strategy only serve to bring these deficiencies into sharper focus. In May 2015, the PLA issued its latest Defense White Paper, *China’s Military Strategy*, that indicates China’s national military strategy has changed. The paper notes that the conduct of warfare has shifted to give even greater prominence to the application of information technology in all aspects of military operations. It also states that the military has been handed a new “strategic task” to “safeguard the security of China’s overseas interests,” especially in the maritime domain.³⁰ Yet, Chinese military doctrinal writings make clear that the PLA judges itself incapable of winning wars under “informatized conditions”—meaning a battlefield with robust jamming and demanding requirements for agile C4ISR.³¹ These writings also indicate that the PLA sees itself as unable to defend Chinese interests more broadly under both wartime and non-war operations (such as multilateral security operations and disaster relief).

Defense reform priorities mooted in conjunction with the broad package of reform guidelines issued following the November 2013 Third Plenum of the 18th Central Committee suggest the leadership is aware of these shortcomings and is seeking to address them. Of particular interest is the Plenum’s very detailed description of pursuing specific structural reforms. It called for the creation of a “sound . . . joint operations command structure and theater joint operations command system,” as well as the advancement of “reform of the joint operations training and support system.”³² Official Chinese media reports have announced that the restructuring is beginning, with other media accounts suggesting a new structure will begin to take shape as early as January 2016. Should the proposed reforms be successfully implemented, the PLA will emerge as a much more capable, lethal, and externally oriented fighting force.

The PLA’s enhanced mission to “safeguard the security of China’s overseas interests” marks China’s clearest articulation yet of its intent to operate further afield, making it inevitable that such activities will affect U.S. interests.³³ To address the new challenges in the maritime domain, the white paper calls for a fundamental retooling of the PLA’s strategic orientation by noting, “the traditional mentality that land outweighs sea must be abandoned.”³⁴ Consequently, the document states that the PLA Navy (PLAN) “will gradually shift its focus from ‘offshore waters defense’ to the combination of ‘offshore waters defense’ with ‘open seas protection.’”³⁵ Under these auspices, the PLA in the near future will be operating well beyond the First Island Chain and into the Indian Ocean. It likely will play substantial roles in regional disaster assistance relief and will have a significant expeditionary capability for noncombatant evacuation operations (NEOs) for Chinese citizens and corporate employees in Africa, South Asia, and beyond. The call for the PLA to adopt this expanded mission set is of greatest concern to the United States, as it will gradually extend the reach of the PLA and emphasize “nontraditional security” operations such as counterterrorism, humanitarian assistance and disaster relief (HA/DR), economic security, public health, and information security.³⁶

By 2030, the Chinese likely will have multiple aircraft carrier strike groups (CSGs), facilitating the overawing of lesser powers, enhanced regional prestige, and the demonstration effect of near-constant presence. For rival claimants in the South China Sea, this is a game changer. There will almost always be a Chinese CSG floating in contested waters, or within a half-day's steaming time. Whether they have seized territory or negotiated a resource-sharing scheme with some or all of the other claimants, the South China Sea will be virtually a Chinese lake, as the Caribbean or the Gulf of Mexico is for the United States today. China's military capability and capacity will shape how the region behaves toward them without a need for menacing Chinese behavior. The PLAN will have the ability to make U.S. naval operations in the South China Sea or the First Island Chain a risky proposition in a contingency, other than U.S. submarines. China also will be a major weapons exporter, including very advanced EW, ISR, and precision strike capabilities that complicate U.S. military planning globally.

Emerging Chinese military capabilities are not the only risk for U.S. interests stemming from China's return to the world stage. How a rising China will choose to interact with established global institutions, and the rules and norms those bodies have promulgated and follow, also requires U.S. vigilance and involvement. With its various economic initiatives, Beijing, and, more particularly, the CCP, seeks to reinforce the emerging narrative that China is moving to the center of global economic activity, strength, and influence even, paradoxically, as its own economy struggles to maintain momentum. China is keen to nurture the notion that a new global order is unfolding, and that the world expects that new order to more thoroughly incorporate Chinese influence and preferences. There also is a growing global consensus that it is better to integrate China into those established institutions rather than have China create more parallel constructs where it has the leading, or even sole, voice. As such, U.S. policymakers will have to determine how, where, and when the United States will work with China as the story of China's return to great power status continues to unfold.

NORTH KOREA

The Democratic People's Republic of Korea (DPRK, or North Korea hereafter) is perhaps the most opaque country in the world and continues to pose risks to the United States and its allies and partners in the region. North Korea's pursuit of nuclear weapons and ballistic missiles represents a persistent threat to regional security. North Korea's conventional capabilities and belligerent actions also continue to undermine stability on the Korean Peninsula. On the other hand, North Korea's political instability, internal repression, and economic backwardness promise a massive humanitarian crisis should the regime collapse.

North Korean Internal Dynamics

The North's young leader, Kim Jong-un, is in the midst of his fourth year as head of state. His execution of 70 high-level officials since taking office (according to South Korean statements) suggests a significant degree of churn inside of the Pyongyang elite.³⁸ As the regime tightens its grip on power, North Korean society by contrast is growing more open, albeit slowly, as the proliferation of official and black markets creates new demands for information, opportunity, and

contact with the outside world. The lack of any fundamental economic reform under Kim puts added pressure on the regime to prove its legitimacy. While no one can predict the trigger, these forces potentially pull the state in disruptive directions.

The North Korean regime's primary goal is to perpetuate the personality cult of the Kim family. The risk posed by the regime's weapons and behavior is severe, particularly the potential for crisis instability and the regime's record of human rights abuses, proliferation of weapons of mass destruction (WMD), and illicit activities such as counterfeiting, drug trafficking, and human trafficking. North Korea still seeks reunification of the peninsula through overthrow of the rival regime in the south. This objective has been stymied by successful deterrence on the part of the U.S.-Republic of Korea (ROK) alliance.

Short of unification, Pyongyang seeks to use coercive bargaining to achieve more immediate goals vis-à-vis South Korea and the United States. This includes temporary concessions on its missile or nuclear programs (e.g., production or test freezes) to extort funding, food, or other diplomatic gains. At the extreme, Pyongyang may want to hold at risk ROK and U.S. assets on the peninsula through missile or artillery threats in an effort to extort larger prizes.³⁹ North Korea continues to operate aggressively with naval patrols and the positioning of artillery along the Demilitarized Zone (DMZ), Northern Limit Line, and northwest islands. In response to recent world condemnation of its human rights abuses, another objective may be to deter with force all attempts to slander the regime's legitimacy. In this regard, Pyongyang has threatened to attack civilian balloon drop activities that send information, money, and food to the North Korean people. It has also detained an unusually large number of foreign visitors in recent years for "anti-regime" activities.⁴⁰

North Korea appears to be demonstrating, or seeking to demonstrate, a higher tolerance for "risk" and escalation than in the past. It is possible that Kim is attempting to manage legitimacy challenges or address concerns about his inexperience. He may also be motivated by the calculation that Pyongyang's nuclear weapons capability allows more room for coercive acts. This new development requires further study to determine whether this is a slight modification in North Korean behavior, or the beginning of a larger shift.

North Korea Foreign Policy

Since 2010 Pyongyang has not attempted another major provocation like the *Cheonan* sinking or the Yeonpyeong Island artillery shelling.⁴¹ Although North Korea placed landmines in a frequently patrolled area in the DMZ, the government does not appear to be engaging in either a provocation cycle or a diplomacy cycle. North Korea's fiery rhetoric does not mask a desire for dialogue, but neither is it a precursor to aggressive behavior. Nevertheless, Pyongyang's tolerance for risk appears higher than it has been for years.

There are several possible explanations for Pyongyang's recent behavior. North Korea might have rejected dialogue because the Obama and Park governments appear distracted by other issues. Moreover, even if Pyongyang might be able to get a deal with either president, neither can be reelected, so any deal would likely be undone once the incumbent is gone. A second theory is that Kim is having domestic problems. Purges are nothing new in North Korea, and the recent removal of the defense minister is only the latest result. Yet the pace of these purges suggests

there remain significant internal difficulties. DPRK domestic instability often influences its external behavior. For example, when Kim Jong-il had a stroke at a critical time in the Six-Party Talks in 2008, North Korea was unable to respond to proposals for moving the agreement forward. A third explanation for North Korea's attitude has to do with strength rather than weakness. Kim may be methodically building his capabilities while the United States is distracted by events elsewhere in the world and South Korea is focused on boosting economic growth. Washington and the United Nations (UN) have telegraphed clearly that the next provocation will draw a new set of financial sanctions. North Korea may therefore be biding its time by seeking to develop cyber capabilities and enlarge its missile arsenal. A fourth possibility is that North Korea is focused not on internal dissension but actually internal economic reform and rehabilitation. Signs that the regime is instituting modest private incentives in farming could reflect reform intentions. This could suggest some receptiveness to greater interaction with the outside world.

North Korean Military Strategy

North Korea appears determined to maintain its "songun" policy of putting its military first, as well as its "byungjin" line of striving for economic developments while also building nuclear weapons. North Korea's desire to strengthen its deterrent posture has enabled continued military investment despite severe economic conditions throughout the country. The DPRK maintains a military comprising 1.2 million personnel, including 1 million in the army, 60,000 in the navy, and 120,000 in the air force. The ROK 2014 Defense White Paper estimates North Korea fields 74 maneuver brigades consisting of 4,300 tanks, 2,500 armored vehicles, 8,600 cannons, and 5,500 multiple rocket launchers.⁴² The navy reportedly possesses 430 combatant vessels, 260 amphibious ships, 20 mine warfare vessels, and 70 submarines. The air force fields 820 combat aircraft, 30 surveillance and control aircraft, 330 transport craft, 170 trainers, and 300 helicopters. North Korea has one of the world's largest special operations forces, estimated at 60,000 to 180,000. Total reservists are assessed at over 7 million. While these numbers sound forbidding, the quality of the forces are low and deemed to have deteriorated due to poor training, food shortages, dilapidated equipment, and lack of fuel. Nevertheless, artillery remains a major threat given its proximity to Seoul. DPRK submarine forces also pose a danger in the northwest islands and to ROK surface vessels as evidenced by North Korea's torpedoing of the *Cheonan* corvette in 2010, which killed 46 South Korean sailors in the largest military loss of life on the peninsula since the Korean War.

North Korea has focused resources on the development of asymmetric capabilities. It conducted nuclear tests in 2006, 2009, and 2013, all at the same test site. Preparations continue at this site, and North Korea could conduct a fourth test with little warning.⁴³ In recent years, Pyongyang has augmented its plutonium-based weapons program with a new and clandestine program based on highly enriched uranium. There is little information available on this second program, but in February 2015, Chinese scientists reportedly estimated that North Korea currently has 20 nuclear weapons. They also estimated that Pyongyang possesses the uranium-enrichment capacity to build 40 weapons by the end of the Obama administration's term. This is higher than the Western estimate of 8–16 weapons.⁴⁴

North Korea currently has over 700 ballistic missiles and is actively seeking an intercontinental missile capable of carrying a warhead to the continental United States. In January 2011, then-Secretary of Defense Robert Gates estimated this could happen within five years.⁴⁵ In May 2015, North Korea claimed it is now capable of mounting a miniaturized nuclear warhead on a long-range ballistic missile targeting the United States. DPRK short-range ballistic missiles (SRBMs) and long-range artillery can reach every U.S. base in Japan and South Korea. The regime also possesses one of the largest chemical weapon stockpiles in the world.⁴⁶ The March 2013 cyber intrusion against South Korean banks and television stations and the November 2014 hack of Sony Pictures demonstrate North Korea’s growing asymmetric capabilities.

FIGURE 2: North Korean Military Headquarters and Nuclear Sites



In addition to the risk of conventional or nuclear attack on its neighbors, North Korea also presents an instability risk, with the potential for a rapid collapse of centralized state control. Kim Jong-un faces the dictator's dilemma—the state must open up to survive, but the process of opening up could lead to the collapse of the regime.⁴⁷ There is credible evidence that the potential for a dramatic erosion of regime control is possible. The leadership is incapable of reform and opening up to market transactions with the outside world and accepting information inflows would erode the legitimacy of the regime and collapse the system. On the other hand, maintaining the status quo is not sustainable in the long term. The numbers of refugees continues to grow, the economy remains underdeveloped, and China's generosity in making up for the DPRK's flaws is not eternal. Moreover, Kim Jong-un's tightening of political control over the country is in juxtaposition to a society that is more knowledgeable of the outside world, less dependent on the state as a result of two decades of informal and official markets, and desirous of a better life. Rigid political structures and a liberalizing society is an unworkable combination. We do not know what the trigger will be, but this system cannot continue indefinitely.

Thus, the bottom line is that Korean unification is not a matter of if, but when. A collapse of regime control, however, would immediately create major security challenges. The refugee flow both north and south would be substantial, requiring a massive humanitarian assistance program. North Korea's nuclear weapons and ballistic missile technology would also need to be secured. Moreover, geopolitical tensions would arise between visions of a united Korea closely aligned with China and one that remains allied with the United States. These tensions would erupt in the midst of a highly uncertain crisis, requiring quick reaction and careful coordination between political and military leaders throughout the region.

The United States will have to work closely with regional allies and partners to address Pyongyang's nuclear program, missile development, and illicit activities, as well as the risk of an internal collapse of regime control. Managing escalation in such contingencies will be vital not only with North Korea but also with other regional states like China and Russia.

RUSSIA

The Russian Federation poses a unique challenge to the United States. Since Vladimir Putin's return to the presidency, the Kremlin has sought to reassert its power both at home and abroad. In this context, the 2014 invasion of Ukraine marked a turning point in Russia's relations with Europe and the United States. This strategic shift will prove difficult to reverse, and the ripple effects could be felt globally. Even as Moscow clings to its old sphere of influence in Eastern Europe, Russian leaders are increasingly setting their hopes on Asia—and China in particular—as an alternative source of investment and influence. Growing political, economic, and military cooperation between Moscow and Beijing may form the basis for a durable alliance, but these ties could become strained as Russia and China compete for influence in the Far East and Central Asia. Given Russia's declining population and economic obstacles, Moscow is best characterized as a middle power in the Asia-Pacific.

The United States has cooperated with Russia in Asia since the Cold War, including U.S. support for Russia's membership in Asia-Pacific Economic Cooperation (APEC) and the Six Party Talks.

However, whether Washington and Moscow can return to such cooperative relations remains to be seen. Although, leaders in both capitals have established patterns of cooperation in Asia, Putin's personal interest in standing up to the West and tensions in Eastern Europe make a diplomatic breakthrough unlikely. Whether the Kremlin ultimately bandwagons with China or seeks to balance against its more powerful neighbor will have far-reaching implications.⁴⁹

Russian Internal Dynamics

U.S.-Russia relations have been deteriorating since at least 2011, when large-scale pro-democracy protests by opposition groups in many Russian cities were dismissed by the Kremlin as Western manipulation. Since taking office in 2012, Putin has consolidated a personalist authoritarian regime and oligarchic economic structure that together cast a pall over Russia's potential for future liberalization. Especially after the annexation of Crimea and "hybrid war" in Donbass, Putin's inner circle has shrunk while his own public approval ratings have skyrocketed. He now governs largely through his close ties to the Russian security services, making it more and more difficult to judge Moscow's intentions and strategic competence.

A corollary to the crackdown on internal dissent is the regime's external aggressiveness. Putin espouses a virulent form of ethno-nationalism, anti-Americanism, and traditional Russian imperialism, once calling the collapse of the Soviet Union "the greatest geopolitical catastrophe of the century."⁵⁰ The perceived exploitation of Russia during the chaotic 1990s and the expansion of the North Atlantic Treaty Organization (NATO) to the Russian border have helped foster this narrative of grievances.⁵¹ Putin thus sees himself as reclaiming Russia as "an independent, active participant in international affairs."⁵²

The global financial crisis and recent erosion of oil prices has exposed Russia's dependence on extractive industries and foreign direct investment. The Russian economy faces serious structural problems and the possibility of long-term demographic decline. Nowhere is this more true than in the Russian Far East, which is bleeding population and mired in poverty, corruption, and criminality. Virtually abandoned during the 1990s when the Russian state was on the verge of collapse, the region's development is now a national priority and part of Putin's effort to reestablish central authority over the provinces under his "power vertical" concept.⁵³ Moscow is also attentive to the incredible untapped potential of the Arctic's natural resources.

Russian Foreign Policy

Three main objectives drive Russian foreign policy in the Asia-Pacific region. First, Moscow seeks to increase economic development in eastern Siberia, the Russian Far East, and the Arctic. Second, Putin desires to maintain friendly relations with China, with whom Russia shares a 2,600-mile border. Third, Russian leaders seek to preserve the Federation's status as a major regional player.

To exploit vast reserves of precious metals, oil, and natural gas in Russia's eastern provinces, Russian firms need foreign investment and markets. Moscow launched a multibillion-dollar infrastructure program in preparation for the 2012 APEC summit in Vladivostok, but results were mixed. State-directed investment only reached the southeastern corner of the Russian Far East and some oil and gas projects in Sakhalin, and state coffers have dried up since the ruble's col-

lapse. Although South Korea and Japan currently trail China closely in terms of trade volume and foreign direct investment in the Russian Far East, future growth depends primarily on integration with the enormous Chinese market.⁵⁴ Yet, as one Russia analyst has noted, “China is really the only game in town.”⁵⁵ Russian raw materials complement China’s role as workshop of the world. Moreover, demographic decline means that Russia’s eastern provinces need guest workers, and China is more than happy to supply them.⁵⁶

Sino-Russian cooperation has geopolitical as well as economic rationales. Many in the Kremlin hold an ideological affinity for China as a successful authoritarian model of economic development and support its rise as a check on U.S. global dominance.⁵⁷ Although it has since diversified its client base, the Russian arms industry avoided collapse in the 1990s and early 2000s thanks in large part to Chinese procurement. Moscow seeks to avoid tensions near the Sino-Russian border area, so helping Beijing improve its maritime capabilities effectively keeps it focused away from the Russian border.⁵⁸

On the other hand, there are signs that Russia is not entirely comfortable living under China’s shadow. The desire for balance has manifested in sales of Russian Kilo-class submarines and Klub anti-ship and land-attack cruise missiles to Vietnam, as well as in Moscow’s unwillingness to collaborate with Beijing in their mutual territorial disputes with Japan.⁵⁹ Moscow wants to move up the global value chain, but integration into the Chinese market risks the Russian Far East becoming a “natural resource appendage” to China’s processing and manufacturing economy.⁶⁰ Moreover, Chinese economic penetration and migration could be destabilizing for a Russian region that was partially ruled by the Qing Dynasty as late as the nineteenth century.⁶¹ Russia’s international position could also be imperiled if it is seen as the inferior partner in Sino-Russian efforts. While Moscow continues to work with Beijing in the Shanghai Cooperation Organization (SCO), existing rivalries are exacerbated by China’s replacement of Russia as Central Asia’s leading economic partner.⁶² Russia is consequently strengthening its military presence in Central Asia in an effort to curb China’s growing influence.⁶³ Russia has also reached out to North Korea in recent years, demonstrating its willingness to risk Sino-Russian competition for influence on the Korean Peninsula.⁶⁴

Despite this ambivalence, most incentives favor Russian strategic alignment with China. In May 2014, Presidents Xi and Putin signed a \$400 billion, 30-year natural gas deal, with construction on a 2,500-mile pipeline to China starting in September 2014.⁶⁵ Russia has also agreed to give China a stake in eastern Siberian oil fields, the Udokan copper field, and a major Arctic liquefied natural gas (LNG) project.⁶⁶ After a lull of several years in major Sino-Russian arms transfers, in June 2015 Putin approved in principle the sale of several S-400 air defense systems—Russia’s most advanced—and another deal is expected on Russian Su-35 fighter jets.⁶⁷ China and Russia continue to collaborate in the UN Security Council, and the launch of their BRICS [Brazil, Russia, India, China, South Africa] New Development Bank this year further eroded the clout of financial institutions long dominated by the United States, Europe, and Japan.⁶⁸ Although some Asian countries belittle Russia as a Chinese proxy, the reality is that Russia often maximizes its influence by operating in concert with China.⁶⁹ Moscow is likely to seek a balance, but no strategic rupture with Beijing appears to be on the horizon—at the very least not while relations with Washington remain hostile.

Russian Military Strategy

The Russian military presents challenges to the United States in Asia and the Arctic, as well as in Europe. The Armed Forces of the Russian Federation enjoys the third-largest budget in the world at roughly \$70 billion and has more than 770,000 permanent personnel.⁷⁰ Military reforms in 2008 ushered in a massive modernization program that has doubled defense spending over the past decade.⁷¹ Some of this increase is being directed toward the Russian Far East. In April 2015, Moscow announced it would double the number of S-400 air defense systems stationed on the Kamchatka Peninsula.⁷² Russia's Pacific Fleet has begun acquiring new ships for the first time since the Soviet collapse and already includes an estimated 50 warships and 23 submarines.⁷³ The fleet received a new *Borei*-class nuclear-powered ballistic missile submarine (SSBN) in 2013 and a *Dyugon*-class landing craft in 2014. Expected additions include five more SSBNs over the next decade, two *Steregushchy*-class corvettes in 2015, an *Ivan Gren*-class amphibious ship in 2015, and six *Yasen*-class nuclear-powered guided missile submarines (SSGNs) starting in 2017. Given that much of the existing fleet may not be operational, many of these acquisitions are best viewed as long-planned modernization efforts.⁷⁴ In July 2015, the Kremlin released a new Maritime Doctrine that calls for "strengthening Russia's position as a sea power," but questions remain about cost and sustainability.⁷⁵ While Putin may hope to restore Russia's blue-water navy, in the near term his Pacific Fleet will probably focus more on strategic deterrence and coastal defense missions given its limited ability to counter other navies or project offensive power.⁷⁶

Despite its shortcomings, the Russian military still poses several strategic problems for the United States and its allies in East Asia. Russia's deployment of a naval surface action group to the Coral Sea during the 2014 Brisbane G-20 Summit stressed the Royal Australian Navy's maritime capabilities at a time of heightened security preparations by the Australian government. Russian air patrols near Hokkaido and around the Japanese main islands have reached a frequency in recent years not seen since the Cold War. In 2014, Japanese fighters scrambled more than 450 times against Russian bombers and patrol aircraft.⁷⁷ This uptick is complicating a planned shift in Japanese force posture to the southwest, forcing Japan to contemplate operational requirements to the north. U.S. forces also intercepted two separate pairs of Tu-95 Bear bombers flying in international airspace off the coast of Alaska and California on July 4, 2015.⁷⁸ Additionally, Russian bombers have been patrolling around Guam, with some refueling aircraft departing from Cam Ranh Bay with Vietnam's acquiescence.⁷⁹

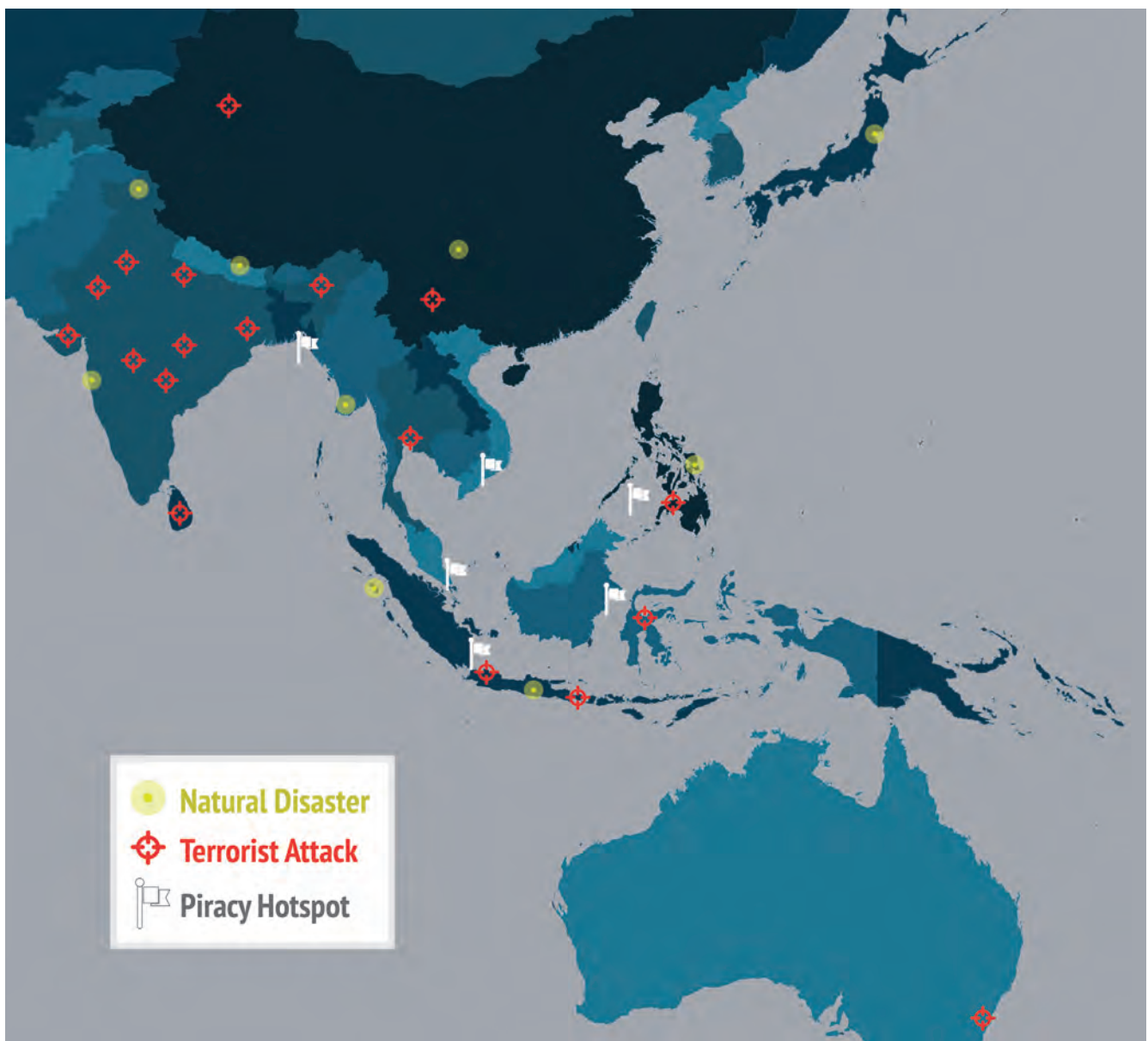
Since 2011, the PLAN and Russian Navy have conducted naval exercises in the Yellow Sea, Sea of Japan, East China Sea, and Mediterranean, with another South China Sea exercise planned for 2016.⁸⁰ Moscow and Beijing also hold frequent bilateral and multilateral exercises with other members of the SCO.⁸¹ In September 2014, Russia staged "Vostok 2014," its largest Far East military drill in over a quarter-century, involving some 100,000 troops.⁸² Gray zone coercion efforts by Russia and China fit into a larger strategic mosaic that Beijing and Moscow appear to recognize, even if their respective activities are not necessarily fully coordinated. However, responses to these coercion efforts resonate with U.S. allies.

In summary, despite Russia's struggling economy and declining geopolitical influence, Russian activities in the Far East demand sustained attention. The Kremlin's coordination and cooperation with Beijing increases the security concerns of many U.S. allies and partners. Moreover, Moscow's aggression in Europe and its Arctic claims are likely to aggravate tensions in East Asia, forcing PACOM to maintain a watchful eye on Russian capabilities and intentions in the decade ahead.

NONSTATE RISKS

The United States and its allies and partners face several nonstate risks in the Asia-Pacific. These include terrorism, humanitarian crises and natural disasters, piracy, and the proliferation of weapons of mass destruction. Addressing these risks is critical because larger crises and conflicts often arise from lesser cases of instability.

FIGURE 3: Nonstate Concerns in the Asia-Pacific



Terrorism

Multiple Asian states face serious threats from terrorism, including China, Indonesia, North Korea, South Korea, Malaysia, the Philippines, Singapore, Thailand, Bangladesh, India, the Maldives, Nepal, and Sri Lanka. In these countries, vulnerability to terrorism is often the result of poor border security, weak law enforcement, and poor coordination and information sharing among relevant agencies. Between 2012 and 2014, terrorist attacks occurred in China, Malaysia, the Philippines, Indonesia, Thailand, Bangladesh, India, and Nepal. Malaysia and Indonesia both confront local groups that support ISIL and are concerned about citizens traveling abroad to join its ranks.⁸³ The U.S. Pacific Command has worked with many allies and partners to address these risks. In 2013, the United States joined the Association of Southeast Asian Nations (ASEAN) Defense Ministers' Meeting Plus (ADMM-Plus) counterterrorism exercises for the first time.⁸⁴ In 2015, the United States deactivated its Joint Special Operations Task Force with the Philippines (JSOTF-P), citing a drastic reduction in Abu Sayyaf Group (ASG) forces and other insurgents in the Philippines.⁸⁵

Piracy

The high volume of seaborne trade that passes from the Indian Ocean through the South China Sea makes Southeast Asia an especially tempting area for pirates.⁸⁶ Although incidents of piracy have decreased worldwide over the last five years, the number of incidents in Southeast Asia has risen during that time.⁸⁷ Not only do Southeast Asian countries face an increased risk of piracy, but they also confront obstacles to effective counter-piracy efforts. The Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) provides for information sharing among members. The United States acceded to the organization in 2014.

Malaysia and Indonesia, both situated near the Strait of Malacca, however, are not members.⁸⁸ Many countries also have insufficient manpower and inadequate platforms to monitor their coastlines, limiting the effectiveness of multilateral counter-piracy efforts. The United States' Seventh Fleet conducts several exercises intended to help vulnerable countries improve their maritime law-enforcement capabilities. To this end, the United States plans to deploy up to four Littoral Combat Ships (LCSs) to Singapore by 2018, which may be used for counter-piracy operations, and some in the Department of Defense have expressed support for the idea of regional maritime patrols.⁸⁹ This may provide an opportunity for the United States to bolster its counter-piracy presence while allowing Southeast Asian partners to take the lead, and remaining mindful of competing sovereignty claims.

Natural Disasters

The Asia-Pacific is prone to natural disasters and humanitarian crises that necessitate HA/DR cooperation. Countries in the area are susceptible to disasters like major earthquakes, tsunamis, volcanic eruptions, typhoons, and monsoons. The Asia-Pacific also includes the four nations most vulnerable to pandemic influenza.⁹⁰ Since 2012, several countries in the region have experienced large-scale natural disasters, most notably Typhoon Haiyan in the Philippines in November 2013 and a 7.8-magnitude earthquake in Nepal in April 2015. In past disasters, U.S. forces have been responsible for transporting emergency personnel and relief supplies, executing search

and rescue (SAR) operations, and conducting joint disaster assessments with the U.S. Agency for International Development (USAID). HA/DR operations of this sort require sustained force levels and readiness.⁹¹ Recent research on U.S. HA/DR capacity in Asia suggests that knowledge of the standard operating procedures of relevant countries is critical. Therefore, it is vital that regional states develop exercises with civilian international organizations and nongovernmental organizations (NGOs) and deepen collaboration with partners in the region before disasters occur.⁹² The United States has a stake in helping states build greater resilience and capacity to respond to these natural disasters, since the massive displacement, death, and damage caused can undermine the legitimacy of states and render them more vulnerable to terrorism, crime, piracy and great power coercion.

Proliferation

Finally, proliferation of weapons of mass destruction and related technologies is a major concern, especially in Northeast Asia. North Korea has exported missile technology to Iran and Syria, as well as nuclear reactor technology to Syria. North Korea may also continue to attempt export of gas centrifuge technology in the future. The collapse of the DPRK regime could also lead to proliferation. North Korea's continuing proliferation efforts are exacerbated by weak Chinese implementation of export controls and United Nations Security Council (UNSC) sanctions, with Beijing allowing certain Chinese companies to supply North Korea with dual-use technologies. Southeast Asian countries also tend to have relatively few export control laws. On the demand side, terrorist groups, including Jemaah Islamiyah (JI), have pursued WMD in the past and may do so in the future. North Korea may be more likely to sell fissile material to nonstate actors as its stockpile grows or if it faces an extreme economic crisis.⁹⁴ Since the Proliferation Security Initiative (PSI) began in 2003, U.S. forces have been involved in exercises designed to share best practices on countering proliferation. In 2014, the U.S. Pacific Command hosted 31 nations in Hawaii for the first in a series of exercises designed to respond to new proliferation threats, such as the smuggling of dual-use technologies.⁹⁵ PACOM is, however, limited in its legal authority to interdict ships on suspicion of WMD smuggling. Increased information sharing and coordination among PSI partners is therefore vital to effectively carrying out counter-proliferation efforts across the region.

By engaging the region through exercises, information sharing, and capacity building, the United States continues to mitigate the risks posed by terrorism, piracy, natural disasters, and proliferation. Sustained attention to these risks will require persistent presence and engagement, especially in Southeast Asia.





3 | U.S. FORCE POSTURE IN
THE ASIA-PACIFIC

One of the most visible elements of the rebalance has been the shift in U.S. military force posture both within and to the Asia-Pacific region, as will be described in detail below. U.S. posture requirements in the Asia-Pacific will continue to evolve over the coming decade as regional powers enhance their A2/AD capabilities and U.S. forces respond to pressures in other parts of the world. Current U.S. capabilities resident or routinely deployed in the Asia-Pacific include power projection from carrier strike groups, strategic bombers, and guided-missile submarines; ballistic missile defense from a network of installations and platforms in Japan, Korea, Guam, and forward-deployed and forward-operating Aegis-equipped navy ships; antisubmarine warfare (ASW) capability resident in ships, submarines, and patrol aircraft operating throughout the Asia-Pacific theater; air superiority from fourth- and fifth-generation fighters deployed to Japan and Korea; and ISR capabilities from space-based to tactical systems providing early warning and support to warfighters.

Over the coming decade, DOD expects to field, and continues to invest in, additional capabilities that will be important for defeating an adversary seeking to use A2/AD approaches. DOD is also seeking to improve its force posture in the Asia-Pacific—including enduring locations, military activities, and defense-to-defense relationships. However, the global demand for U.S. forces—combined with significant budget and force pressures—will challenge the Defense Department’s ability to sustain its posture and activities in the Asia-Pacific region, particularly in the midterm.

CURRENT U.S. FORCE POSTURE IN THE ASIA-PACIFIC

U.S. bases in Asia are concentrated in Northeast Asia, the result of alliances with Japan and Korea forged during the Cold War. These alliances remain critical to the preservation of security across Asia. Further, U.S. allies in Asia have contributed approximately \$30 billion to develop or update U.S. facilities in Japan, Korea, and on Guam. The U.S. contribution to those initiatives has been only \$6.7 billion. U.S. interests in the region extend well beyond Northeast Asia to encompass South Asia, Southeast Asia, and the Indian Ocean. Moreover, U.S. bases present a relatively small number of high-value targets, well within the reach of adversary ground-, sea-, or air-launched long-range precision-guided munitions (PGMs).

Current and near-term U.S. posture adjustments in Northeast Asia are largely focused on the Second Island Chain, and specifically Guam, which is being built up as a strategic hub. Based on interviews by the study team, DOD is making measurable progress toward this end. The piers at Apra Harbor within Naval Base Guam have recently been refurbished. Construction is ongoing at several military installations in Guam, including Andersen Air Force Base (AFB), which will provide expanded training ranges, cantonment for rotational U.S. Marine Corps (USMC) forces, and replacement of nearly obsolete U.S. Air Force (USAF) housing. In addition, work has begun on a second fuel pipeline running from Apra Harbor, which will add to resilience.

The forces based in Guam, and those to be rotationally deployed there, will provide needed early reinforcements in case of conflict. In addition, the forces in Guam will be less vulnerable due to the deployment of a THAAD battery to Guam. If permanently stationed in Guam, the THAAD battery and rotational air forces would greatly enhance DOD’s capability to defend both Guam and other U.S. territories.

In 2014, the United States took a significant step forward to enhance its posture in the Philippines, signing the bilateral Enhanced Defense Cooperation Agreement (EDCA). The agreement will pro-

vide the United States a legal framework under which to undertake modest but important military construction that will benefit the U.S. partnership with the Armed Forces of the Philippines (AFP). These investments, useful during peacetime, will have the added benefit of providing the United States additional facilities from which to operate during a crisis or conflict. The geography of the Philippines will enable U.S. forces readier access to the South China Sea, and access to Philippine facilities would provide U.S. aircraft operational bases much closer to possible conflict areas.

In 2011, the United States and Australia announced an agreement permitting USAF and USMC use of Australian military facilities on a rotational basis. The USMC rotation at Darwin is in its fourth year, and will expand to a maximum size of 2,500 Marines. The USAF also conducts rotational deployments of aircraft through a small number of airfields in Northern Australia.

In addition, the United States maintains a rotational force of LCSs operating out of Singapore. The USN plans to rotate as many as four LCSs out of Singapore, providing a significant increase in USN presence and partnership opportunities throughout Southeast Asia.

Meanwhile, the United States has bolstered its missile defense capabilities in Northeast Asia by deploying additional ballistic missile defense destroyers to Japan. *USS Benfold* has deployed to Japan and *USS Milius* will deploy in 2017. Additionally, destroyers with advanced ballistic missile defense capabilities will replace existing forward-deployed vessels, such as the planned deployment of *USS Barry* in place of *USS Lassen* in 2016.

FIGURE 4: Significant U.S. Military Elements in the PACOM AOR



Enduring U.S. military presence in the Asia-Pacific has been a major asset for U.S. national interests, and for regional security since World War II. The interactions afforded by long-standing, close associations act as a multiplier for U.S. familiarity and interoperability with host nation militaries. Forward presence also builds a reservoir of interpersonal connections and common experiences that cannot be achieved through intermittent engagement. U.S. experience in Southeast Asia demonstrates that U.S. military presence in the region can be politically charged—as seen in the forced withdrawal of U.S. forces from the Philippines in 1992—so maintenance of close political relationships is required throughout the region. In general, temporary deployments to austere bases are politically easier for host countries than long-term, permanent garrisons. Over the coming decade, the United States would benefit greatly from expanding the number and type of facilities to which it conducts regular deployments.

TABLE 1: Major U.S. Military Units in Japan (Main Islands and Okinawa)⁹⁷

AIR	GROUND	NAVAL
Misawa Air Base (AB) 2 Reconnaissance Squadron (USAF Reserve) 1 Operations Support Squadron 1 Reconnaissance Squadron Yokota AFB 2 Airlift Squadron 1 Operations Support Squadron Kadena AB 2 Fighter Squadrons 2 Rescue Squadrons 2 Special Operation Squadrons 1 Special Tactics Squadron 1 Air Refueling Squadron 1 Aeromedical Evacuation Squadron 1 Operations Support Squadron 1 Reconnaissance Squadron	Yokota AFB U.S. Forces Japan (USFJ) HQ Camp Zama U.S. Army Japan (USARJ) and I Corps Forward HQ Camp Courtney III Marine Expeditionary Force (MEF) HQ 3rd Marine Expeditionary Brigade (MEB) HQ Camp Hansen 31st Marine Expeditionary Unit (MEU) HQ 1 Combat Assault Battalion (HQ) 1 Marine Artillery Regiment Camp Schwab 1 Marine Infantry Regiment	Naval Air Facility Atsugi 4 Fighter Squadrons 1 Electronic Attack Squadron 1 Airborne Early Warning Squadron 1 Fleet Logistics Support Detachment 1 Helicopter Sea Combat Squadron 2 Helicopter Maritime Strike Squadron Camp Foster 1 HQ Squadron 1 Marine Wing Support Squadron MCAS Futenma 2 Medium Tiltrotor Squadrons Marine Corps Air Station Iwakuni 1 Fighter Attack Squadron 1 Aerial Refueler Transport Squadron 1 Marine Wing Support Squadron United States Fleet Activities Sasebo 4 Amphibs (1 LHDs, 1 LPDs, 2 LSDs) 4 MCMs United States Fleet Activities Yokosuka 1 CVN 1 Amphib (1 LCC) 3 CGs 8 DDGs

TABLE 2: Major U.S. Military Units in South Korea⁹⁸

AIR	GROUND	NAVAL
Kunsan AB 2 Fighter Squadrons 1 Operations Support Squadron Osan AB 2 Fighter Squadrons 1 Operations Support Squadron 1 Reconnaissance Squadron	Camp Casey 1 Fires Brigade Camp Hovey 1 Armored Brigade Combat Team (BCT) (Rotational) Camp Humphreys 1 Combat Aviation Brigade with rotational elements 1 Military Intelligence Battalion Osan AB 1 Air Defense Artillery Brigade Camp Red Cloud 2nd Infantry Division (ID) HQ Yongsan Garrison HQ Units for U.S. Forces Korea, Combined Forces Command, United Nations Command, U.S. 8th Army, U.S. Marine Forces–Korea (MARFOR-K) 1 Military Intelligence Brigade (distributed between Yongsan and Camp Humphreys)	United States Fleet Activities Chinhae U.S. Naval Forces Korea HQ

TABLE 3: Major U.S. Forces in Alaska, Hawaii, and Guam⁹⁹

AIR	GROUND	NAVAL
<p>Eielson AFB, AK</p> <ul style="list-style-type: none"> 1 Aggressor Squadron 1 Air Refueling Squadron (National Guard) 1 Operations Support Squadron <p>Joint Base (JB) Elmendorf-Richardson, AK</p> <ul style="list-style-type: none"> 2 Fighter Squadrons 1 Fighter Squadron (National Guard) 3 Rescue Squadrons 2 Airlift Squadrons 1 Air Defense Squadron (National Guard) 1 Operations Support Squadron <p>JB Pearl Harbor-Hickam, HI</p> <ul style="list-style-type: none"> 2 Fighter Squadrons 2 Airlift Squadrons 1 Airlift Squadron (National Guard) 2 Air Refueling Squadrons (National Guard) 1 Operations Support Squadron 1 Helicopter Maritime Strike Squadron <p>Andersen AFB, Guam</p> <ul style="list-style-type: none"> 36th Air Expeditionary Wing 	<p>Kalaeloa Readiness Center, HI</p> <ul style="list-style-type: none"> 1 Infantry BCT (National Guard) <p>JB Elmendorf-Richardson, AK</p> <ul style="list-style-type: none"> 1 Infantry BCT 1 Battlefield Surveillance Brigade (National Guard) <p>MCAS Kaneohe Bay, HI</p> <ul style="list-style-type: none"> 1 Marine Infantry Regiment <p>Schofield Barracks, HI</p> <ul style="list-style-type: none"> 1 Stryker BCT 1 Infantry BCT 1 Military Intelligence Brigade <p>Fort Shafter, HI</p> <ul style="list-style-type: none"> USARPAC HQ <p>Fort Wainwright, AK</p> <ul style="list-style-type: none"> 1 Stryker BCT <p>Wheeler Army Air Field, HI</p> <ul style="list-style-type: none"> 1 Combat Aviation Brigade 	<p>Naval Base Guam</p> <ul style="list-style-type: none"> 1 AS 4 SSNs Naval Special Warfare Unit-1 <p>MCAS Kaneohe Bay, HI</p> <ul style="list-style-type: none"> 1 Heavy Helicopter Squadron 1 Light Attack Helicopter Squadron 1 Patrol Reconnaissance Wing <p>JB Pearl Harbor-Hickam, HI</p> <ul style="list-style-type: none"> 2 CGs 9 DDGs 18 SSNs

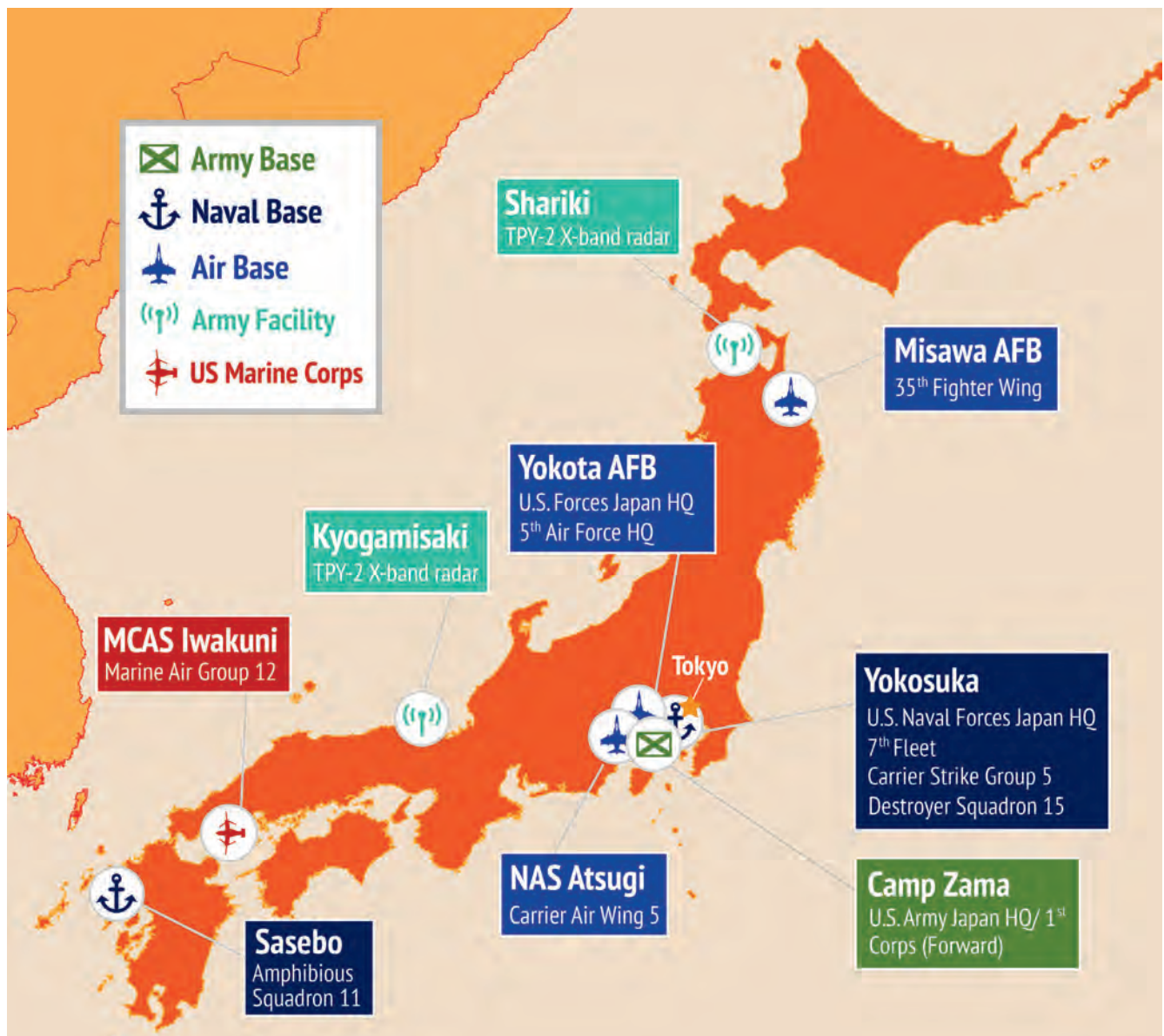
TABLE 4: Major U.S. Forces on the West Coast of the Continental United States (CONUS) ¹⁰⁰

AIR	GROUND	NAVAL
<p>Beale AFB, CA</p> <ul style="list-style-type: none"> 1 Reconnaissance Squadron (USAF Reserve) 1 Combat Ops Squadron (USAF Reserve) 6 Reconnaissance Squadrons 2 Intelligence Squadrons 1 Space Warning Squadron 1 Medical Squadron <p>Channel Island Air National Guard, CA</p> <ul style="list-style-type: none"> 1 Airlift Squadron <p>Fairchild AFB, WA</p> <ul style="list-style-type: none"> 2 Refueling Squadrons 1 Medical Squadron 2 Refueling Squadrons (National Guard) <p>Fresno Air National Guard Base, CA</p> <ul style="list-style-type: none"> 1 Fighter Squadron <p>JB Lewis-McChord, WA</p> <ul style="list-style-type: none"> 7 Airlift Squadrons 1 Medical Squadron 1 Special Tactics Squadron <p>Moffett Federal Airfield, CA</p> <ul style="list-style-type: none"> 1 Rescue Squadron 3 Rescue Squadrons (National Guard) <p>Air National Guard Base Portland, OR</p> <ul style="list-style-type: none"> 1 Fighter Squadron <p>Travis Air Force Base, CA</p> <ul style="list-style-type: none"> 2 Refueling Squadrons 2 Airlift Squadrons 	<p>JB Lewis-McChord, WA</p> <ul style="list-style-type: none"> 1 Corps HQ 2 Stryker BCTs 1 Field Artillery Brigade 1 Battlefield Surveillance Brigade 1 Combat Aviation Brigade <p>Camp Murray, WA</p> <ul style="list-style-type: none"> 1 Armored BCT (National Guard) <p>Camp Pendleton, CA</p> <ul style="list-style-type: none"> 1st MEF HQ 1st Marine Division 1st MEB HQ 11th MEU HQ 13th MEU HQ 15th MEU HQ 1st Marine Logistics Group <p>MCAGCC Twentynine Palms, CA</p> <ul style="list-style-type: none"> 7th Marine Regiment <p>Camp Withycombe, OR</p> <ul style="list-style-type: none"> 1 Infantry BCT (National Guard) <p>Naval Base San Diego, CA</p> <ul style="list-style-type: none"> 2 CVNs 12 Amphibs (1 LHA, 3 LHDs, 4 LPDs, 4 LSDs) 6 CGs 15 DDGs 6 LCSs 3 MCMs 5 SSNs <p>MCAGCC Twentynine Palms, CA</p> <ul style="list-style-type: none"> 1 Unmanned Aerial Vehicle Squadron <p>MCAS Yuma, AZ</p> <ul style="list-style-type: none"> 1 Fighter Attack Squadron 3 Attack Squadrons 1 Aviation Logistics Squadron 	<p>Naval Air Station (NAS) Lemoore, CA</p> <ul style="list-style-type: none"> 15 Fighter Squadrons <p>Naval Station Everett, WA</p> <ul style="list-style-type: none"> 2 DDGs <p>NAS North Island, CA</p> <ul style="list-style-type: none"> 8 Helicopter Sea Combat Squadrons 6 Helicopter Maritime Strike Squadrons 2 Fleet Logistics Squadrons <p>NAS Point Mugu, CA</p> <ul style="list-style-type: none"> 4 Airborne Early Warning Squadrons 2 Fleet Logistics Squadrons <p>NAS Whidbey Island, WA</p> <ul style="list-style-type: none"> 9 Electronic Attack Squadrons 4 Electronic Attack Expeditionary Squadrons 1 Patrol Reconnaissance Wing 1 Fleet Logistics Squadron <p>Naval Base Kitsap-Bangor, WA</p> <ul style="list-style-type: none"> 8 SSBNs 2 SSGNs 1 SSN <p>Naval Base Kitsap-Bremerton, WA</p> <ul style="list-style-type: none"> 2 CVNs 2 SSNs <p>MCAS Miramar, CA</p> <ul style="list-style-type: none"> 5 Fighter Attack Squadrons 4 Heavy Helicopter Squadrons 6 Medium Tiltrotor Squadrons 2 Wing Support Squadrons 1 Air Support Squadron 2 Aviation Logistics Squadrons 1 Tactical Air Command Squadron 1 Wing Communications Squadron 1 Aerial Refueler Transport Squadron <p>Camp Pendleton, CA</p> <ul style="list-style-type: none"> 2 Medium Tiltrotor Squadrons 3 Light Attack Helicopter Squadrons 1 Wing Support Squadron 1 Aviation Logistics Support Squadron

U.S. Force Posture in Japan

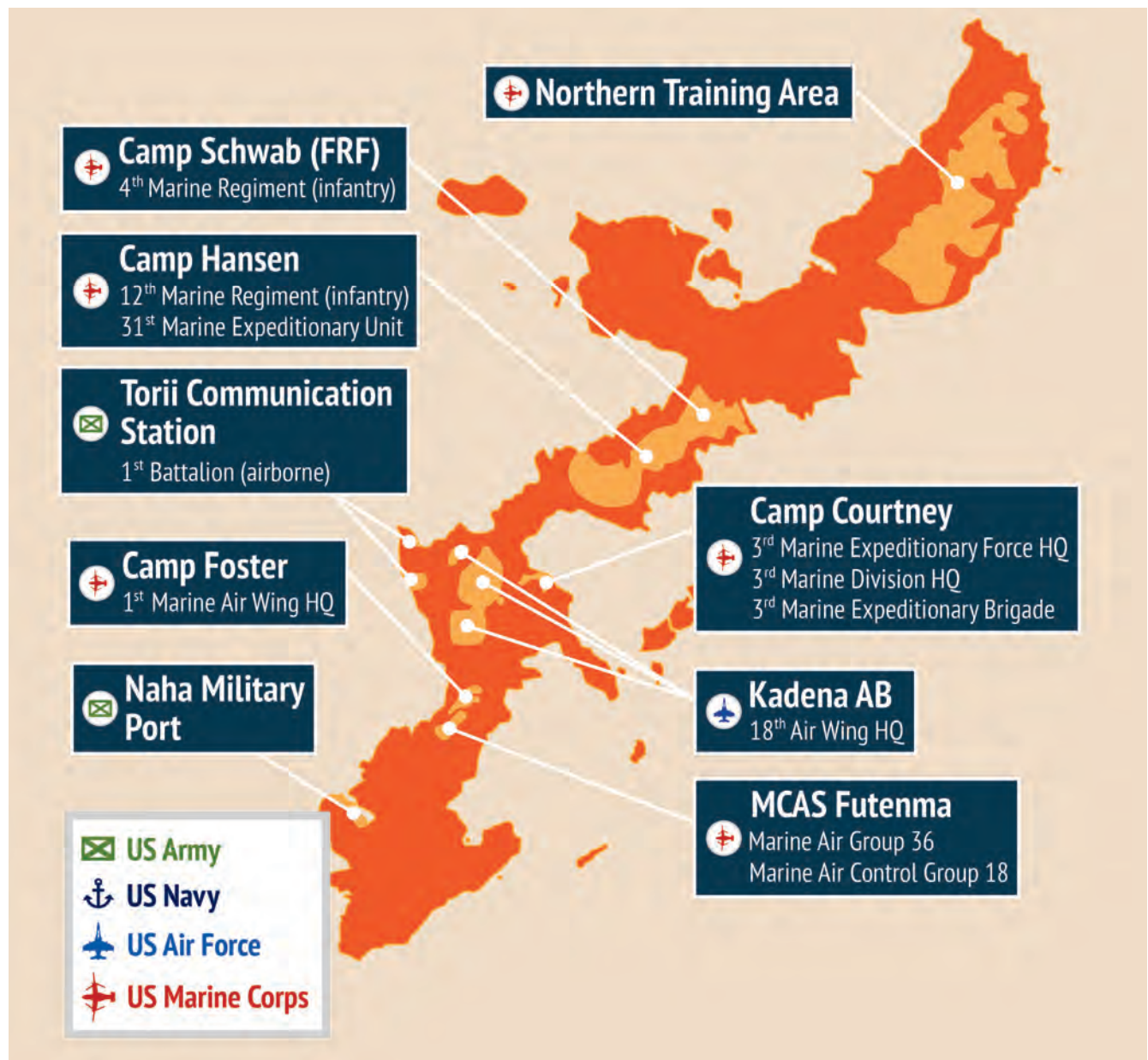
Japan hosts more U.S. forces—approximately 50,000 U.S. military personnel and 50,000 dependents—than any other foreign country. About half of U.S. personnel and dependents in Japan are hosted in Okinawa. In 2006, the United States and Japan approved a roadmap for realigning U.S. forces that included (1) construction of a Futenma Replacement Facility (FRF) near Henoko in Okinawa, and (2) relocation of 8,000 members of the Third Marine Expeditionary Force (III MEF) and their dependents from Okinawa to Guam.¹⁰¹ In 2012, the United States and Japan issued a new plan delinking the construction of the FRF from the relocation of Marines to Guam and reducing the number of Marines relocating to Guam to approximately 4,800 (the remainder would relocate to the West Coast of the United States or Hawaii, or rotate through the Asia-Pacific region, to include Australia).¹⁰² These relocation efforts continue and are supported by both governments, including by substantial Japanese financial contributions for Marine Corps basing in both Japan and Guam.

FIGURE 5: Major U.S. Forces in Japan (main islands)



Under the existing plan, the USMC presence in Japan will consolidate, largely to HQ units for various elements of III MEF. While some operational assets will remain in Japan, such as the 31st MEU and the existing rotary-wing and fixed aircraft, the remainder of operational assets, most infantry, and support elements will be distributed across the Pacific. These new locations will be augmented by additional rotary-wing assets and support elements coming from CONUS and Hawaii. The posture changes provide several advantages, including reducing the geographic footprint and USMC population on Okinawa—both of which will increase the political sustainability of the U.S. presence in Okinawa. In addition, geographic dispersal of U.S. forward-deployed forces would reduce their vulnerability. Despite these advantages, the approach carries with it some risks. These include the ability of III MEF to quickly respond to a crisis near Okinawa, to mass forces in the event of a major conflict, and to control widely distributed units day-to-day.

FIGURE 6: Major U.S. Forces in Okinawa



In 2012, CSIS examined alternative Marine relocation plans, concluding that the existing plan proved most viable, and recommended that the two governments proceed with the Futenma Relocation Facility at Henoko.¹⁰³ Additional research and extensive interviews with community stakeholders, senior officials, and military personnel reaffirm that the existing plan offers the greatest prospect for realizing the relocation of Futenma and meeting the three requirements established when realignment was first proposed: maintaining military capabilities, sustaining deterrence, and reducing the impact on the local population. The disadvantages of the other options evaluated in the 2012 study remain, namely the potential for local political opposition, costly military construction, and a further extension of a realignment timeline that is already almost 20 years old. The USMC has worked to accommodate local concerns regarding operations at Futenma and future operations at the Futenma Replacement Facility. Neither government can be expected to adopt alternatives that would be more difficult to implement but irreversible if pursued. If the Henoko plan is not implemented, the only viable alternative is for the Marines to continue operating out of MCAS Futenma.

U.S. Force Posture in South Korea

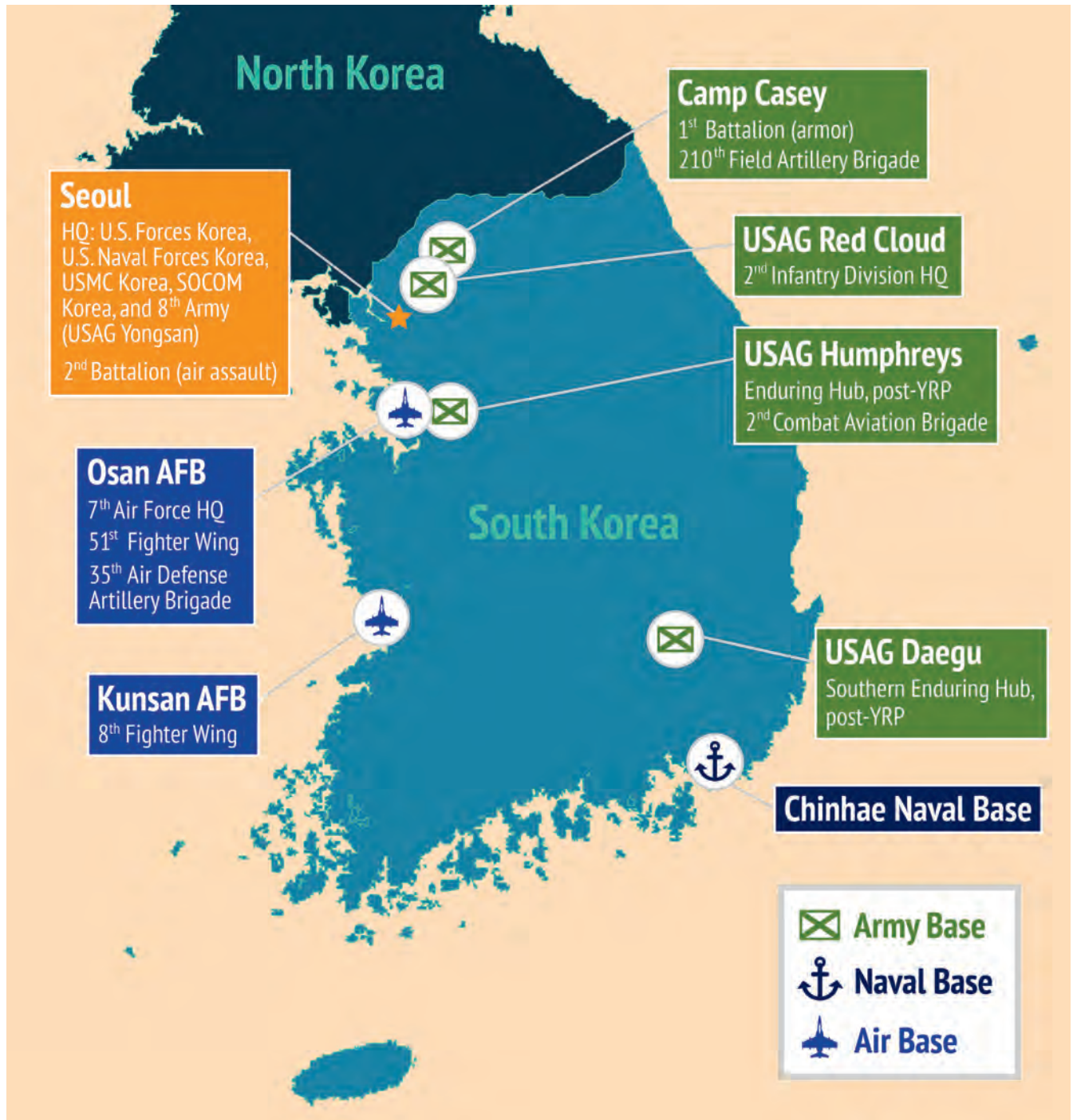
In South Korea, the United States is pursuing large changes to its posture under two plans: the Yongsan Relocation Plan (YRP) and the Land Partnership Plan (LPP). The YRP consolidates U.S. Forces Korea (USFK) into two enduring hubs south of Seoul near Pyongtaek and Daegu. The facility consolidation plan remains on schedule and on budget.¹⁰⁴ The YRP is funded by the South Korean government and relocates USFK and UNC from Seoul to U.S. Army Garrison (USAG) Humphreys. The LPP, funded by the United States, consolidates forces north of Seoul to USAG Humphreys. The \$10.7 billion YRP/LPP will roughly triple the land-area of USAG Humphreys, and will see the population housed there grow from 10,000 to 36,000 personnel and dependents. The expanded population at USAG Humphreys requires creation of new housing facilities as U.S. troops who formerly rented housing on the local economy are to be housed in purpose-built housing.

In addition to USFK and UNC, Eighth Army and the USMC HQ will relocate to Humphreys, and U.S. Naval Forces Korea will co-locate with the ROK Navy Fleet at Busan.¹⁰⁵ Seventh Air Force facilities at Osan AB will be upgraded. Certain critical defense capabilities, such as the 210th Field Artillery Brigade, will remain north of Seoul, and a residual CFC footprint will remain at Yongsan Garrison in Seoul.¹⁰⁶

The relocation construction plan is experiencing some challenges. Despite Korean press reports that relocation will be completed by 2016, construction delays based on quality-control issues with some local contractors, a number of whom have filed for bankruptcy, are delaying completion. Moreover, planners anticipate delays as Korean construction companies and relocation services shift attention to building infrastructure for the 2018 Winter Olympics in Pyeongchang. These challenges could delay meeting the 40 percent completion of facilities requirement for command-sponsored families living on-post.¹⁰⁷ This in turn has delayed preparations for the movement of units out of Yongsan by the end of 2016 (e.g., as of mid-2015, contract bids for ROK moving companies are only now being solicited). Thus, managing the public's expectations of both the pace of unit movements as well as the size of the residual Yongsan Garrison footprint (e.g., residual U.S. embassy housing in Yongsan) will be important.

The operational impact of potential delays in construction is expected to be marginal. As noted in the 2014 joint communique of the Security Consultative Meeting (SCM) between Secretary of Defense Hagel and Defense Minister Han, the two countries' militaries will follow a conditions-based approach to relocate U.S. forces, to ensure that U.S. and ROK forces have all appropriate capabilities to effect a smooth operational control transition to the South Korean military. The SCM statement noted that Combined Forces Command and a minimum of personnel would remain at the Yongsan Garrison to ensure smooth transition at an appropriate time.

FIGURE 7: Major U.S. Forces in South Korea



U.S. Force Posture in Australia

In 2011, the United States and Australia stated an agreement to establish—and then increase—USMC and USAF rotational presence in Australia. USAF rotations to Australia have included fighters and tankers. Additionally, U.S. bombers have conducted proof-of-concept deployments. The USMC is rotating through Darwin, with a plan to reach a maximum of 2,500 Marines on routine six-month rotations. The agreement has increased training and exercise opportunities, especially for amphibious training as Australia seeks to reestablish its amphibious warfare capability. In addition to the 2011 statement, U.S. officials have worked with Australian counterparts to develop additional cooperative initiatives between the two countries' military services, including with the navies.

U.S. presence in Australia provides the United States with training facilities, as well as basing access outside most threat missile ranges. Though having 2,500 Marines is unlikely to be a decisive force against a heavily fortified high-end adversary, it provides a significant capability that can independently deploy and operate under a wide range of conditions. USMC forces at Darwin could prepare and defend beaches, ports, or airfields in the region to receive a larger follow-on force. In addition, Australia is well-located for conducting engagement activities with Indian Ocean littoral states.

U.S. Force Posture in Hawaii, Guam, and the Mariana Islands

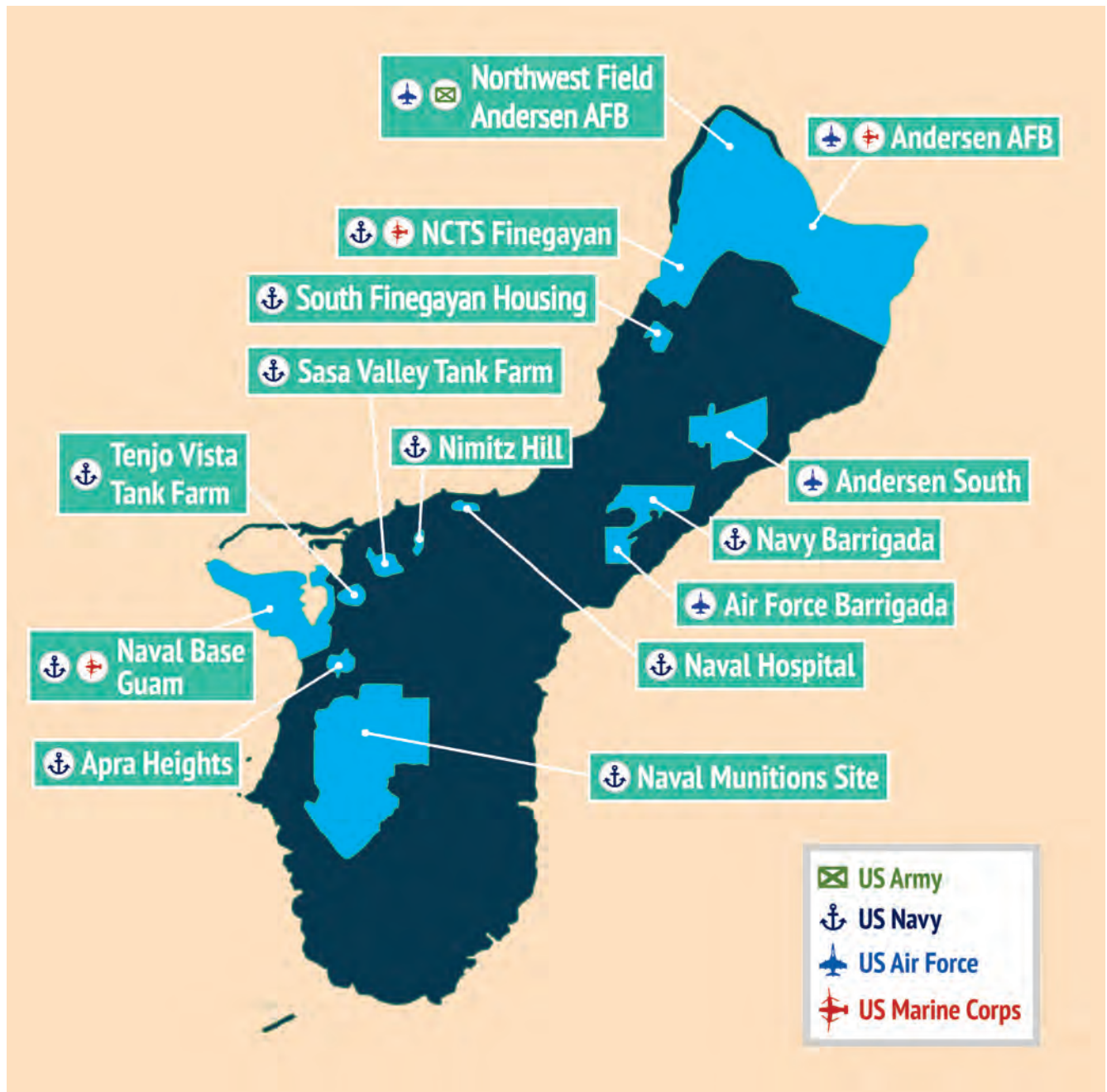
As the United States continues to rebalance to and within the Pacific, it will undertake additional force posture movements, and has committed to deploying new capabilities to the region. In addition, the United States is pursuing initiatives to develop training ranges that, if realized, would enhance U.S. posture and readiness in the future.

Hawaii, long the gateway to the Pacific, is home to PACOM HQ and major installations for each service: Joint Base (JB) Pearl Harbor-Hickam for the USN and USAF, Marine Corps Base Hawaii, and U.S. Army Garrison Hawaii. All together, U.S. forces in Hawaii include 29 USN vessels, 2 fighter squadrons, 3 airlift squadrons, 3 BCTs, 1 Marine infantry regiment, and 1 combat aviation brigade. Hawaii serves as an important location for training of U.S. forces and working with ally and partner militaries within the region.

The importance of Guam to U.S. presence and posture in the Asia-Pacific is growing. Guam is sovereign U.S. territory west of the International Date Line and 3,800 miles west of Hawaii; it is less than a four-hour flight from Manila, and less than five hours by air from Seoul. The proximity of Guam to numerous U.S. allies and partners in Asia drives the strategic rationale for continued development of Guam as a strategic hub. U.S. forces in Guam provide the United States with a flexible response force and a staging area from which to respond to possible contingencies.

Within Guam, the USMC is continuing its planned buildup, as part of the Defense Policy Review Initiative (DPRI) with Japan, for which Japan has contributed over \$1.15 billion to date for construction on Guam. Naval Base Guam hosts four *Los Angeles*-class nuclear attack submarines, a submarine tender, and Naval Special Warfare Unit One (NSWU-1), PACOM's Special Operations Force (SOF) maritime task force. Andersen AFB, on the north side of Guam, is home to the 36th Air Wing, an expeditionary air wing that commands aircraft on rotation through Guam. Andersen AFB also hosts a THAAD unit, currently deployed to provide defense against ballistic missiles.

FIGURE 8: Main U.S. Facilities in Guam



Even as Guam continues to grow in strategic importance to the United States, several concerns and opportunities remain noteworthy. First, Guam is increasingly within range of advanced ballistic and cruise missiles from possible adversaries. The currently deployed THAAD battery provides defense against ballistic missiles, but military installations on Guam are vulnerable to air- and sea-launched cruise missiles. Defense officials would consider strikes against Guam, a U.S. territory, as highly escalatory.

Second, U.S. forces in the Pacific lack adequate forward training areas to ensure readiness. The USMC and USAF are pursuing development of facilities in the Commonwealth of the Northern

Mariana Islands (CNMI). The current plan under discussion would provide for small-scale USMC training ranges on the island of Tinian and large-scale live-fire and maneuver ranges on Pagan. Tinian has a population of approximately 3,100 people while Pagan's permanent residents were evacuated following an earthquake in 1981. Volcanic activity has prevented permanent return. Development of training ranges in the Western Pacific would enable U.S. forces to maintain readiness without the loss of transit time to and from Hawaii or the U.S. West Coast.

Third, DOD has an opportunity to leverage existing airfields throughout CNMI for occasional training by the USAF, USN, and USMC. Exercising in this way would leverage existing facilities to provide both realistic training, and expand options in a contingency.

The Defense Department's investments in Guam have attracted high levels of interest and oversight from the Congress. While on face value the construction costs on Guam appear high, they are in line with similar construction elsewhere in the Asia-Pacific, and reflect requirements for construction to withstand a range of potential natural disasters, including typhoons and earthquakes. Future construction, including possible training ranges in CNMI, should adhere to the same high standards for stewardship of taxpayer dollars.

UNITED STATES PRESENCE ACTIVITIES

U.S. military posture encompasses not just military installations, but also the activities and operations of U.S. forces in the region. These activities help U.S. forces maintain readiness, so that they are prepared to respond effectively to crises and contingencies that might arise. However, longer deployments require rest and reset of U.S. forces, and thus there is a balance between providing near-term power projection and presence, and the long-term need to rest, reset, and sustain the force for future, potentially more important and challenging, deployments. U.S. military activities in the Asia-Pacific region include presence designed to assure and deter, including aerial reconnaissance and freedom of navigation (FON) operations, exercises and training to improve U.S. and collective capabilities, and other forms of theater security cooperation.

Routine presence includes a range of standard activities undertaken by U.S. forces during peacetime, such as USN ship patrols, interactions with other vessels at sea, calls on foreign ports, and USAF flights and patrols in international airspace. Presence activities provide a steady signal of reassurance to U.S. allies and partners, support deterrence of potential adversaries, and contribute to timely U.S. responses to a range of possible contingencies. For example, USMC forces conducting predeployment training on ranges in the Commonwealth of the Northern Mariana Islands were on-hand during the onset of Typhoon Soudelor in August 2015. Their presence enabled the near-immediate provision of fresh water, logistics, and helicopter lift to the affected islands.

Aerial reconnaissance and surveillance activities, such as those conducted by U.S. aircraft over disputed areas in the South China Sea—and widely publicized by an embarked CNN crew in the summer of 2015—represent another subset of routine presence activity. Conducted with the primary purpose of providing U.S. military and defense leadership with information about changing situations, these missions sometimes provoke responses from the targets of surveillance. Dangerous incidents have occurred, such as the collision of a USN EP-3E reconnaissance plane and

a PLA Naval F-8 fighter over the South China Sea in 2001. U.S. reconnaissance flights in international airspace remain a source of tension between the United States and China.

Another routine presence activity is FON. In FON operations U.S. military forces exercise the right of free passage, traversing foreign countries' claimed maritime or airspace that the United States does not recognize as consistent with international law. Inconsistencies include claims of jurisdiction or sovereignty not based on the standards established in the United Nations Convention on the Law of the Sea (UNCLOS). For example, claims could assert rights of sovereignty in areas UNCLOS defines as international waters, or could base claims of jurisdiction on artificially created features. If these claims, made by many in the region, and particularly by China, gain greater acceptance under international law or if the United States compromises its interpretation of those activities authorized under UNCLOS, it could substantially affect U.S. operations not only in the South and East China Seas, but also globally. This would hamper the U.S. forces' ability to defend not just U.S. interests but also those of all other nations "whose lawful uses of the sea and airspace [is] guaranteed . . . under international law," as Admiral Harris notes.¹⁰⁸

The U.S. Navy ship *USS Lassen* conducted a FONOP challenging China's claims around Subi Reef in the Spratly Islands in November 2015. This action received high interest in news media, and based on press reports, from China as well. FON activities are an important tool for U.S. policymakers to demonstrate commitment to international law. In most cases, the United States does not announce FON operations in advance, and only reports them as part of an annual report. Largely, FONs are conducted without fanfare to reduce the risk to U.S. personnel. With advance notice, the country subject to a FON challenge is provided the opportunity to intercept, and possibly engage, a U.S. vessel that otherwise may have gone unnoticed.

U.S. military training and exercises, either combined with foreign partners or solely as a U.S. force, increase interoperability and readiness while also testing new capabilities and concepts. Combined exercises with partners include large-scale exercises such as COBRA GOLD, co-hosted with Thailand; BALIKATAN, conducted with the Philippines; and RIMPAC. U.S. forces also conduct a number of training activities, including unilateral training and joint combined exchange training (JCET) with highly capable partners.

ADDITIONAL SECURITY CHALLENGES

While U.S. military power and global posture remain unmatched, competing strategic challenges are straining the posture elements of the rebalance. Global demands for U.S. forces are high—higher than anticipated when the Obama administration announced the rebalance—and are likely to endure at least in the short to medium term. While there is no way to predict the future, the steady pace of emerging security issues does not seem likely to decrease in the coming years. This demand comes at a time of constrained budgets and associated force reductions. Former Chairman of the Joint Chiefs of Staff Gen. Martin Dempsey noted in March 2015, "We are at a point where our national aspirations are at risk of exceeding our available resources."¹⁰⁹

The United States today is contending with a host of security challenges across multiple regions that were unforeseen four years ago when the Budget Control Act was passed and the Obama

administration announced the Asia-Pacific rebalance. In the Middle East, the United States is extending its presence in Afghanistan, fighting a fluid and evolving campaign in Iraq and Syria against ISIL, managing security commitments to Arab partners to deter Iran, and maintaining pressure on al Qaeda and its regional affiliates. In Europe, the United States is taking steps to deter further Russian aggression in Ukraine and to reassure NATO allies along the alliance's eastern flank in the face of Moscow's new assertiveness. In addition to shifting regional security demands, the U.S. military continues to respond to humanitarian disasters. Over the past two years alone, the United States has deployed at least 16,450 U.S. troops to new or extended missions in the Middle East, Europe, and Africa.¹¹⁰ While there is no way to predict the future, the steady pace of emerging issues does not seem likely to decrease in the coming years. At the same time, the number of troops available for deployment is shrinking as a result of the postwar drawdown. The U.S. Army (USA) has declined from an active duty peak of 566,000 personnel in 2010 to 490,000 in 2015 and is headed to 450,000 in 2018. The USMC has gone from 202,000 to 184,000.

With a smaller force, a constrained budget, and a high demand for forces, policymakers and military leaders must cope with difficult strategic tradeoffs if the United States is to continue to focus on regions and issues that are important rather than only respond to those that are urgent. Current fiscal constraints risk mortgaging the future to pay for present crises. Despite budgetary and operational pressures, DOD continues to enhance U.S. posture in the Asia-Pacific. Nevertheless, the force-resource mismatch presents risk to the overall force, with potentially troublesome long-term consequences for the rebalance.

It should be noted, however, that the relationship between out-of-area security challenges and alliance cooperation within Asia is not entirely zero-sum. South Korea committed the third-largest contingent in Iraq after the United States and the United Kingdom. Australian defense forces were at the "pointy end of the spear" at the beginning of operations in both Operation IRAQI FREEDOM and Operation ENDURING FREEDOM. Japan sent its first ground forces component to the Middle East in southern Iraq, where it worked closely with the Royal Australian Regiment. These experiences created stronger operational relationships among U.S. Asia-Pacific allies and an indirect but important deterrent message to potential adversaries in Asia about the solidarity of these alliances.

Enduring Missions in Afghanistan

The United States formally ended its combat role in Afghanistan at the end of 2014 and has transitioned to a long-term mission under Operation Freedom's Sentinel to build and sustain the Afghan National Security Forces (ANSF) and conduct partnered counterterrorism operations against al Qaeda.¹¹¹ Security conditions in Afghanistan remain tenuous and there are indications that the U.S. military has remained more active on the battlefield than was originally envisioned for the post-2014 transition.¹¹² The United States continues to fill gaps in the Afghan National Security Force's (ANSF) capabilities in areas such as logistics, intelligence, mobility, and fire support, and may need to continue doing so for years.¹¹³ Furthermore, U.S. troop reductions have not significantly diminished the demand in Afghanistan for high-demand assets such as airborne ISR platforms, which are needed to collect intelligence, protect coalition forces, and enable counter-

terrorism operations.¹¹⁴ President Obama's October 2015 decision to maintain 9,800 troops in Afghanistan through most of 2016, and maintain at least 5,500 in 2017, reflect mounting concerns about continued security in that country.¹¹⁵ Despite the end of U.S. combat operations and the lighter footprint, the residual missions in Afghanistan will likely continue to place high demands on the most-stressed parts of the military.

Combatting ISIL in Iraq and Syria

Following ISIL's seizure of large areas in Iraq and Syria and the brutal execution of American hostages in mid-2014, the United States launched a campaign to degrade and ultimately destroy the group. The United States-led campaign, which includes a coalition of 60 countries, encompasses several lines of effort: direct action through airstrikes, training and support for Iraqi and Syrian partner ground forces, impeding the flow of foreign fighters, and addressing humanitarian concerns.¹¹⁶ U.S. airstrikes against ISIL began in Iraq in August 2014 and expanded the following month into Syria. The air campaign over Iraq and Syria has placed high demands on U.S. combat aviation forces and crucial enablers such as airborne ISR assets, airlift, and refueling aircraft.¹¹⁷ By the end of September 2015, the United States and coalition forces had conducted over 23,000 close air support, escort, and interdiction sorties (releasing over 24,800 munitions), 9,200 ISR sorties, and 16,500 tanker sorties in support of counter-ISIL operations.¹¹⁸ The air campaign has gradually intensified, with the coalition dropping 200 percent more munitions between July and September 2015 (the last three months statistics were available).¹¹⁹ While President Obama has made clear that he will not send U.S. ground forces to combat ISIL, there is an evolving U.S. role on the ground. In October 2015, Secretary of Defense Ashton Carter indicated to Congress that the United States intended to further intensify the air campaign with more aircraft conducting a higher and heavier rate of airstrikes.¹²⁰ Moreover, U.S. Special Operations Forces have been involved in direct action operations on the ground in Iraq and Syria and U.S. officials have signaled U.S. SOF forces may move closer to the frontlines.¹²¹

The United States has deployed several thousand military advisers into Iraq to rebuild the battered Iraqi military and to train and equip associated Kurdish and tribal forces.¹²² The United States is also undertaking a multiyear effort in neighboring countries to support Syrian opposition forces to combat ISIL.¹²³ Military operations against ISIL cost roughly \$10 million a day with an overall cost of \$4 billion as of September 2015.¹²⁴ Senior U.S. officials have described the campaign against ISIL as a multiyear effort and it will likely remain a high-priority and resource-intensive mission in the future.¹²⁵ In addition, the United States has deployed hundreds of support personnel to Turkey and Jordan, as well as a PATRIOT battery to Turkey from 2013–2015 in support of allied air defenses after repeated airspace violations by the Syrian Air Force.¹²⁶

Iran and Arab Reassurance in the Persian Gulf

Among the highest U.S. national security priorities has been preventing Iran from developing a nuclear weapon and deterring Iranian regional provocations.¹²⁷ The Obama administration has pursued this goal through a strategy of strong and consistent deployment of forces and multilateral negotiations backed by economic sanctions and military capabilities. The U.S. military pres-

ence in the region amounts to over 35,000 troops and includes major bases in the United Arab Emirates, Bahrain, Qatar, and Kuwait as well as a robust naval force in the Persian Gulf of roughly 30 ships, including consistent coverage in recent years by at least one CSG and often one Amphibious Readiness Group.¹²⁸

Multilateral negotiations produced the comprehensive nuclear agreement reached with Iran in July 2015, which could have significant implications for regional security and long-term U.S. military presence. The agreement could bring about a relaxation of tensions between the United States and Iran, raising the possibility that the United States could eventually reduce its presence in the Middle East and free up forces for the Asia-Pacific.¹²⁹ U.S. regional allies including Israel and the six Arab members of the Gulf Cooperation Council (GCC), however, have raised concerns about the agreement, in part due to their reliance on the U.S. security umbrella as a hedge against Iranian influence. The Obama administration has responded with a policy of strategic reassurance in the Persian Gulf that entails maintaining a long-term military presence in the region.¹³⁰ In May 2015, the Obama administration pledged to defend the GCC states from external aggression, reaffirmed the United States' commitment to regional security, and announced new initiatives to expand and deepen U.S.-GCC security cooperation.¹³¹ Fulfilling these security commitments will require that the United States maintain a robust presence in the Persian Gulf going forward.

Countering an Increasingly Belligerent Russia

The United States faces new challenges in the European security environment, which has been reshaped by Russia's invasion and annexation of Crimea and its support to separatist rebels in eastern Ukraine. The crisis over Ukraine's sovereignty and geopolitical orientation has led to rising tensions between Russia on one side and the United States and its European allies on the other. The United States and European states have primarily responded with non-military instruments including political and economic support to Kiev and targeted sanctions against Russia.¹³² Thus, U.S. military support to Ukraine has been modest and limited to a military training mission and non-lethal equipment.¹³³

In addition to its flagrant violation of Ukraine's territorial sovereignty, Moscow has also made provocations in the broader region by staging large-scale snap military exercises near its borders and expanding naval and air patrols along NATO's periphery. These actions have been noted in NATO and have stirred concerns in the Baltic States, Poland, and Romania.¹³⁴ In order to deter Russia and reassure NATO allies, the United States has taken steps to demonstrate its commitment to the alliance and strengthen allied capabilities. This has come primarily through the European Reassurance Initiative, a \$1 billion annual effort in FY 2015 and proposed again for FY 2016, to support enhanced military exercises, new programs for building security capacity, and augmented deployments of rotational forces.¹³⁵

Heightened tensions with Russia could place a new emphasis on the importance of ballistic missile defense (BMD) in Europe.¹³⁶ In 2009, President Obama announced the European Phased Adaptive Approach (EPAA) to defend European allies and U.S. forces against current and future ballistic missile threats from Iran by deploying sea-based BMD systems to the Mediterranean and building an Aegis system ashore.¹³⁷ DOD has implemented the sea-based element of EPAA

by rotating 10 BMD-capable Aegis-equipped destroyers between the United States and Europe, leaving fewer assets available for the Asia-Pacific where sea-based BMD systems are ideal for the threat environment.¹³⁸ However, ship-demand will be reduced now that the last of four BMD-capable Aegis-equipped destroyers has completed its permanent move to Rota, Spain, and given the placement of Aegis Ashore in Romania.

The renewed emphasis on European security comes at a time when U.S. allies have further reduced their defense spending due to social and economic pressures. It is likely that in 2015 only the United States, Poland, Greece, Estonia, and the United Kingdom (UK) will meet the NATO target of spending 2 percent of gross domestic product (GDP) on defense.¹³⁹ Years of defense cuts have begun to expose startling gaps in allied military capabilities. For example, in late 2014, the United Kingdom was forced to call in U.S., French, and Canadian maritime patrol aircraft to search for a suspected Russian submarine operating off the coast of Scotland.¹⁴⁰ Before World War I, the United Kingdom had the world's largest navy, and during the Cold War, British forces had primary responsibility for securing the North Atlantic sea lanes. Today, however, the United Kingdom does not have a dedicated maritime patrol aircraft, which is a basic antisubmarine capability. There are also troubling signs that some NATO members lack the political will to live up to the alliance's commitment to collective defense. A 2015 poll found that less than half of the German, French, and Italian publics believe their country should come to the defense of a NATO ally if it were attacked by Russia.¹⁴¹

While the Obama administration has stated that European reassurance efforts would not come at the expense of the Asia-Pacific rebalance, managing a more assertive Russia and reassuring European allies who possess diminished capabilities may require the United States to rethink its long-term force posture in Europe.¹⁴² U.S. strategy in Europe since the fall of the Soviet Union has rested on Russia's emergence as a partner in the European security community rather than as an adversary.¹⁴³ Without a clear need for a large conventional deterrent force, U.S. forces in Europe were excess to the region's security requirements and were steadily downsized. In recent years, the United States further economized its European presence in part to resource the shift toward the Asia-Pacific and to support contingency operations in the Middle East.¹⁴⁴ Today U.S. forces in Europe total 68,000 service members, down from a Cold War level of 350,000 in 1989.

In the wake of Russia's invasion of Ukraine, there has not been a significant net increase in U.S. troops stationed in Europe. Instead, DOD has deferred planned force reductions and augmented the troops permanently stationed in Europe with rotational deployments.¹⁴⁵ The United States military presence in Europe is also shifting eastwards as excess infrastructure in Western Europe continues to be closed and more reassurance activities are conducted with NATO members in the Baltics and Eastern Europe. The need to deter Russia and reassure NATO allies will make resource and force demands that could complicate plans to resource the Asia-Pacific rebalance.





4 | THE ROLE OF ALLIES, PARTNERS, AND REGIONAL ORGANIZATIONS

cion. Moreover, U.S. allies and partners are increasing security cooperation among themselves, in effect networking the traditional hubs and spokes in new bilateral and trilateral arrangements. This is a positive development for stability in the region and one U.S. policy should support.

This section begins by discussing U.S. treaty allies, namely Japan, South Korea, Australia, the Philippines, and Thailand, followed by critical U.S. partners, such as India, Taiwan, Singapore, Indonesia, Malaysia, and Vietnam. Each ally and partner section describes views on the country's security outlook, military capabilities and posture, cooperation with the United States, and capability gaps and shortfalls that need to be addressed. Other important regional players, including Bangladesh, Brunei, Cambodia, Laos, Mongolia, Myanmar, Nepal, New Zealand, and smaller Pacific island nations are discussed in this section and elsewhere, but due to their lesser role in U.S. military strategy and force posture, they are not broken into separate sections. The section concludes by reviewing the importance of regional organizations for helping states to manage shared security challenges.

JAPAN

Japan is critical to the rebalance strategy as a lynchpin for U.S. access and influence in the Asia-Pacific region. There is a broad consensus in Japan that U.S. and Japanese regional interests align closely, but economic stagnation, the 2011 Tohoku earthquake, and political paralysis slowed Japan's capacity for leadership between 2006 and 2012. The government of Shinzo Abe has since been able to muster the political cohesion and capital to begin implementing a comprehensive strategy to cooperate more closely with the United States and regional partners in maintaining security. The U.S.-Japan alliance remains the cornerstone of Japanese foreign policy, anchored by the 1960 Treaty of Mutual Cooperation and Security. The Treaty enshrined a core strategic bargain committing the United States to Japan's defense in exchange for U.S. access to bases in Japan, to be used for the maintenance of peace and security in the Far East.¹⁴⁶ That core strategic bargain remains intact today, but alliance cooperation has evolved in response to changes in the regional security environment.

An assessment of current regional security dynamics has prompted a shift in Japan's defense strategy. Tokyo's emerging approach focuses on maritime security and enhancing Japan's own capabilities while also improving interoperability with the U.S. military. The two governments unveiled new guidelines for bilateral defense cooperation earlier this year that reflect these developments and the Japanese Diet subsequently passed legislative changes necessary to implement the guidelines. Washington and Tokyo also plan to enhance networking with other militaries in the region to strengthen deterrence and regional stability. Japan's desire and ability to assume a greater leadership role in security affairs supports U.S. strategic interests, which depend fundamentally on robust alliance relationships throughout the region.

Security Outlook

Japan faces an increasingly complex regional environment and seeks to enhance its capacity to address an array of security challenges. Security concerns include North Korea's nuclear

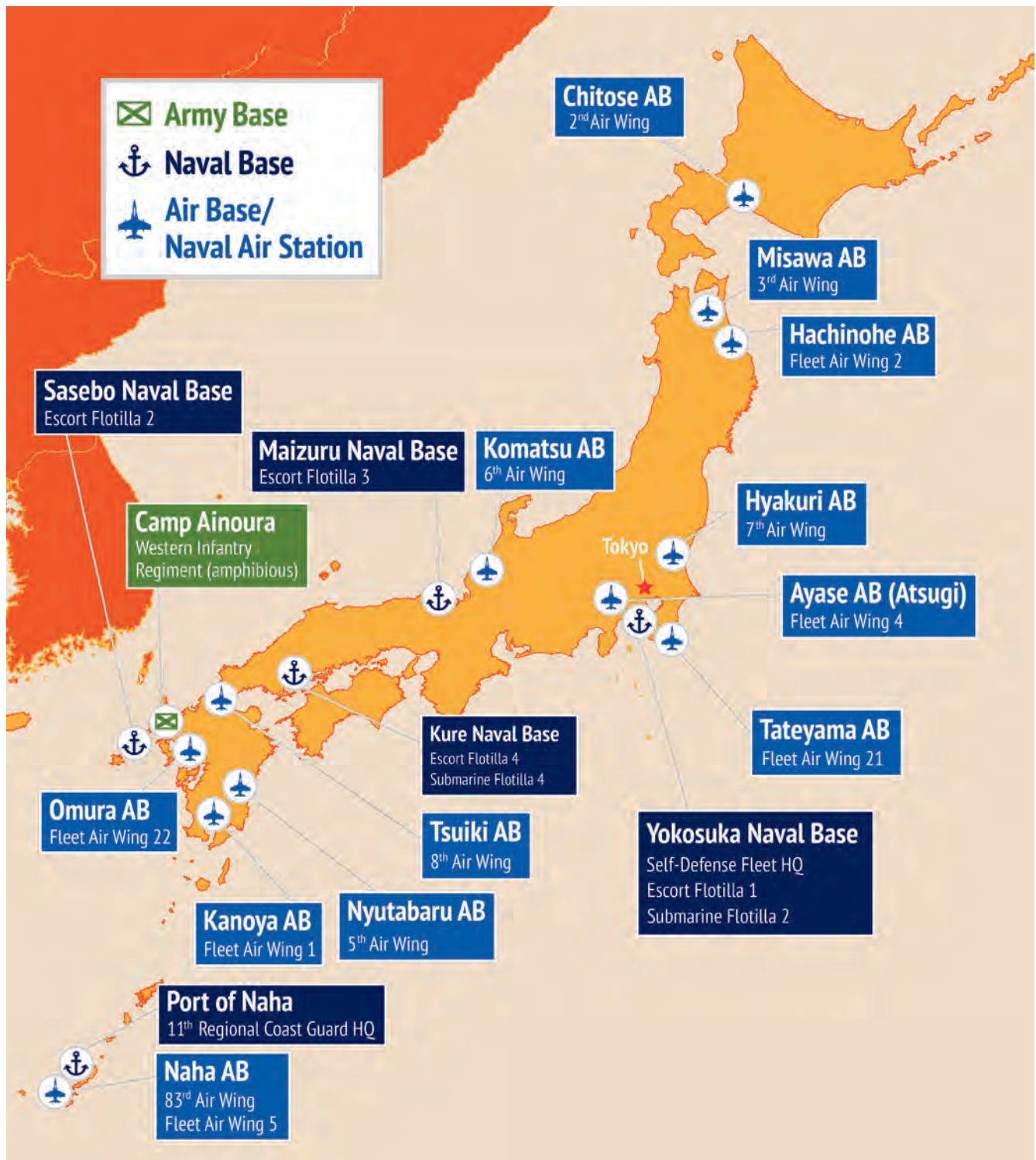
weapons and ballistic missile programs, uncertainty about Beijing's long-term intentions and its coercive actions in pursuit of maritime claims in the East China Sea (especially in the sea and air space surrounding the disputed Senkaku/Diaoyu Islands), and potential risks in new domains such as space and cyber. These concerns prompted the recent introduction of a comprehensive security strategy aimed both at enhancing Japan's own capabilities to deter conflict and at strengthening ties with the United States and regional partners. Japan's evolving security strategy is reflected in a series of documents designed to provide a framework for policymaking over the next decade. Prime Minister Shinzo Abe established a National Security Council (NSC) to formulate strategy and to centralize foreign policy decisionmaking. In December 2013, the NSC published Japan's first ever National Security Strategy (NSS) outlining three core national security objectives: strengthening deterrence to reduce threats against Japan, improving the security environment in the Asia-Pacific region by strengthening the U.S.-Japan alliance and promoting cooperation with other countries, and improving the global security environment and the international order based on universal values and norms.¹⁴⁷ The government also unveiled a new defense strategy to plan for the defense of Japan's southwest islands by encouraging greater jointness within Japan Self-Defense Forces (JSDF) and deepening interoperability with U.S. forces. Priorities include the development of amphibious capabilities; ISR; command, control, communications, and intelligence; BMD; and space and cyber defense.¹⁴⁸

The defense strategy, or National Defense Program Guidelines (NDPG), was accompanied by a budget blueprint known as the Mid-Term Defense Program (MTDP). The MTDP outlined procurement priorities, primarily air and naval assets, and proposed a 5 percent increase in defense spending over the next five years.¹⁴⁹ The MTDP centered on improving JSDF capabilities to respond to attacks on remote islands, ballistic missile attacks, outer space and cyber space threats, large-scale HA/DR efforts, and United Nations peacekeeping operations. The Abe government also passed information security legislation to facilitate intelligence sharing with the United States. Moreover, Japan has relaxed restrictions on arms exports to promote defense industrial cooperation and thereby enhance efficiency and interoperability with U.S. forces.

In July 2014, the Abe cabinet announced defense policy reforms based on a reinterpretation of Article 9 of the Japanese constitution. Abe's decision to reinterpret Article 9 was informed by the recommendations of an outside panel of security experts who argued that exercising collective self-defense would enable the JSDF to better defend Japan and reinforce international order.¹⁵⁰ Proponents also noted that Abe's reforms are focused less on the JSDF using force and more on creating security partnerships with others in the region and thereby "bolster its deterrent function to maintain a balance of power in the region against a rising China."¹⁵¹ Opponents lamented the potential for the JSDF to use force and contend the proposed legislation would require a constitutional amendment.¹⁵² There is a clear ideological divide over security policy reform, but the Abe government's decision to proceed despite public concerns reflects a determination to support steps that the prime minister deems critical to Japan's national interests.

The reforms allow the JSDF to exercise the right of collective self-defense and aid allies under attack. Article 9 renounces war as a sovereign right of the nation and prohibits the threat or use of force to resolve international disputes, but previous governments reinterpreted that clause to

FIGURE 10: Japanese Air, Naval, and Amphibious Force Posture



allow a limited use of force for self-defense and revised Japanese policy incrementally in response to new security challenges. The Abe cabinet interpretation mirrors that of previous governments in stating that measures of self-defense are permitted under Article 9 when an armed attack against Japan occurs, there are no other means to repel an attack and ensure Japan’s security,

and the use of force is limited to the minimum extent necessary. Japan has an inherent right to collective self-defense under Article 51 of the United Nations Charter, but legal specialists in the government had long rejected that right as violating the “minimum extent necessary” requirement. The Abe cabinet concluded that measures of collective self-defense are permitted when an attack against a country in a close relationship with Japan occurs and as a result threatens Japan’s security. The decision on collective self-defense reflects an emphasis on deterrence and increased security cooperation and was therefore welcomed by the U.S. government as an effort to enhance Japan’s role in the alliance. U.S. officials stressed the prospect for improved information sharing and coordination that could strengthen interoperability between the two militaries.¹⁵³

The Abe government submitted implementing legislation for collective self-defense to the Japanese parliament, the Diet, in May 2015. The bills cleared the Lower House of the Diet in July 2015, despite a boycott by opposition parties, and passed the Upper House in September 2015.

Current and Planned Force Posture

The JSDF includes 247,000 active and 56,000 reserve personnel.¹⁵⁴ Japan’s Ground Self-Defense Force (JGSDF) includes 151,000 personnel, divided into command; special forces; maneuver (armored, mechanized, light, air maneuver, and aviation); combat support; and combat service support roles. Japan’s Maritime Self-Defense Force (JMSDF) numbers 45,500 personnel and fields 47 principal surface combatants, 18 submarines, 6 patrol and coastal combatants, 35 mine warfare/mine countermeasures (MCM) vessels, 3 amphibious landing ships, 20 amphibious landing craft, and 82 logistics and support vessels. The JMSDF also includes seven naval aviation air groups. Japan’s Air Self-Defense Force (JASDF) includes 47,000 personnel, with seven combat wings divided into 12 squadrons of fighter aircraft, 2 EW squadron, 1 ISR squadron, 3 airborne early warning and control (AEW&C) squadrons, 1 SAR wing, 1 tanker squadron, 4 transport squadrons, 1 training squadron, 1 test wing, and 4 transport helicopters fleets. The JASDF also fields 4 air defense wings and 28 radar sites. Finally, the Japanese Coast Guard, which plays an increasingly important role in maritime security, includes 12,650 personnel with over 395 patrol and coastal vessels as well as fixed-wing aircraft, helicopters, and logistics and support vehicles. In addition to these forces, the JSDF established a command, control, communication, and computer (C4) Systems Command in 2008 and a cyber planning office in the Joint Staff Office in 2012. A Cyber Defense Group was created in March 2014. Figure 10 shows the posture of major JSDF units within Japan.

Japan’s December 2013 defense strategy calls for a reduction in JGSDF regionally deployed units but an increase in rapid mobility units to support amphibious capabilities. The MTDP prioritizes the procurement of air and naval assets, including Aegis-equipped destroyers, *Soryu*-class submarines, P-1 patrol aircraft, SH-60K patrol helicopters, new AEW&C aircraft, F-35A Joint Strike Fighters, F-15 modernization, C-2 transport aircraft, Patriot Advanced Capability-3 Missile Segment Enhancement (MSE) surface-to-air guided missiles, and unmanned aerial systems (UAS).¹⁵⁵

Security Cooperation with the United States

Japan’s force structure and posture are directly tied to cooperative efforts under the U.S.-Japan alliance. In April 2015, the U.S.-Japan Security Consultative Committee (SCC), consisting of the

U.S. secretaries of state and defense and their Japanese counterparts, approved new guidelines for bilateral defense cooperation. These guidelines build on the Abe government's proposed security policy reforms and address new challenges in the regional security environment.¹⁵⁶

Guidelines for defense cooperation were first introduced in 1978 to clarify priorities for the defense of Japan and were updated in 1997 to incorporate regional security. Yet, actual planning proved difficult without knowing whether Japan would exercise the right of collective self-defense. The new guidelines affect bilateral security cooperation in three ways. First, they aim to improve operational coordination between the two militaries by standing up an Alliance Coordination Mechanism. Second, they broaden the scope of functional cooperation to include ISR, air and missile defense, maritime security, space and cyber, peacekeeping operations, partner capacity building, HA/DR, and noncombatant evacuation operations (NEOs). The guidelines also promote the further integration of the two militaries and coordination with third countries based on Japan's potential to exercise collective self-defense. Examples of JSDF operations referenced in the guidelines include asset protection; search and rescue; maritime operations (such as minesweeping, escort operations, and interdiction); intercepting ballistic missiles; and logistics support. Japan's new policy on collective self-defense does not focus on offensive military operations but rather on rear-area integration with U.S. and other forces. The guidelines also focus on joint research and development efforts to encourage interoperability and strengthen deterrence.

In April 2015, the SCC issued a joint statement reaffirming a commitment to implement existing arrangements on the realignment of U.S. troops in Japan, focusing primarily on Okinawa. In 1996, the SCC approved a plan that recommended returning approximately 21 percent of the total acreage of U.S. facilities and areas in Okinawa, including the controversial Marine Corps Air Station Futenma, which is located in the heavily populated neighborhood of Ginowan. In May 2006, the SCC approved a roadmap for realigning U.S. forces, which included construction of a Futenma Replacement Facility (FRF) in northern Okinawa near U.S. Marine Corps' Camp Schwab.¹⁵⁷ Under that plan, 8,000 members of the Third Marine Expeditionary Force and their dependents would have been relocated from Okinawa to Guam, and the relocation to Guam would be dependent on progress toward completion of the FRF and Japan's financial contributions to initiatives on Guam.

Local opposition to the relocation plan for Futenma hardened in 2009 and 2010 after Prime Minister Yukio Hatoyama promised to explore options to relocate MCAS Futenma outside Okinawa prefecture. Yet, several months later the Japanese government concluded there were no viable alternatives to the 2006 road map. The Okinawa Prefectural Government then refused to approve the construction plan for the FRF and the U.S. Congress began to raise questions about the capacity of Guam to absorb the transferred Marines and their dependents. Recognizing these complications, the SCC issued a new plan in April 2012, delinking the construction of the FRF from the relocation of Marines to Guam.¹⁵⁸ Marines and their dependents would be relocated to areas outside Japan, including Australia, Hawaii, and Guam. The two governments reiterated their belief that the existing plan for the FRF was the most viable option for relocating MCAS Futenma and a year later released a consolidation plan for facilities and areas in Okinawa to demonstrate a commitment to land returns.¹⁵⁹

In December 2013, Okinawa Governor Hirokazu Nakaima approved a landfill permit for the FRF at Henoko. In November 2014, Nakaima was defeated in a gubernatorial election by Takeshi Onaga, who campaigned against the Henoko Relocation Plan, vowed to halt construction of the facility, and demanded that it be relocated outside the prefecture. In July 2015, an advisory panel to Onaga submitted a report expressing concerns that the central government's application lacked environmental protection measures for the Henoko Bay area and that the permit approval might have violated local laws related to reclamation of surface areas. The central government has argued that the matter was settled by Governor Nakaima and reiterated a commitment to proceed with the Henoko project, but in August 2015, Chief Cabinet Secretary Yoshihide Suga announced that the central government would suspend work on the FRF at Henoko for one month to discuss the relocation plan with Governor Onaga.¹⁶⁰ Those talks ended in a standstill and in October 2015, Onaga revoked permits for offshore construction necessary for construction of the FRF facility. The Ministry of Land, Infrastructure, Transport and Tourism (MLIT) then issued a temporary injunction of Onaga's order and allowed construction at Henoko to resume. In November 2015, the central government filed suit against Onaga demanding that he reinstate the construction permits.¹⁶¹

In 2012, CSIS examined alternatives to the FRF and concluded that the existing plan proved most viable and recommended that the two governments proceed with the construction project at Henoko.¹⁶² Additional research and extensive interviews with stakeholders, senior officials, and military personnel reaffirm that the existing plan offers the greatest prospect for realizing the relocation of Futenma and meeting the three requirements established when realignment was first proposed: maintaining capabilities; maintaining deterrence; and reducing the impact on the local population.

The disadvantages of the other options evaluated in the 2012 study remain, namely the potential for local political opposition, costly military construction, and a further extension of the timeline for a realignment process that already is almost 20 years old. Neither government can be expected to adopt alternatives that would be problematic to implement but irreversible if pursued. If the Henoko plan is not implemented the only viable alternative is for the Marines to continue operating out of MCAS Futenma, and an accident in such a heavily populated area could easily precipitate a crisis in the U.S.-Japan alliance. The operational tempo at Futenma is relatively low after a KC-130 squadron was relocated from Futenma to MCAS Iwakuni in 2014. In addition, the Marine Expeditionary Unit (MEU) air element at Futenma is regularly deployed elsewhere in the region for training. Nonetheless, the best way to minimize risk is to continue with the planned relocation of the facility to a less populated area. In the interim, it will also be important to sustain operational readiness at Futenma by identifying maintenance priorities. At the same time, both U.S. and Japanese forces will require greater access to airfields in the East China Sea region, due to the risks presented by natural disasters and the A2/AD environment. Thus, while no "Plan B" would surpass the current FRF plan in terms of operational and political sustainability, there is utility in continued exploration of options for access to multiple runways and facilities that might be needed to surge operations in a humanitarian crisis and divert forces in other contingencies.

The land return process is also critical to demonstrate progress in the realignment plan and to support Okinawa's economy. The areas designated for return are separated into three categories: areas eligible for immediate return upon completion of necessary procedures, areas eligible for

return once the replacement facilities in Okinawa are provided, and areas eligible for return as USMC forces relocate from Okinawa to locations outside of Japan. The 2013 consolidation plan is open to review every three years and therefore will likely feature in bilateral discussions in spring 2016.¹⁶³ Expedient movements on these efforts will demonstrate concrete evidence of the alliance's commitment to reduce the impact of the U.S. military presence on the local population. On December 4, 2015, Chief Cabinet Secretary Yoshihide Suga and U.S. Ambassador to Japan Caroline Kennedy jointly announced plans to return approximately four hectares of land on the eastern edge of Futenma and three hectares of the Makiminato Service Area in Japan FY 2017.¹⁶⁴ The U.S. military is also continuing to pursue community outreach programs with the people of Okinawa, which are particularly helpful when III MEF training activities for HA/DR are highlighted to demonstrate how the U.S. military is providing public goods throughout the region. Whole-of-government outreach on Okinawa can help to address concerns there and demonstrate the value of the relationship on both sides of the Pacific.

Despite generally healthy public support for U.S. bases in Japan, opposition within Okinawa and aspirations for greater control of bases among ruling politicians all point to the need for a longer-term vision for U.S. presence. It is in U.S. interests for that vision to include greater shared use of U.S. and Japanese bases, recognizing the need for interim steps by Japan to enhance interoperability and security of facilities and information. There was a time in Okinawa when resentment of Japanese forces would have prevented such a vision, but today the JSDF is one of the most respected institutions in Japan in some polls and there would be little adverse political impact from enhanced integration of U.S. and Japanese bases on the island. As Japan shifts GSDF units to Okinawa and trains them for amphibious operations, there would be great utility in co-location with U.S. Marine units.

Capability Gaps and Shortfalls

Japanese defense strategy documents seek to address perceived capability gaps and shortfalls in various areas. The National Defense Program Guidelines highlights the need to develop indigenous capabilities in such critical areas as amphibious operations, C4ISR, BMD, and space and cyber defense. Other longstanding priorities, such as logistical capacity and munitions requirements, also merit continued attention. The Abe government passed information security legislation to facilitate intelligence sharing with the United States. Legislation to implement the Abe cabinet decision on collective self-defense is meant to strengthen interoperability by facilitating information sharing to establish a common operating picture for the JSDF and U.S. military and also improve coordination and expand joint planning for contingencies. The JSDF also places a premium on exercising with the United States and regional partners. Examples include the U.S.-Japan Iron Fist and Dawn Blitz amphibious exercises in California; Japanese participation in the U.S.-Australia Talisman Sabre exercise; Japan-Philippines joint naval training exercises; and Japan's participation in the U.S.-India Malabar exercises in the Indian Ocean in October 2015.

Japan's requirement for new areas of expertise, such as amphibious capabilities, is growing as the challenge in Japan's maritime zones increases. The JGSDF and JMSDF are creating an amphibious force, working with the U.S. Marine Corps. Helping Japan to gain expertise in this area

will improve the alliance's ability to respond to emerging threats. Another area of debate in Japan is the ability to conduct counter-strikes to limit the risk to Japanese forces or populations. For example, some commentators have recommended that Japan develop ground-launched cruise missiles that could hold at risk North Korean missile facilities in case Japan received a pre-emptive warning of an attack. This discussion has taken a back seat to political debates on the exercise of collective self-defense, but will likely reemerge.

Despite these ongoing efforts to address existing capability gaps and capacity shortfalls, a number of mission areas present challenges for Japan and U.S. forces operating from Japanese territory. First, defenses against both nuclear- and conventionally armed missiles remain a concern. The expense of kinetic missile defenses presents a particular challenge given China's growing inventory of highly accurate and relatively inexpensive ballistic and cruise missiles. To defend Japanese bases and forces, as well as those of the United States, Japan may want to cooperate with the United States to develop both cheaper kinetic interceptors and advanced non-kinetic capabilities, such as directed energy and railguns. Many of these systems could also be used in an integrated air and missile defense arrangement, increasing Japan's defenses against a range of airborne threats.

Another capability requirement for Japan relates to space and cyber defense. Potential military challengers could seek to damage Japanese command and control, as well as JSDF and U.S. military ISR and communications platforms. Defending against these potential avenues of attack will require greater defensive capabilities in space and cyberspace, as well as diversification. For example, by utilizing hosted payloads, Japan could help to lessen its vulnerability in space, forcing an attacker to target not only Japanese space assets but foreign-owned platforms as well. By working together with the United States, Japan could substantially expand its cyber and space capabilities to meet these growing threats.

Another area that requires additional attention is command and control arrangements, both within Japan and between Japan and the United States. Although the allies recently agreed to establish an Alliance Coordination Mechanism, it lacks the command and control elements necessary for a rapid combined and joint response to potential crises or conflicts. U.S. Forces Japan (USFJ) plays a vital role, but it would not exercise command and control in a crisis. As a result, there is concern in both Tokyo and Washington that existing command and control arrangements are not sufficient for the type of complex, high-intensity warfare that the allies must be prepared to conduct. To address this requirement, Japan might examine other operational command structures, like Australia's Joint Operations Command. Such a system would separate the command and control functions from the chief of defense functions, which is critical to effective operational responses. U.S. personnel could be integrated into this command, to the degree permitted by legal requirements in both countries, in an effort to improve alliance interoperability.

Finally, a new challenge is emerging in the paramilitary domain. The JMSDF is highly capable, but the Japanese Coast Guard and JMSDF are increasingly finding themselves stressed to meet operational requirements in the East China Sea. The growing number of Chinese patrols will require increased presence from both the JMSDF and Japanese Coast Guard. In addition to building more coast guard vessels, Japan will have to consider ever-larger ships capable of meeting the new

10,000-ton Chinese Coast Guard vessels that can be expected to operate in the East China Sea. Enhancing interoperability and crisis coordination mechanisms among the Japanese Coast Guard, JMSDF, and U.S. Navy will therefore be critical to ensure continued maritime security. Finding the resources necessary to fund these maritime efforts will be difficult if the JGSDF continues to maintain such a large number of personnel. The JGSDF would play a critical role in amphibious operations, but Japan's defense-spending priorities must be recalibrated if it is to field the maritime and air capabilities required to compete with China's rapid military modernization.

Japan has made important strides with respect to jointness among the ground, air, and sea components since the establishment of a new Joint Staff Office, exemplified by the increased number of military personnel donning purple caps in the Ichigaya headquarters. Japan has also in recent years established joint headquarters for counter-piracy in Djibouti and missile defense operations in Japan. However, Japan is still far behind other U.S. allies such as Australia and South Korea in terms of establishing overall joint command and control arrangements for contingencies. The chairman of the Joint Staff Office has the role of chief of defense forces, but Japan has no structure comparable to the Australian Joint Operational Command. While the newly established U.S.-Japan Alliance Coordination Mechanism will allow smoother decisionmaking in a contingency, it does not establish clear command and control relationships between the two militaries for contingencies. There is a growing recognition in the leadership of the Japan Defense Ministry of the need for improved C2 at home and with the United States. However, residual challenges with respect to service culture, constitutional constraints, and budget remain. This area should be a higher priority for bilateral alliance management.

Overall, Japan is pursuing critical defense policy reforms to enhance its own capabilities and strengthen security cooperation with the United States and other partners. These are pragmatic steps in response to a rapidly changing security environment. The emphasis on jointness and interoperability, supported by Japan exercising the right of collective self-defense and promoting defense industrial cooperation, will constitute an important capability in terms of maintaining deterrence. The new guidelines for U.S.-Japan defense cooperation are another important means toward that end. Exercises with other partners, such as Australia and India, will increase the prospects for networking the alliance and forming broad habits of security cooperation in support of regional stability. In 2007, Japan and Australia signed a defense accord for security cooperation in pursuit of democracy, freedom, human rights, and the rule of law. In 2014, this agreement was enhanced by Prime Ministers Abe and Abbott, who signed a defense technology cooperation framework. Indeed, Japan's new national security legislation specifically mentions the potential for cooperation with Australia. Cooperation with India is also expected to grow. In 2008, Japan and India signed a joint declaration on security cooperation, which has reinforced agreements to pursue strategic and global partnership between the two states. Improvement of Japanese-South Korean relations would also prove useful on issues from North Korea to maritime security. The realignment of U.S. forces on Okinawa is critical to ensuring that the U.S. rebalance remains operationally resilient and politically sustainable and both governments are steadfastly committed to that process. Overall Japan's current strategic trajectory suggests it will remain a critical partner in supporting the rebalance as an anchor for regional stability and prosperity.

SOUTH KOREA

The Republic of Korea remains one of the United States' most dependable allies in the Asia-Pacific. For over 65 years, the alliance has successfully deterred a second North Korean invasion, and South Korea has stood with the United States in every major war since World War II, deploying forces to fight in Vietnam, the Persian Gulf, and Afghanistan. The Republic of Korea has sent peacekeeping missions to eight countries (including Lebanon and Haiti).¹⁶⁵ It currently boasts the second-largest Peace Corps volunteer group in the world, smaller only than that of the United States, with which it signed a cooperation memorandum of understanding (MOU) in 2013.¹⁶⁶ South Korea has participated in counter-piracy operations off the coast of Somalia, and it has contributed to the fight against Ebola in West Africa.¹⁶⁷ The Obama and Park administrations have referred to the alliance as being "the best ever."¹⁶⁸ Put simply, the U.S. rebalance is not credible without partners like Seoul.

Nevertheless, there is a continued need for improvement in terms of deterrence and defense on the Korean Peninsula, while the rise of China has placed stress on some of the traditional assumptions in the U.S.-ROK alliance about regional security strategy. The alliance continues to enhance its combined capabilities on the peninsula as the two sides prepare for the eventual transition of wartime operational control (OPCON) from the United States to South Korea.¹⁶⁹ Yet, these preparations still require that the allies address some critical capability gaps and shortfalls. To cope with the growing challenges of a nuclear North Korea, the alliance has created a Tailored Deterrence strategy and a 4D Strategy (Detect, Defend, Disrupt, Destroy) for counter-missile operations, but greater combined and interoperable capabilities for these missions is needed.¹⁷⁰ Off the peninsula, Washington has asked Seoul to play a larger role in support of international norms and rule, which has met with mixed success, particularly vis-à-vis China and Japan.

Security Outlook

For a country pursuing increasingly global national capabilities, the Republic of Korea's security outlook is generally parochial. It is the twelfth-largest economy in the world, hosted the global Nuclear Security Summit in 2012 and the G20 Leaders' Summit in 2010, is home to world-class companies with household names, is a major player on climate change, and will host the Winter Olympics in 2018.¹⁷¹ Yet, despite this global image, South Korea's national priorities focus almost exclusively on North Korea and economic growth.

President Park came into power at a time when the body politic was accustomed to pre-2008 growth rates of 5 to 6 percent. With growth estimates plummeting to sub-3 percent after the Middle East respiratory syndrome (MERS) outbreak, Park's mandate is to spur a turnaround. This is Park's last year to implement any new economic policy initiatives given her single five-year term.¹⁷²

The preoccupation with North Korea is not without reason. North Korean threats are not only real, but they increasingly include nuclear, ballistic missile, and cyber threats, in addition to conventional capabilities and the ever-present danger of regime instability. For this reason, ROK politicians, opinion leaders, and the business community view almost all foreign policy issues through the prism of North Korea (i.e., promoting engagement or enhancing containment of the

threat) and through the lens of unification. If a regional issue is not deemed relevant to these concerns, then Koreans tend to discount its importance—a calculation not always in the country's best interests.

South Korean focus on improving relations with China are partially the result of Seoul's effort to address North Korea. The Park government has placed paramount value on deepening strategic ties with Beijing, including numerous summit meetings, establishing a NSC-to-NSC dialogue, concluding a free trade agreement (FTA) in 2015, and joining the AIIB in 2015.¹⁷³ At the same time, Seoul has devalued relations with Japan, permitting a currency swap agreement to expire in February 2015, avoiding summit meetings, and allowing historical issues to paralyze relations.¹⁷⁴ The primary driver for these actions is Seoul's desire to deepen the estrangement between North Korea and its neighbors, particularly China. Kim Jong-un has yet to meet with the Chinese leader, and since the execution of Jang Song-thaek in December 2013, China's level of consternation with Pyongyang has been palpable. Thus, the Park government has focused on convincing China that its future on the peninsula lies with the South. Yet, these trends give the impression that the U.S. rebalance may have a weak link, as South Korea appears to be gravitating into the Chinese orbit and away from the traditional U.S.-Japan-ROK trilateral arrangement.

There is little chance that such a trend could culminate in the abrogation of the U.S.-ROK alliance under current conditions. The political center of gravity in Seoul remains solidly pro-alliance, and polling of strategic elites consistently finds that a majority of Koreans is uncomfortable with Chinese hegemony in Asia and strongly favor continued U.S. leadership.¹⁷⁵ Moreover, this appears to be a long-term trend as younger generations of Koreans hold markedly positive views of the United States. Recent polls show, for example, that almost 8 out of 10 Koreans in their twenties and 7 out of 10 in their thirties believe the United States is a more capable global leader than China.¹⁷⁶ Despite the large number of young South Koreans who flock to China for language study and tourism, 75 percent of those in their twenties still prefer English over Chinese (which is preferred by 20 percent) as their foreign language of choice. This data suggests South Korean ties to the United States are strong and are likely to endure even if unification were to occur.

Nevertheless, South Korea's unique regional security outlook affects U.S. strategy and force posture. The December 2014 U.S.-Japan-ROK Trilateral Information Sharing Arrangement has created opportunities for further cooperation on maritime security, counter-piracy operations, missile defense, and information sharing.¹⁷⁷ As a follow-up to discussions during the May 2015 Shangri-La Dialogue, the United States, Japan, and the Republic of Korea are in the process of scheduling an exercise to enhance their ability to share classified information regarding North Korean weapons of mass destruction. Efforts to enhance information sharing continue to encounter challenges, and one official involved with the issue characterized the current agreement as covering about 50 percent of what was covered in the failed 2012 General Security of Military Information Agreement (GSOMIA) agreement. Full implementation of the current agreement will be challenging and progress in sharing real-time information regarding North Korean WMD threats is likely to remain suboptimal. The fact that South Korea continues to drag its feet on implementation with Japan despite its having similar information-sharing agreements with 24 other countries speaks to the role that historical animosities can play in complicating the U.S.

rebalance.¹⁷⁸ Recent Japanese and Korean efforts to jointly address these historical differences are welcome and important.

This problem is also evident regarding U.S. capacity to counter Chinese actions in the South China Sea. Aside from recent token statements about freedom of navigation, Seoul has been hesitant to stand publicly with the United States in building the capacity of smaller countries in response to Beijing's land-reclamation activities on disputed features. Seoul's equities remain parochially focused on gaining China's favor on North Korea, while looking askance at other Chinese activities. Nevertheless, South Korea sees threats to freedom of navigation in the South China Sea as detrimental to its own longer-term interests, and would welcome diplomatic strategies to shape Beijing's actions in more positive directions.

Despite the understandably parochial trend in South Korea's security outlook, it has taken steps to undertake off-peninsula operations in ways that contribute to regional peace and security. Most notably, South Korea deployed a military contingent to the Philippines to support recovery and relief efforts following typhoon Yolanda/Haiyan. The ROK deployment was transparent and open in its engagements in the Philippines, and its troops were the last of the foreign-contributed troops to depart the Philippines. Further ROK participation in regional HA/DR efforts contributes to regional capabilities and should be supported.

Current and Planned Force Posture

The Republic of Korea military revolves heavily around an army-centric, ground-based paradigm. The ROK Army consists of 495,000 troops, 2,400 tanks, 2,600 armored vehicles, 5,800 field artillery pieces and multiple-launch rocket systems, and 60 guided weapon systems.¹⁷⁹ The ROK Army special warfare command has 10,000 soldiers trained in rear-area activities, terminal guidance operations, and can play roles in counterterrorism and peacekeeping operations.¹⁸⁰ The ROK Navy maintains approximately 70,000 sailors and marines, 10 submarines, 110 surface combatants, 10 auxiliary vessels, and 30 anti-mine and support vessels. The ROK Air Force fields 65,000 airmen, 400 combat aircraft, 60 ISR aircraft, 50 air mobility aircraft, and 160 trainers.¹⁸¹

The most prominent element of future force posture plans is a consolidation of the army, bringing the numbers by 2022 to 387,000 troops while holding other branches constant.¹⁸² South Korea faces significant demographic challenges in meeting manpower targets without integrating women into its ranks (for which there appears to be no interest on part of the government). The heavy reliance on reserves (numbering 2.9 million) highlights the need for an NCO corps.¹⁸³ ROK defense reforms target an officer to NCO ratio of 40 percent, but budgetary constraints make this a high bar.

Regarding future modernization, the government has committed to a 7 percent increase in the 2016–2020 ROK defense budget.¹⁸⁴ The ROK Army plans to acquire unmanned aerial vehicles, K2 tanks, multiple launch rocket systems (MLRS), and will take delivery of 36 Apache helicopters beginning in 2016.¹⁸⁵ The ROK Air Force is procuring indigenous F-X III fighters and aerial refueling tankers. Seoul will enhance deep-strike capabilities with initial deliveries of F-35 fighters in 2018.¹⁸⁶ The ROK Air Force has also budgeted and signed contracts for Global Hawk (with

delivery starting 2017); it purchased two Green Pine radars from Israel; and it has budgeted for acquisition of two satellites in 2015. ROK Navy plans include next-generation submarines, Aegis-equipped destroyers, and maritime patrol craft. Regarding missile defense, South Korea has committed to purchase PAC-3 upgrades by 2018, in addition to Standard Missile 2 (SM-2) and SM-6 upgrades. Following the 2012 New Missile Guidelines agreement, Seoul is developing indigenous ballistic missile defenses for deployment in 2017, all as part of its Kill Chain strategy and Korean Air and Missile Defense (KAMD) system.¹⁸⁷ These capabilities will improve ROK defenses, as well as its interoperability with U.S. forces.

FIGURE 11: South Korean Force Posture



Security Cooperation with the United States

The United States maintains approximately 30,000 troops in Korea (roughly 20,500 U.S. Army, 300 U.S. Navy, 100 U.S. Marine Corps, and 8,100 U.S. Air Force personnel).¹⁸⁸ In wartime, U.S. augmentation forces would likely flow many more troops, vessels, and aircraft to the defense of the peninsula. Command of these forces, and those of South Korea and the United Nations, is complex given the many different actors involved. The United States and South Korea are working to prepare for the transition of wartime operational command from the United States to the Republic of Korea. Unlike the previous two OPCON transition plans, the current plan lacks a target date, instead focusing on satisfying the necessary readiness requirements and threat conditions for both sides to feel comfortable with the transfer.¹⁸⁹

The lack of a specific date for OPCON transition has created some political backlash on the Korean side, reflected largely in ROK desires to push the timeline on leading and designing combined military exercises. Combined Forces Command and the ROK Joint Chiefs of Staff are considering how and when to shift leadership of major theater exercises, with the potential for the ROK military to lead elements of Key Resolve in 2017. However, participants admit to a cultural gap in understanding the utility of exercises. The United States military sees exercising as a heuristic device in which failure provides an opportunity to learn and to improve, while the ROK military views exercises more as finished products, where choreographing success is paramount, even at the expense of learning. Closing this gap in understanding is important for the transition to South Korea as the combat lead and the United States in a supporting role on the peninsula. Nevertheless, both sides remain confident that OPCON transition will not impair combat readiness and will not diminish either side's commitment to the alliance.

Recent innovations have enhanced alliance capabilities and will help to create the conditions required for OPCON transfer. These include the creation of the first U.S.-ROK Combined Division with the 2nd Infantry Division (ID) as the core.¹⁹⁰ In July 2014, U.S. and ROK forces (the 2nd ID and the ROK Third Army) trained together for the first time at the National Training Center in Fort Irwin, California, where they focused on WMD elimination.¹⁹¹ In 2013, the United States began preparations for rotational U.S. Army deployments to South Korea—that is, forces periodically deployed from the United States and not permanently stationed forward. The first brigade-sized unit arrived in June 2015 at Camp Casey (the 2nd Armored Brigade Combat Team of the 1st Cavalry Division from Fort Hood).¹⁹² Initial Korean trepidation about these deployments appears to have dissipated with the appreciation that these nine-month rotations bring a more combat-capable and cohesive unit to the peninsula that is fully trained and ready to fight. U.S. participants describe the rotational deployments as “good and getting better.”¹⁹³ Nevertheless, there remains concern among some military leaders in both the United States and South Korea that rotational deployments could harm combat effectiveness, particularly for newly arriving units. Examining the experiences of forces rotating through Iraq and Afghanistan could help to address these downsides of the rotational arrangements. There has been some effort on the Korean side (at the deputy minister level) to influence the timing and nature of the deployments, but rotational brigades are best removed from domestic-political considerations in Korea.

While the alliance modernizes to meet evolving threats, the Republic of Korea continues to increase its contributions to the alliance under the Special Measures Agreement. Under the most recent agreement, concluded in January 2014, Seoul will pay about 45 percent of the costs of stationing U.S. forces on the peninsula. South Korea contributes about 2.5 percent of its GDP to defense, which is more than most allies. Moreover, Seoul has increased defense spending for the past seven years with average annual increases of around 4 percent.¹⁹⁴ Thus, South Korea is bearing a substantial portion of the cost of maintaining U.S. forces on the peninsula, to include the relocation of U.S. forces on the peninsula under the Yongsan Relocation Plan.

Capability Gaps and Shortfalls

Despite this progress, the alliance must improve several critical capability areas to ensure continued readiness to respond to North Korea. The Republic of Korea's acquisition of critical capabilities is a key factor in achieving a capabilities-based OPCON transition. Correspondingly, although Seoul continues to raise its defense budget at a time when most U.S. allies are cutting their budgets, the size of South Korean defense budget increases has not matched the size of the requested increases. The South Korean administration usually requests yearly increases on the order of 7 percent, but typically secures less than a 4 percent increase. Continued spending will be necessary to address important areas of focus, which include ISR, BMD, and critical munitions.

In terms of bilateral interoperability—specifically in command, control, communications, computers, and intelligence—progress is slower than desired by CFC. Interoperability remains an important requirement for maintaining and evolving U.S.-ROK alliance combined capabilities to meet the North Korea threat. Yet, bilateral interoperability has lagged in some areas, such as Link 16. Furthermore, the operational implementation of the Trilateral Information Sharing Agreement requires additional progress. All three parties will need to first complete the requisite work to establish bilateral data exchange agreements, and then expand to trilateral efforts that will enhance the ability of the United States, Republic of Korea, and Japan to address North Korean WMD and missile threats. Cooperation between South Korea and other regional partners, such as Japan, Taiwan, Australia, and others, can help the U.S.-South Korea alliance to expand its current focus from the Korean Peninsula to broader regional security concerns.

In terms of missile defense, Seoul is pursuing Korean Air and Missile Defense and a 4D strategy (to detect, defend, disrupt, and destroy incoming missiles), but still abstains from fully integrating with the U.S.-based system in the region. South Korea will start receiving PAC-3 upgrades in 2017, but existing arrangements are not optimal for the mission. Acquisition plans do not prioritize training, maintenance, or spare parts for these systems. U.S. complaints reflect frustration at a lack of transparent consultations by South Korea, and the lack of doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) internalization by the ROK military. Chinese demarches have made the potential U.S. deployment of Terminal High Altitude Area Defense (THAAD) on the Korean Peninsula a sensitive issue for Seoul, despite the fact that South Korea has no area defense capabilities against North Korean ballistic missiles. The ROK military has expressed interest in developing an indigenous THAAD-like system, but U.S. experience with these types of systems suggests a multi-decade effort would be required to develop

and deploy such a missile defense system. Given the growing missile threat from North Korea, THAAD provides a valuable capability.

Munitions shortfalls also remain a concern for South Korea. Seoul remains fixated on acquiring finished items—usually high-profile weapons systems—without the budget or training to integrate the system into existing combined capabilities. Regarding strike capabilities, for example, Seoul is committed to F-35 deliveries in 2018, but has delayed an acquisition plan for precision guided munitions (PGMs), and does not appear to have budgeted adequately for it.¹⁹⁵ Similarly, the counter-fire mission is vital to defend Seoul and areas north against North Korean artillery attacks. South Korea prefers to use conventional high-explosive rounds, but is moving toward acquiring PGMs that the United States considers critical. It is essential to have sufficient stocks of such munitions on hand and the alliance continues to work to ensure its munitions stocks are sufficient in quantity and quality.

Similarly, Seoul would do well to prioritize certain critical capabilities, such as Joint Terminal Attack Controllers (JTACs), the South Korean command and control system (KJIX), and Link 16. Through these efforts, the United States and South Korea are working to enhance warfighting capabilities. Joint Tactical Air Controllers are vital to effective use of precision munitions. KJIX is still in development, and therefore is not integrated with the U.S.-managed Centrix system. Lack of South Korean budget appropriations continues to delay certification to put Link 16 in place, which is critical to enabling seamless communication between the United States and South Korea. These types of capability gaps could be closed if Seoul were motivated to prioritize these efforts and appropriately committed funds to them. The combination of budget constraints, Seoul's preference for developing indigenous national capabilities, and an obsession with high-profile end products over more mundane but important capabilities, however, underscores shortfalls in key areas including ISR, missile defense, and munitions. In the end, forward-looking decisions would enhance U.S.-ROK interoperability and alliance capabilities.

AUSTRALIA

Australians have fought alongside the United States in every major conflict since World War I. Over the last 14 years, Australian forces have played critical roles in coalition operations in the Middle East; today, Australia is one of the largest contributors to the military coalition against ISIL. As the United States rebalances to the Asia-Pacific and redistributes its military presence, Australia's value as a political ally and military partner—combined with its geographic location—are reinforcing its strategic importance to the United States. While the alliance is strong and growing increasingly central to U.S. regional policy, Washington and Canberra will have to manage occasional pressures in the relationship, particularly over how best to work together to shape China's rise.

Security Outlook

Australia's primary national security concerns include relations with China and Indonesia, terrorism, and fragility and instability in the South Pacific. Government documents and public

polling constantly point to these as among Australia's most acute security challenges, although the types of challenge they pose differ substantially.¹⁹⁶ China is Australia's top trading partner and resources market, but Beijing's coercive activities are a major concern to Australian policymakers, as they are in Washington. Many current Australian policymakers hold similar views on China to their U.S. counterparts, worrying about how to shape China's behavior so that Beijing's activities support rather than undermine international rules and norms. Since the Scarborough Shoal incident in 2012, which ultimately resulted in China's seizure of the reef, many Australian policymakers have grown increasingly worried about Chinese coercion in maritime disputes and the growing potency of China's A2/AD capabilities.¹⁹⁷ These concerns have been strengthened by recent PLA Navy transits of waters immediately to Australia's north.

Some Australian national security leaders, including many in government, have called for a more concerted effort to uphold rules and norms vital to regional security and prosperity. Australian Department of Defence Secretary Dennis Richardson recently expressed concern at "the unprecedented pace and scale of China's land-reclamation activities in the South China Sea over the last couple of years."¹⁹⁸ Similarly, Foreign Minister Julie Bishop has said China's 2013 declaration of an Air Defense Identification Zone (ADIZ) in the East China Sea convinced Canberra "to make it clear where we stood on unilateral action that could be seen as coercive and could be seen to—and which did—affect our national interests."¹⁹⁹ Australia expressed public support for the U.S. Navy's recent South China Sea freedom of navigation operation. Meanwhile, discussions about leasing 80 percent of the port of Darwin to a Chinese company have highlighted the tensions inherent in simultaneously forging a closer security alliance with the United States and growing economic ties with China.

As in any democracy, there are other voices too, with former leaders like the late Malcolm Fraser and security experts like Hugh White advocating that Australia would be better off pursuing a more "independent" policy rather than hewing so closely to the United States.²⁰⁰ The Australian business community is more sanguine about China, owing largely to its reliance on Chinese resources markets to drive growth in the Australian economy. It was presumably with this in mind that then-Prime Minister Tony Abbott reportedly summed up that when it comes to China, Australians are motivated by the conflicting emotions of "fear and greed."²⁰¹ The Australian public is strongly pro-American and pro-alliance, but its views on China are a mix of the business community and strategic community. In public polls, Australians are somewhat more positive toward China than the expert community, with respondents giving China a 60 out of 100 favorability rating (the United States received a 71).²⁰² Only 30 percent of Australians see China as a military threat, and 77 percent say that China is more of an economic partner than a security threat.²⁰³ There has been speculation that Malcolm Turnbull—who had close business ties with China before entering politics—might align more closely with the views of Australia's business community, seeking to manage the U.S.-Australia alliance without damaging relations with China. It is still early, but Turnbull's public comments suggest a continuing commitment to uphold international rules and norms, including in the South China Sea, even at the price of some friction in Australia's relations with China.

Although China remains a major foreign policy preoccupation for Australia, near neighbor Indonesia is a more immediate consideration. Bilateral trade and education ties are growing, and Canberra has been a major provider of development assistance to Indonesia. But the two coun-

tries are very different and the bilateral political relationship has often endured periods of stress and strain. Australia's response to people smuggling and Indonesia's application of the death penalty in recent drug-trafficking cases involving Australian citizens continue to cause some tension, and a strong strain of Indonesian opinion is suspicious that Australia seeks to undermine Indonesia's hard-won sovereignty and national integrity.²⁰⁴ In polling, 87 percent of Australians express the view that Indonesia should do more to combat people smuggling, with 85 percent also suggesting that "Indonesia should do more to combat the risk of Islamic terrorism."²⁰⁵ For their part, Indonesian leaders point to allegations of Australian spying connected to the unauthorized disclosure of U.S. government data as a reason for mistrust.²⁰⁶ Despite these tensions, Australia and Indonesia continue to work together in important areas, such as counterterrorism, transnational crime, and intelligence sharing.²⁰⁷

Finally, in recent years Australian policymakers and Australians more generally have grown increasingly concerned about terrorism. In a 2015 poll, Australians ranked terrorism as the top threat to Australia, expressing concern about ISIL, attacks on Australians overseas, and home-grown terrorism in Australia itself.²⁰⁸ Australia has raised its national terrorism threat level to high and since 2014 it has experienced three separate terrorist incidents and multiple disrupted attacks. Foreign Minister Julie Bishop went so far as to call terrorism "the most significant threat to global rules-based order to emerge the past 70 years."²⁰⁹ Well over 100 Australians are fighting for ISIL or other terrorist groups in the Middle East.²¹⁰ Concern over terrorism has made Australia a key coalition contributor in efforts to disrupt ISIL and in support of Iraqi security forces. The Australian Defence Force (ADF) has operated at a high tempo almost continuously since the multinational intervention in Timor-Leste in 1999.

Current and Planned Force Posture

Australia's 2013 White Paper laid down four principal tasks for the ADF: 1) to deter and defeat armed attacks on Australia; 2) to contribute to stability and security in the South Pacific and Timor-Leste; 3) to contribute to military contingencies in the Indo-Pacific region, with priority given to South-east Asia; and 4) to contribute to military contingencies in support of global security.²¹¹ To accomplish these missions, over 50,000 army, navy, and air force personnel serve in the active force.

The Australian Army numbers roughly 29,000 and under Plan BEERSHEEBA is being restructured around three multirole combat brigades, supported by three enabling brigades to provide combat support and ISR, aviation support, and combat services, respectively.²¹² An Amphibious Ready Element is being developed that, along with the two large *Canberra*-class amphibious assault ships to enter service shortly, will constitute a new Australian amphibious capability. A major acquisition project will see the army's aging M113 and Australian Light Armored Vehicles replaced over coming years. The army also retains M1A1 main battle tanks and over 100 attack, utility, transport, and scout helicopters.²¹³ The ADF's Special Operations Command, which includes the Special Air Service Regiment as well as Commandos, is also highly capable.

The Royal Australian Navy (RAN) has over 22,000 permanent and reserve personnel and 53 commissioned vessels.²¹⁴ It is undergoing a period of profound, and sometimes painful, transformation as its *Collins*-class conventional submarines and much of the surface fleet approach

obsolescence. Over the next 20 years, the Australian government will spend over 89 billion Australian dollars on eight or more replacement submarines, nine future frigates, and numerous offshore patrol vessels. The two *Canberra*-class vessels will be able to land up to 1,000 personnel.²¹⁵ These vessels will eventually be able to operate jointly in task forces with other surface ships and submarines, but the ADF expects that several years of exercising will be required before Australia develops a genuine amphibious capability. The RAN's current eight ANZAC-class frigates have been developed into capable multirole workhorses and are currently being upgraded with phased array radar and Evolved Sea Sparrow air defense missiles.²¹⁶ Construction of the future frigates to replace them—optimized for antisubmarine warfare—will begin in Australia within five years, once a model is selected from several European designs.²¹⁷ Four aging Adelaide-class frigates (based on the U.S. FFG) will be replaced by three Australian-built Hobart-class air warfare destroyers equipped with the Aegis combat system and based on a Spanish frigate design; this project has been beset by significant delays and cost overruns, however.²¹⁸ Two new fleet replenishment vessels will be constructed offshore, while the Collins-class submarine fleet will be replaced by eight or more new submarines that will be developed with an international partner depending on the selection of a Japanese, German, or French-based design.²¹⁹ The current patrol boat fleet will be replaced with larger and more capable offshore patrol vessels to be constructed in Australia. The RAN also operates patrol boats, minehunters, survey ships, landing ships, minesweepers, and support vessels, as well as helicopter squadrons and a fixed-wing Laser Airborne Depth Sounder (LADS) aircraft.²²⁰

The Royal Australian Air Force (RAAF) is relatively small, with just over 14,000 personnel.²²¹ Yet, the RAAF is highly sophisticated and capable, as demonstrated recently by its ability to deploy an air task group of combat, ISR, and refueling aircraft to the Middle East and support them without U.S. or other assistance. As a deliberate policy of successive Australian government to maximize interoperability, the RAAF's weapons systems are almost exclusively of U.S. origin. Australia has five combat squadrons of F/A-18 Hornet and Super Hornet fighter aircraft. They will soon be augmented by a squadron of EA-18G Growler electronic warfare aircraft—making Australia the only country in the world besides the United States to operate them.²²² Canberra will also acquire 72 F-35 Joint Strike Fighters.²²³ Six highly capable E-7A Wedgetail airborne early warning and control aircraft have boosted the RAAF's ISR capabilities; its aging AP-3C maritime surveillance aircraft will be replaced by a combination of P-8A Poseidon and MQ-4C Triton manned and unmanned platforms. Within the next two years, Australia's existing fleet of six C-17A Globemaster strategic lift aircraft will grow to eight, augmenting its C-130J air mobility aircraft and KC-30A multirole tankers.²²⁴

Australian forces are often deployed around the globe, but within Australia, they rely on a relatively small number of critical operating locations (see Figure 13). The RAN is largely based in the south for reasons owing largely to history, proximity to major centers of population and industry, and challenges posed by severe tides in far northern Australia. Fleet Base West is at Her Majesty's Australian Ship (HMAS) Stirling, near Perth on the Indian Ocean, and supports surface vessel and submarine operations; Fleet Base East is located in Sydney. HMAS Cairns and HMAS Coonawarra provide operating locations in the north, primarily for patrol boats and other smaller vessels. The RAAF runs a number of established bases, and bare bases for expeditionary operations, around

Australia. Most major support hubs are located in the south, but northern bases include RAAF Darwin, RAAF Learmonth, RAAF Curtin, RAAF Tindal, and RAAF Scherger. Large and increasingly sophisticated training ranges are located throughout Australia, which is a major attraction for foreign partners, such as Singapore, who lack training areas and bombing ranges. The Jindalee Over the Horizon Radar system makes a valuable contribution to awareness of Australia's maritime approaches. In addition, space surveillance capabilities at the Joint Defence Facility Pine Gap, near Alice Springs, serve a critical role not only for Australia but also for the United States. Finally, Australian forces also have access to Cocos and Christmas Islands in the Indian Ocean as well as Royal Malaysian Air Force (RMAF) Butterworth in Malaysia.

Security Cooperation with the United States

The United States remains Australia's most important ally and U.S. engagement is central to Australia's regional and global strategy. There is substantial support within Canberra's policymaking community for continued and even expanded cooperation with the United States, as well as regional partners that share similar interests.²²⁵ Australian efforts to encourage and enable the U.S. rebalance have been substantial, including the hosting of rotational deployments of USMC forces in Darwin.

Strategic elites are generally supportive of the United States and public polling shows that at least 80 percent of Australians view the alliance with the United States as very or fairly important for protecting Australia's security.²²⁶ This level of support has been largely consistent over time. In addition, trust has been rising that the United States will come to Australia's defense if needed.²²⁷ Nevertheless, Australians remain worried about U.S. implementation of the rebalance and its durability. Australian ambassador to the United States and former Labor Party leader, Kim Beazley, has publicly expressed concern that senior U.S. policymakers are "preoccupied" with other issues.²²⁸ As discussed above, differences of opinion over China exist within and among Australian strategic elites and the business community. Developing parallel approaches for managing China's rise will be necessary if Washington and Canberra are to coordinate their strategies for the increasingly complex Asia-Pacific region.

Security partnerships with other states and in multilateral forums are vital to a strong U.S.-Australia alliance. The Trilateral Strategic Dialogue with Japan has been valuable for enhancing cooperation among the three states and has supported the evolution of Japan's security policy. Additional dialogues with India, South Korea, Indonesia, and others would help to broaden the strategic debates and build consensus around the region. Multilaterally, the East Asia Summit is also important for both allies, as an opportunity to shape the behavior of regional states and coordinate approaches to achieve shared objectives. As Secretary of the Department of Foreign Affairs and Trade Peter Varghese commented in August 2015, "Australian interests are best served by a stable strategic system in Asia which favours open societies, encourages economic integration, is inclusive in membership and looks outward. . . . [Australia can] work on building institutions and norms in the region which can help manage strategic tensions and which can act as an anchor at a time of transition in the region."²²⁹

From a U.S. perspective, Australia has served critical military roles in recent years. First, Australian forces have served alongside U.S. forces in the Middle East, helping to address the threat of terrorism. Second, Australia plays an increasingly important role within the Indo-Pacific region, par-

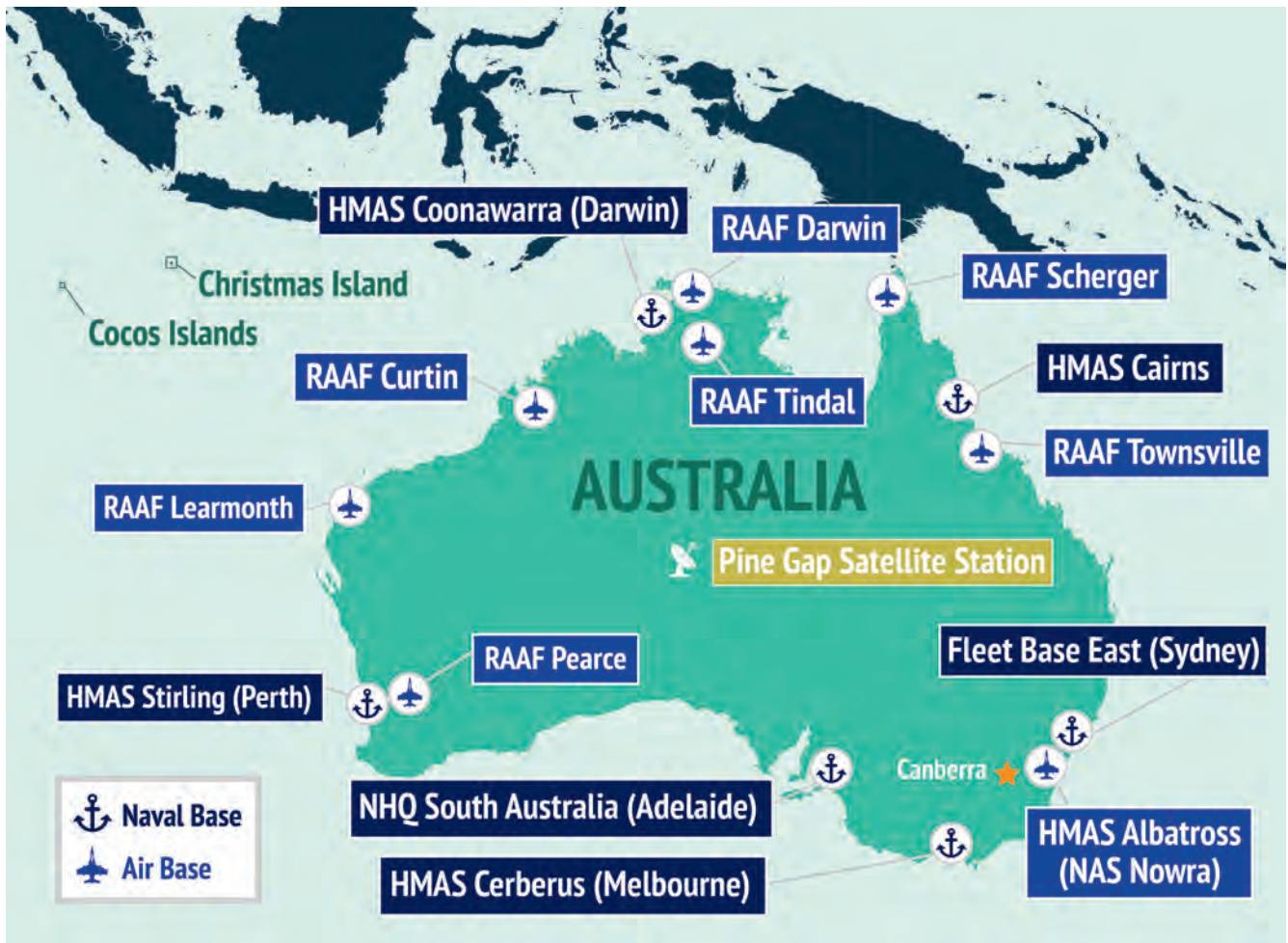
ticularly helping to address maritime challenges. Finally, Australia could serve as a sanctuary for U.S. forces in the event of conflict, one that is distant enough from most conflict zones to protect U.S. assets, but still close enough to allow rapid deployments to critical theaters. Although Australia's contributions in the Middle East have been critical to U.S. efforts there, Canberra's assistance is increasingly required in the Asia-Pacific region itself.

Within the Asia-Pacific, Washington is particularly interested in two Australian capabilities: maritime assets and diversification of U.S. posture.²³⁰ Australia's surface and subsurface fleets and other ISR assets are vital to monitoring the congested and contested waters in the Indian Ocean, Southeast Asia, and the South Pacific. Along with New Zealand, Australia helps to expand the maritime security capabilities of allies and partners throughout Southeast Asia and the Pacific. South Pacific development and capacity building are vital to effective governance in the small Pacific island nations, and Australia plays a critical role as a stakeholder in and caretaker of stability throughout the region. These security cooperation ties are likely to be tested if maritime tensions continue to grow around disputed claims, particularly in the South China Sea, and as China's influence in the South Pacific continues to grow. As maritime security challenges in the Asia-Pacific intensify, the U.S.-Australia alliance is likely to have more of a regional focus than it has in recent decades and a stronger emphasis on cooperation in the maritime realm. To help manage shared challenges, the United States will increasingly rely on Australia for some critical capabilities.

Geographically, Australia links the Pacific with the increasingly important Indian Ocean. Australia's remoteness, while sometimes a complication, also makes it a potential sanctuary in a crisis or conflict—a role it played in World War II after the fall of the Philippines. As a result, U.S. and Australian officials are working together to develop additional access options for U.S. forces, as well as training and exercise locations. While the most visible example of U.S. rotational forces in Australia is the presence of U.S. Marines in Darwin, this has yet to reach its full scale and is just a first step. With some investment in additional infrastructure, Darwin could serve as a hub for training with other amphibious forces, thereby increasing jointness and interoperability with allies and partners. Interoperability of this sort would be critical in HA/DR operations, as well as higher intensity regional crises. Less progress has been made in implementing the USAF component of the U.S.-Australia Force Posture Initiatives announced in 2011, which require additional infrastructure at some of Australia's northern airbases such as RAAF Tindal so they can support larger U.S. aircraft. The United States might also seek to use Australian naval bases for submarine deployments or surface ships. HMAS Stirling, for example, has room for expansion and offers blue-water access into the Indian Ocean, as well as a training area.

Taking the U.S.-Australia Force Posture Initiatives beyond the current rotation of 1,350 Marines is important for both nations and for the credibility of the U.S. rebalance, but it will require agreement on what additional infrastructure is needed and who will fund it. Many of the initiatives described would require additional resources, particularly an enhanced USN presence in Australia. The legal framework is in place, but discussions over cost-sharing arrangements between the capitals have been difficult, and progress has therefore been slow. Nevertheless, shared interests and longstanding cooperation suggest these obstacles can be overcome. Indeed, the fact that defense budgets are tight in both Washington and Canberra underscores the importance of the two allies relying more on each other to meet shared challenges.

FIGURE 12: Australian Air and Naval Bases and Operating Locations



Capability Gaps and Shortfalls

With a limited population occupying a vast land territory and responsible for one of the world’s largest marine areas, Australia’s defense policy has long rested on maintaining strong alliances, a regional capability edge, and the acquisition of sophisticated (and costly) weapons systems. Australia enjoys more strategic depth than many regional nations such as Japan, the Philippines, South Korea, and Vietnam. Yet Australian defense planners are acutely aware that this advantage is being eroded by regional military modernization and increasing strategic competition, and that maintaining Australia’s capability edge is becoming more difficult and costly. They are also mindful of the substantial breadth of Australian military missions within the Indo-Pacific and beyond, leading to concerns about several existing gaps in the ADF’s capabilities and capacity, and the risk of potentially significant gaps in maritime capability, in particular. Recognizing these pressures, the current Australian government has committed to a defense-spending floor of 2 percent of GDP, although this is an ambitious target.²³¹ Scheduled for release in early 2016, the Defence White Paper is expected to address concerns about Australian capabilities and capacity, and set forth a sustainable path for the future defense force.²³²

For over a decade, much of the ADF's operational focus has been in the Middle East, but Australia's increasingly contested maritime domain means maritime capabilities have been a growing preoccupation. Three new Aegis-equipped Air Warfare Destroyers are under construction, and planning is underway to replace the aging *Collins*-class conventional submarine fleet, as well as the navy's frigates and patrol boats. Air assets such as Australia's Wedgetail aircraft, a growing fleet of KC-30A tankers, MQ-4C Triton unmanned aerial vehicles, and Joint Strike Fighters will give the RAAF a long-range counter-air and counter-surface capability. The White Paper is also expected to focus on enhancements to C4ISR, cyber security, and other enabling capabilities, including basing infrastructure.

Despite Australia's clear need for greater maritime capabilities, concerns remain about affordability, particularly in light of domestic political pressure to build naval ships and submarines in Australia. The expense of advanced submarines and fighter aircraft in particular puts a strain on the Australian defense budget, despite recent funding increases. If cost estimates rise, the government may face additional hard choices between needed capabilities and capacity.²³³ Further delays in decisionmaking on submarines and frigates risk future gaps in these vital capabilities, as would any delays in construction (which have affected the Air Warfare Destroyer program). Australia can rely on the United States to come to its aid in a crisis and provide for some critical capabilities, but U.S. capacity may be limited in the event of a severe contingency involving China. High-demand, low-density (HDL) assets, such as aerial refueling tankers, will help to give Australia a greater ability to operate on its own, or to provide niche capabilities should they be required during a crisis or conflict (both of which it has recently demonstrated in the Middle East). To help the United States operate effectively in a crisis, Canberra will have to work with Washington to expand the capacity of northern Australian bases, including its network of bare bases. Ensuring that logistical needs can be met for critical supplies, such as petroleum, oils, and lubricants, will be vital to expanding not only the U.S. military's operational effectiveness, but the ADF's as well.

As Australia's own influence expands and Australia's geopolitical position becomes more central to U.S. strategy, Washington's expectations of Canberra are growing. Although the Australian strategic debate is still evolving, there is no question that Australia's national security challenges require close coordination with the United States as well as other allies and partners. Enhancing Australia's own maritime security capabilities, as well as ensuring that the United States can operate effectively from Australian territory in a crisis, are likely to remain top priorities for Canberra.

PHILIPPINES

The Philippine military is at the beginning of a long-term shift from a focus on internal security to external defense. This entails not only a transition away from fighting insurgents in the southern Philippines and communist rebels throughout the country, but also a rebalancing of forces toward the long-neglected navy, air force, and coast guard. The impetus for this transition has been rising tensions in the South China Sea, where Beijing's assertiveness has forced a rethink in Philippine priorities. The Philippines' ability to stand up to Chinese coercion is of particular concern to the United States given the U.S. commitment to protect Philippine territory, troops, ships, and aircraft in the Pacific under the two nations' mutual defense treaty.²³⁴

Despite the recognition of its changing priorities, the Philippine military suffers from decades of underfunding and poor management. It is not, and will not for the foreseeable future, be capable of fulfilling the goals set out by leaders in Manila without considerable assistance from external partners, particularly the United States. To this end, the two treaty allies concluded an Enhanced Defense Cooperation Agreement in early 2014 that, if it is approved by the Philippine Supreme Court, would allow a larger U.S. military footprint in the country and open desperately needed avenues for greater training for Philippine forces and funding for Philippine military infrastructure.²³⁵ The trend in the U.S.-Philippine alliance is toward closer cooperation and greater capability, but as with many other partners in Southeast Asia, observers should not assume a straight-line trajectory given upcoming elections and the political hurdles likely to occur in the years ahead.

Security Outlook

The South China Sea has emerged as the Philippines' top security concern in recent years. Leaders in Manila began to recognize the potential threat of escalation over South China Sea disputes in 1995 when China occupied Mischief Reef, which was claimed by the Philippines as well as Vietnam and Taiwan. The seizure of Scarborough Shoal from the Philippines by China Marine Surveillance forces in June 2012 has increased Manila's concern about Beijing's intentions. Philippine leaders are convinced that China intends to force other states' militaries and law-enforcement agencies out of the nine-dashed line in order to establish uncontested control over all the resources—fisheries and hydrocarbons—within the disputed area. This includes the Spratly Islands, nine of which (counting the entirely submerged Second Thomas Shoal) are occupied by Filipino forces.

Being cut off from offshore resources would constitute a risk to vital Philippine interests. The lack of access to traditional fishing grounds in the South China Sea, especially around Scarborough Shoal, has already damaged fishing communities on Palawan and Luzon. These communities are further affected by the growth of illegal Chinese fishing in and around the Spratly Islands and Scarborough Shoal, as well as by the ecological damage China's unprecedented reclamation work has caused in the Spratlys since late 2013. Combined, these activities are devastating migratory fish species important to both economic livelihoods and food security in the Philippines. Manila has also been unable to commercially exploit what are believed to be rich natural gas deposits beneath Reed Bank off the coast of Palawan. The only major natural gas field currently being exploited in the Philippines is set to run dry around 2024, making access to Reed Bank vital to the nation's energy security.²³⁶

China's reclamation work in the Spratlys has heightened the Philippines' perception of an acute threat. China appears to have completed work on an airstrip at Fiery Cross Reef capable of accommodating any aircraft in the People's Liberation Army Air Force (PLAAF) and is constructing two more airstrips at Mischief Reef and Subi Reef.²³⁷ China has also expanded port facilities and military infrastructure at all seven of the features it occupies, and Filipino officials say that Mischief Reef—the closest of the features to the Philippine home islands—is now China's "most active base" in the Spratlys.²³⁸

The number of Chinese navy and paramilitary forces in the Spratlys is growing rapidly. By comparison, the Philippines' meager coast guard is unable to patrol in disputed waters for fear of encountering Chinese forces. Only the Philippine Navy's two flagships—the former U.S. Coast Guard

(USCG) *Hamilton*-class cutters Philippine Navy ship (BRP) *Gregorio del Pilar* and BRP *Ramon Alcaraz*—operate in the Spratlys. The Philippines' undermanned and largely undeveloped installations around the Spratlys are vulnerable should China decide to seize them—a fact well known in Manila. The most acute vulnerability is the small contingent of Filipino marines stationed aboard the BRP *Sierra Madre*—a World War II-era tank-landing craft that the Philippine Navy intentionally ran aground on Second Thomas Shoal in 1999 to ensure it would be able to monitor Chinese activities in the area following the seizure of Mischief Reef. The derelict vessel is in constant danger of falling apart, which could provoke a crisis should China try to seize the shoal or the Philippines try to reoccupy it if and when the *Sierra Madre* breaks apart. In March 2014, Chinese Coast Guard vessels attempted to prevent civilian ships from resupplying the troops on the *Sierra Madre*, underscoring just how vulnerable is its detachment.

Recognizing the danger it faces in the South China Sea, the Philippines has committed to developing what Foreign Secretary Albert del Rosario has called a “minimum credible defense posture.”²³⁹ In essence, Manila has determined that it needs naval, coast guard, and air force capabilities that, while certainly not able to best Chinese forces, could impose significant costs in case of a conflict.

In addition to the risk posed by China in the South China Sea, the Philippine military remains concerned about the ongoing communist insurgency. The New People's Army still includes over 6,000 troops, though violence is fairly low. Newly appointed Commanding General of the Philippine Army Eduardo Año has said that one of his top priorities will be reducing the number of rebels to fewer than 1,000 by 2016.²⁴⁰ Whether that is feasible remains to be seen. Although the Philippines remains concerned with the ongoing fight against the Abu Sayyaf terrorist group and the separatist Bangsamoro Islamic Freedom Fighters (BIFF) in the southern Philippines, neither represents the threat that the much larger Moro Islamic Liberation Front or Moro National Liberation Front posed when they were actively fighting the government. In the first half of 2015, the Philippine military launched sustained campaigns against both Abu Sayyaf and the BIFF, but both are likely to remain lesser threats.

The direct threat from insurgent groups is less concerning than the potential for largely ungoverned spaces in the southern Philippines to become havens for terrorists. The U.S. JSOTF-P was established in 2002 to combat that threat, and its official closure in early 2015 was a testament to the success of its mission. Nevertheless, continued vigilance is required to prevent the return of a credible terrorist threat in the southern Philippines.

Current and Planned Force Posture

The AFP retains a force posture unbalanced in favor of the army—a legacy of decades of viewing internal security as the primary mission of the armed forces. As a result, the navy, coast guard, and air force rely upon antiquated equipment and remain understaffed and underfunded. Seven of the navy's active ships are World War II veterans. The Philippine military is one of the Asia-Pacific's weakest and is considerably less capable than those of its neighbors in maritime Southeast Asia. One reason is that the Philippines spends less than 1 percent of its GDP on defense, despite its significant security challenges.

The Philippine military includes about 220,000 active duty personnel and another 430,000 reserves. The army has 45 tanks, 778 armored fighting vehicles, and 270 towed artillery. The services' combined air assets include 8 fixed-wing attack aircraft, 95 transport aircraft, 23 trainer aircraft, and 82 helicopters, but no fighters. The navy and coast guard combined boast just 3 frigates, 11 corvettes, 38 coastal defense craft, and about 70 other vessels.²⁴¹

In 2012, the Philippine government passed legislation reviving and updating a defunct Military Modernization Program.²⁴² The 15-year program officially started in 2013, but the military did not approve the ambitious \$22.1 billion modernization plan until early July 2015. The military plans to spend almost \$2 billion on acquisitions and upgrades through 2018, nearly \$10 billion over the following five years through 2023, and just over \$10 billion in the next five years through 2028. Air Force Maj. Gen. Raul del Rosario, who is in charge of planning for the military, has said Manila will use the funds to purchase better radars and sensors, submarines, frigates, fighters, surveillance aircraft, and missile systems. The Philippines' goal is to develop "24/7 awareness of what is happening in the disputed area [of the South China Sea] and . . . to respond quicker to any contingency in our own exclusive economic zone."²⁴³

The AFP's most high-profile recent acquisition is the purchase of 12 FA-50 fighter jets from South Korea, the first two of which were delivered in November 2015. Once operational, they will be the first new fighters in three decades. In addition, under the Aquino administration the Philippine Air Force has acquired more C-130 transport planes, is acquiring three C-295 medium-lift transports (one has already been delivered), and has received the first two of eight new combat-utility helicopters.²⁴⁴

A top item on the Philippine Air Force's wish list is a long-range patrol aircraft (LRPA) that can establish better maritime domain awareness in the South China Sea. The Department of National Defense approved a plan in early 2014 to acquire two new LRPAs, but then in August 2014 it rejected all seven bids from foreign aircraft manufacturers.²⁴⁵ Part of the problem with the LRPA project has been the Philippines' insistence that the planes be capable of antisubmarine warfare, which made bids unaffordable. In the meantime, the Philippines is seeking to acquire four refurbished Lockheed Martin P-3C Orion maritime patrol aircraft from Japan, though that will require U.S. approval.²⁴⁶ In addition to the LRPA, Aquino has committed to purchase two new naval frigates.²⁴⁷

In the second phase of the modernization plan, the Philippine military expects to buy its first diesel-electric submarines and advanced missile systems. As part of its plan to establish 24/7 ISR coverage of the South China Sea, it will install three new aerial surveillance radars with a 350-nautical mile range in locations facing the South China Sea. The AFP currently relies on two surface sensors that can detect ships only up to 200 miles away, so these new radars would significantly enhance the AFP's coverage of disputed areas. The military also intends for three of its planned surveillance planes to constantly patrol the area.²⁴⁸

The Philippines has also gained assistance from partner nations, including a high-profile \$160 million soft loan from Japan for the purchase of 10 coast guard patrol ships,²⁴⁹ the delivery of two former *Hamilton*-class U.S. Coast Guard cutters as excess defense articles,²⁵⁰ acquisition of three landing craft from Australia, and a donated landing craft utility ship from South Korea.²⁵¹

Security Cooperation with the United States

In 2014, the United States and the Philippines signed an Enhanced Defense Cooperation Agreement to bolster security cooperation. A year and a half after it was signed, the EDCA is still languishing in the Philippine Supreme Court, where it faces challenges to its constitutionality. The core question is whether the agreement requires approval from the Philippine Senate as a treaty, rather than an agreement needing only presidential approval. Regardless, in the politically charged environment ahead of the Philippines' 2016 elections, there are increasing concerns that if a decision on the agreement is not made soon, it could fall victim to domestic politics and be pushed to the next administration.

Under the EDCA, U.S. ships, aircraft, and personnel will have much greater access to Philippine bases within the framework of the two countries' Visiting Forces Agreement. The U.S. military will also be able to preposition equipment in the Philippines, which will significantly boost joint training and exercising as well as the capacity for responses to natural disaster, incidents in the South China Sea, and other emergencies. Most importantly, the agreement will allow the United States to upgrade Philippine facilities and military infrastructure for joint use at approved bases. Philippine officials have floated the names of up to eight locations that the United States could gain access to under the agreement, but the list remains a matter of debate.²⁵² The prime targets are bases in Luzon and Palawan where poor infrastructure and support facilities are butting up against the pressing need for more sustained naval and air assets near the South China Sea.²⁵³

Capability Gaps and Shortfalls

Regardless of how much the Philippines prioritizes military modernization, it will not be able to develop a "minimum credible defense posture" by itself. After decades of neglect, the AFP is too small, too poorly equipped, and too badly funded to hope to catch up with larger and more established regional neighbors in the short term. Even Secretary del Rosario's goal of merely ensuring that any attacker "would end up with a bloodied nose" will be difficult to attain.²⁵⁴ As such, the best hope the AFP has of meeting its short- and medium-term defense goals lies with the successful implementation of the EDCA.

While the Philippine navy and air force are both underdeveloped, the coast guard is by far the weakest service. As an indication of just how poorly equipped and underfunded the coast guard has been, the arrival of 10 patrol boats from Japan will more than double its effective strength.²⁵⁵ Under the Aquino administration, the coast guard has seen its budget triple. Political and military leaders appear to recognize the need to invest in the service, but it is starting from a low baseline. One promising development has been the creation of a U.S.-funded and advised National Coastal Watch Center (NCWC). Under the direction of the coast guard, the NCWC brings together all military services and government agencies involved in the maritime space, to promote better planning, information sharing, and domain awareness.²⁵⁶ The United States has also granted a waiver to assist the Philippine coast guard via the Foreign Military Sales (FMS) and Foreign Military Financing (FMF) programs.²⁵⁷ With this influx of support, it is possible that the coast guard will surpass the navy in fleet size and capabilities in the coming years and effectively patrol disputed areas of the South China Sea.²⁵⁸

A major weakness of the Philippine defense establishment remains poor long-term planning. In 2011, the government released its first National Security Policy document in a decade.²⁵⁹ The document did a good job of identifying threats to national security in the 2011 to 2016 period, but fell short on offering strategies to confront them. In 2010, the Department of National Defense released its first Defense Policy Paper since 1998, and the department hopes to release another paper in 2016.²⁶⁰ In an era of increasing threats, these planning documents must be better institutionalized. Another constraint on effective planning is the rapid turnover of senior military officials, who are forced to retire at the age of 56. Each chief of staff of the AFP serves only a year or two and most were usually colonels just a few years earlier.

Poor planning and budget constraints in the Philippine military combine to impair supply and logistics, maintenance, and procurement. The military spends 70 percent of its budget on active salaries and another 15 percent on pensions, leaving little for procurement and upgrades. The remaining funds are victim to corruption, with officers skimming off funds from payroll, procurement, and the petroleum oil and lubricants budgets.²⁶¹ The military has also struggled to spend the procurement budget it is given. Less than 10 percent of the \$8 billion earmarked for the previous 1995 to 2010 Military Modernization Plan was actually spent.²⁶² Legal and bureaucratic bottlenecks have frozen dozens of projects under the current plan.²⁶³ The United States is working to improve the procurement process, as well as logistics, maintenance, and planning processes in the AFP, and has seen some moderate but slow progress in recent years.

Given that the Philippines is a treaty ally and essentially a frontline state in the First Island Chain, its security is important to the United States. The risk of conflict has grown over the last decade as Chinese assertiveness in the South China Sea has pulled the two nations closer together than at any time since the ejection of U.S. forces from Clark Air Base and Subic Bay in the early 1990s. Philippine authorities, at least under current president Benigno Aquino, are committed to revitalizing the nation's armed forces, but there are practical limits on how quickly they can modernize. As a result, the EDCA signed with the United States is central to Philippine security. It also has the potential to solidify a key aspect of U.S. force posture for decades to come.

THAILAND

Thailand is the United States' oldest treaty ally in the region. The two countries have maintained strong military ties despite the dissolution of the Southeast Asia Treaty Organization (SEATO) in 1977, and the 1954 Manila Pact remains in force together with the 1962 Thanat-Rusk communiqué and 2012 Joint Vision Statement for the Thai-U.S. Defense Alliance.²⁶⁴ In the 1960s and early 70s, Thailand provided basing rights and troops for the U.S. war effort in Vietnam. Today, it continues to provide critical access for U.S. air operations at the strategically located U-Tapao Airfield. The military coups in 2006 and 2014 have threatened to disrupt these traditional security relations, however, as the United States has suspended many military assistance and exercises. There are also domestic stability concerns amid uncertainty about Thailand's constitutional future and an ongoing insurgency in the south.

Security Outlook

In recent decades, a growing divide has emerged between the rural poor and urban middle class. Former prime minister Thaksin Shinawatra, who was ousted in the 2006 coup, built a populist movement mainly in the rural areas that challenged Thailand's traditional models of governance and prompted the military to intervene. Eight years later, in the six months prior to Thailand's 2014 coup, giant opposition protests blocked key streets in Bangkok in an effort to oust the elected government led by Yingluck Shinawatra, Thaksin's sister. The military intervened again, as it has more than a dozen times since the 1930s, in its self-appointed role as the protector of Thai sovereignty, stability, and the monarchy.²⁶⁵ In the wake of the 2014 coup, domestic politics has emerged as the top priority of the Thai military, which is trying to drive a form of guided democracy ahead of elections, now expected in mid-2017 at the earliest.²⁶⁶ Political tensions in Thailand have been exacerbated by uncertainties over succession in the monarchy. King Bhumiphol Adulyadej is 88 years old and in poor health, resulting in different political factions jockeying for position ahead of the succession.

Regarding external security, Thailand shares borders with four countries—Burma, Cambodia, Laos, and Malaysia—whose relations with Thailand have often been difficult. Thailand never demilitarized its borders, with the Second Army still playing a major role along the eastern border with Cambodia, the Third Army operating along the northern border with Laos and Burma, and the Fourth Army focusing on the shorter border with Malaysia.²⁶⁷ For decades, Thailand has attracted political and economic refugees from Burma, Cambodia, and Laos thanks to Bangkok's relatively relaxed immigration controls.

Maritime security remains a major concern for Thai leaders. In the Gulf of Thailand, Bangkok is concerned about protecting its critical oil and natural gas platforms. Thailand is not a claimant to the South China Sea dispute, but Bangkok is concerned that tensions between the six disputing countries—particularly China, Vietnam, and the Philippines—could lead to conflict or a military accident that could result in unintended escalation. Thailand is also worried about the frequency of piracy in the southwest region of the South China Sea, near Malaysia and Singapore. In early 2015, this caused Thailand to join other governments in discussions about establishing a coordinated security patrol in the area.²⁶⁸

Thailand-China ties have long been stronger than Beijing's relations with many other Southeast Asian countries and include both arms sales and military exchanges. China's export of military equipment to Thailand dates back to the 1980s when both countries supported Cambodian resistance groups fighting the Vietnamese-backed government in Phnom Penh. The two countries have eyed even closer defense ties in recent years. In April 2015, Beijing proposed signing a new pact on military cooperation including joint exercises, and Thailand deported over 100 Muslim Uighur migrants to China at Beijing's request in July.²⁶⁹ Sino-Thai relations have deepened in the wake of the coup, and some believe Bangkok will continue to move closer to Beijing in response to shunning from Washington.²⁷⁰

Finally, Thai security forces are also focused on the insurgency that erupted in the four majority Muslim provinces in southern Thailand in 2004. The violence has left at least 6,000 dead. The

movement is led by a combination of local separatists and Islamic radicals who are demanding increased autonomy. Since the coup, the military has responded by arming more defense volunteers in the area and agreeing to hold peace talks with Malaysia acting as a mediator. In August 2015, bombing of a popular religious shrine in Bangkok claimed 20 lives. Thai police have said the bombing was linked to militants of Uighur ethnicity in an apparent attempt to avenge Bangkok's forced repatriation of over 100 Uighurs a few weeks earlier.

Current and Planned Force Posture

The Thai military is one of the best funded in Southeast Asia, which has allowed it to modernize and add new equipment in recent years. Thailand's goal is to become one of the top two (after Singapore) militaries in the region. The military government has proposed a 2016 defense budget of nearly \$7 billion, more than triple the level of \$2 billion at the time of the previous coup in 2006.²⁷² The military looks to invest this funding largely in fighter aircraft and increased naval capability.²⁷³

Of Thailand's military services, the army is the oldest, largest, and best equipped. The army also plays the most active role in domestic political affairs. In recent years, Ukraine has become a major supplier of defense articles, furnishing the Thai army with six BTR-3E1 armored personnel carriers and 49 T-84 Oplot Main Battle Tanks.²⁷⁴ Regarding the air force and navy, Thailand has made significant recent purchases of systems from Sweden. In 2013, Saab delivered the final four of 12 Gripen JAS-39C/D fighters to the air force. It has also provided two additional aircraft as well as 100B Argus Airborne Early Warning and Control aircraft fitted with the Erieye radar system.²⁷⁵ Thailand has also been upgrading its aging fleet of UH-1H Huey helicopters. In 2012, the government approved the purchase of four EC725 helicopters from France for search and rescue missions.²⁷⁶ Thailand has been expanding its navy and coast guard mostly with vessels from Asian nations. It received an *Endurance*-class landing platform dock (LPD) ship from Singapore in 2012 for disaster relief missions in the region. Bangkok has ordered frigates from South Korea with the first vessel arriving in 2018.²⁷⁷

In early July 2015, the Thai military government's cabinet approved the purchase of three Chinese Type 039 (*Yuan*-class) diesel-electric attack submarines in a move that clearly demonstrates the drift in Thai-U.S. military ties.²⁷⁸ A few weeks later, however, the Thai defense minister said the \$1.6 billion deal had been put on hold pending further study by the navy.²⁷⁹ Thai-China ties have long been stronger than Beijing's relations with many other Southeast Asian countries and include both arms sales and military exchanges. Thai relations with Beijing have deepened in the wake of the coup.²⁸⁰

Security Cooperation with the United States

Thailand's 2014 coup disrupted longstanding security relations with the United States. Military ties have long involved U.S. security assistance, training, and joint military exercises. Bangkok has also provided access to key installations for the United States, including U-Tapao Airfield on the Gulf of Thailand. Once a critical operating base for U.S. bombers in the Vietnam War era, more recently U-Tapao has served as a platform for parts of the annual multilateral Cobra Gold exercise, U.S. combat missions in Afghanistan and Iraq, and regional HA/DR operations.

In response to the coup, Washington implemented relevant congressional requirements by suspending some exercises and cutting back security assistance and training, although it continued with a scaled-down Cobra Gold exercise in 2015.²⁸¹ Prior to the coup, the United States and Thailand were engaging in 50 joint military exercises a year. Over the years, tens of thousands of Thai military officers have received U.S. training under the International Military Education and Training (IMET) program. IMET funding was suspended after the coup.²⁸² Continued uncertainty about the political transition in Thailand puts a cloud over resumption of IMET and other forms of security cooperation. It will be imperative that the United States use the strong U.S.-Thai military relationship to encourage a return to full democratic processes while sustaining the maximum level of defense cooperation and engagement consistent with U.S. laws and principles.

Strong momentum in the bilateral relationship had developed in the years immediately preceding the coup. In late 2012, then-Defense Secretary Leon Panetta and his Thai counterpart signed a joint vision statement redefining the U.S.-Thai defense alliance.²⁸³ The statement highlighted 180 years of cooperation and refreshed the goals of the alliance. The statement emphasized building regional security partnerships, including with Burma, where Washington was seeking to build ties in response to moves toward increased democracy.²⁸⁴ Thailand's substantial defense spending and decades of training with the United States had given the Thai military the ability to work closely with the U.S. military in tackling regional security issues. Thailand's fleet of C-130 transport aircraft and the navy's LPD have allowed the military to play a key role in responding to disasters in the region and reducing dependence on the United States for relief efforts.²⁸⁵

The United States has long provided assistance to Thailand to purchase military equipment through the Foreign Military Financing program.²⁸⁶ Thailand has also qualified under the Excess Defense Articles program through which it has received used U.S. aircraft and ships. At the time of the suspension of the FMF program last year, Thailand was in the process of becoming the first country to purchase UH-72 Lakotas.²⁸⁷ In 2012, Thailand began upgrading 18 F-16A/B Block 15 fighters using U.S. FMS credits. These upgrades include modular mission computers, APG-68(V)9 radars, Terma AN/ALQ-213 electronic warfare management systems, Link 16 datalinks, and other equipment.²⁸⁸

Capability Gaps

The Thai military perceives its largest capability gap as command and control networks, which hinder it from quickly accessing and disseminating intelligence. Thailand is in the process of buying new command and control systems and installing them on aircraft.²⁸⁹ The Thai military also sees itself as weak in maritime domain awareness. The flood of Rohingya refugees from Burma earlier this year demonstrated that Thailand lacks the naval and coast guard capacity to do adequate surveillance of the maritime region to its west. Some procurements currently underway will help address this gap.

With the U.S. IMET program suspended for military officers, Washington could consider providing training to civilians under Expanded-IMET (E-IMET) in such areas as management of defense resources, improving the military justice system, civilian control of the military, and cooperation between police and military forces in counter-narcotics efforts. This would allow the United States to continue with at least some form of defense diplomacy, much like it did with Indonesia

before U.S. sanctions were eased between 2005 and 2010. After Thailand returns to democracy, it is critical that Washington and Bangkok move quickly to address the weakening of military ties since the coup. Top leaders from both sides will need to mount talks on how to restore the strategic trust the two countries have long enjoyed and resume plans to work together in pursuit of a multitude of shared interests.²⁹⁰

INDIA

In the last year, India's new leadership has reshaped its approach to foreign policy and security under Prime Minister Narendra Modi. The prime minister's political party, the Bharatiya Janata Party (BJP), has never been beholden to India's traditional stance of "non-alignment" as a guiding foreign policy principle. The only other time the BJP formed a government, from 1998 to 2004, the government struck out in a similarly bold fashion, which included the 1998 nuclear tests and creation of a standing nuclear weapons capability. The government later collaborated on stronger defense and civilian nuclear cooperation with the United States as outlined in the January 2004 announcement of the Next Steps in Strategic Partnership.²⁹¹

Prime Minister Modi has engaged in an active, pragmatic approach to foreign policy. First, he quickly engaged the "great powers"—the United States, Japan, China, and Russia—that have strategic technologies as well as investments critical for India's development. Second, Prime Minister Modi is spending considerable time rebuilding flagging relations with his neighbors that had been courted heavily by China—Nepal, Bangladesh, Sri Lanka, Myanmar, and key maritime states. Third, Prime Minister Modi is attempting to build economic and, to some extent, security relationships with other countries bordering, or near, China—Mongolia, South Korea, and Central Asia. The U.S.-India Joint Strategic Vision released in January 2015 offers a set of agreed-upon principles for security across the Indo-Pacific.

The Congress Party, while greatly weakened after its historic collapse in last year's national election, remains the chief opposition party. In fact, Congress today holds nine states (mostly small) compared to the BJP's eight states, and is the largest party in the Rajya Sabha, the upper house of Parliament.²⁹² So far, Congress has chosen to generally support BJP initiatives that appear to continue policies adopted during the Congress Party's rule from 2004 to 2014. Yet, this stance could evolve over time, and with the unpredictable nature of Indian politics, it is conceivable that the Congress Party could choose India's next prime minister in 2019. Few of the Congress Party's young, rising leaders have discussed their own views on India's role as a regional security provider, much less the partnership with the United States. This possible change in administration remains one of the more obvious opportunities for a reversal in the positive trajectory of U.S.-India security relations.

India's numerous regional parties sometimes play a significant role in India's regional relationships and in issues of concern to U.S. policymakers. This is particularly true for the two Tamilian parties in Tamil Nadu, which regularly comment on issues involving the Tamil minority in Sri Lanka, as well as the Indian state of West Bengal, which regularly intervenes in issues related to its neighbor Bangladesh. Regional parties that control their home states often work to create

more robust private defense industries in their home states, so programs like the Defense Technology and Trade Initiative (DTTI) and the Make in India campaign should find broad support.

Security Outlook

India's top near-term security concern is the threat of a major domestic terrorist attack, likely triggered by extremists based in, or supported by, Pakistan. Apart from concern about loss of life and property from such an attack, it could force Indian leaders to initiate a military response, taking the nation down an uncertain path. The BJP was quite critical of the Manmohan Singh government's restraint following the November 2008 terrorist attack in Mumbai, and may feel compelled to take strong actions in response to a similar incident. At the very least, if there is a mobilization following an attack—such as the one that followed the November 2001 attack against the Indian Parliament—the chances of miscalculation and escalation will be substantial.

Some terrorist groups represent separatist movements, mainly focused on the Northeast States. These groups sometimes find safe haven in the less-governed border areas of India's neighbors. On June 8, 2015, Indian Special Forces carried out a successful raid against militants camped in Myanmar.²⁹³ This was a response to an attack on an Indian military convoy earlier that month. The Indian public, by and large, was supportive of this small but muscular operation. India also faces a low-intensity but active threat of domestic attacks from Maoists, called Naxalites. So far, the rise of ISIL and attempts by al-Qaeda to gain a foothold in India, either for recruitment or to create a local operational arm, have not resulted in tangible gains despite India's large Muslim population. Yet, Indian policymakers must remain vigilant due to the country's large Muslim base. The December 2014 arrest of a Bangalore technology worker, who reportedly supported ISIL through social media, has heightened awareness of this issue.²⁹⁴

Terrorism is a major national security concern, but India also shares long borders with each of its two chief rivals, China and Pakistan.²⁹⁵ For this reason, India has historically given the Indian Army pride of place among the military services. Pakistan is also believed to be a rising source of cyber attacks against India. These include less conventional cyber attacks, such as information warfare using false and incendiary news stories of violence between Buddhists and Muslims, which led to real violence in India in mid-2012.²⁹⁶ India also faces other, more direct threats from Pakistan. The two sides regularly exchange fire along their disputed border, sometimes killing civilians.²⁹⁷ In addition, maritime threats from Pakistan are a growing concern. In 2008, the Mumbai attackers arrived by sea, and militants attempted to seize a Pakistan naval vessel in September 2014.²⁹⁸ It is believed that U.S. Navy vessels were going to be the target of a follow-on attack, had this seizure been successful. India also remains concerned about illicit trafficking of weapons of mass destruction, particularly attempts to strengthen Pakistan's missile and nuclear programs via illicit trade, or export of these technologies to other groups and nations.

India increasingly views China as its greatest long-term security competitor. Historically, Sino-Indian tension was largely limited to the land border, much of which is still not firmly defined. Yet in recent years, India has started to feel other security pressures from China. Concerns include Chinese submarines traversing the Indian Ocean, cyber attacks, and Beijing's attempts to build stronger economic ties with India's neighbors, including Myanmar, Bangladesh, Nepal, and Sri

Lanka.²⁹⁹ China also maintains close relations with Pakistan. China is Pakistan's largest arms supplier, receiving 41 percent of China's arms sales between 2010 and 2014.³⁰⁰ China is expanding its ties with Pakistan to include a direct economic component. In 2013, China announced it would create an economic corridor through Pakistan that will include transportation and energy infrastructure.³⁰¹ While a stronger Pakistani economy may increase stability, India remains wary of cooperation between its two chief rivals. While India's growing economic relations with China are sometimes portrayed as a positive buffer in their relationship, India's imports from China were five times the size of its exports to China in FY 2015.³⁰²

Across the Indo-Pacific more broadly, India is beginning to identify greater national interest in contributing to regional security, though its actions in this regard trail the desires of both ASEAN members and the United States for greater Indian contributions. India views South Asia as its theater of operations, rarely engaging directly on security affairs outside this region, apart from providing troops for United Nations peacekeeping missions. Yet this is starting to change, driven by India's increased global connectivity. The Indian diaspora is large and widely spread, and as a source of remittances it is becoming an increasingly important constituency for the Indian government. India's trade and investment links with the world are steadily increasing and India is among the world's largest energy importers. For all of these reasons, India's external security interests are growing. Some examples of India's perspective on the wider theater of potential operations include: India's successful efforts to evacuate international citizens from Yemen in April 2015; the anti-piracy operations launched by the Indian Navy in the Gulf of Aden in 2008; the Indian Navy's escort operations through the Strait of Malacca in 2002; and Indian interdiction of a North Korean shipment of missile components on its way to Libya in June 1999.³⁰³

Current and Planned Force Posture

The Indian Army has long been the strongest service within the Indian military, but in recent years India has given more attention to its air force and navy as threats to India have evolved. The Indian Army numbers roughly 1,150,000 personnel, as compared to just 58,000 for the navy and 127,000 for the air force. The Indian Army maintains six regional command headquarters and one training command. The army, long the dominant service in the Indian military, remains one of the world's largest standing armies. The Indian Army is upgrading its mechanized forces, artillery, infantry units, and air defenses to meet new and emerging threats. Army aviation will include new light combat and light observation systems in the coming years.

The Indian Navy's headquarters is located in New Delhi, with commands at Mumbai, Vishakhapatnam, Kochi, and Port Blair. India's main surface combatants include 2 aircraft carriers, 10 destroyers, 13 frigates, 1 amphibious transport dock, and a number of smaller frigates, corvettes, LSTs, and patrol vessels. The navy's 13 diesel submarines and single nuclear attack submarine provide a substantial undersea capability, which will be strengthened with the addition of six nuclear ballistic missile submarines in the near future. The navy also operates advanced aircraft, to include Harrier jets, Sea King helicopters, and P-8 maritime patrol aircraft.

The Indian Air Force maintains five regional air commands in New Delhi, Gandhinagar, Shillong, Allahabad, and Trivandrum. The air force also has two supporting commands for maintenance, in Nag-

pur, and training, in Bangalore. India maintains over 800 combat-capable aircraft, including over 200 Su-30MKI fighter jets. India has a large fleet of airborne early warning and control aircraft, transport aircraft, and trainers, as well as a limited aerial refueling capability. In addition, the air force operates rotary-wing assets and unmanned aerial vehicles, as well as surface-to-air missile systems.

The Indian Coast Guard includes another 10,000 personnel, with 230,000 more in the Border Security Force, and just over 1,400,000 in what are typically termed “paramilitary forces.” India’s nuclear and ballistic missile forces are also substantial. India’s Strategic Forces Command is responsible for tactical and strategic nuclear weapons. Public estimates put the Indian intermediate-range ballistic missile (IRBM) force at over two dozen, with roughly the same number of SRBMs.

Security Cooperation with the United States

The U.S. approach to defense cooperation with India focuses on building ties at a deliberate, sustained pace without pressing India’s leaders to get involved in issues outside India’s direct operational domain. This approach guards against India-based critics of the relationship, who are concerned that partnership with the United States could push India into situations where it does not have an immediate strategic interest, though the frequency of meetings between Prime Minister Modi and President Obama have pushed the rate of engagement to an unprecedented level. The U.S. “slow and steady” approach helped insulate the U.S.-India defense relationship in the waning years of the Congress-led United Progressive Alliance (UPA) government in which other elements of the relationship, particularly economic and civilian nuclear cooperation, suffered repeated setbacks. Nevertheless, some within the United States remain concerned about the pace of progress, and whether other U.S. security ties in South Asia might slow bilateral cooperation. With a more energetic and forward-leaning government in Delhi, the time is ripe to review both partners’ respective priorities for security in South Asia and determine how the United States and India can cooperate to strengthen regional security, while thinking of ways to further expand this partnership as India’s operational interests expand.

The foundation of the U.S.-India security partnership has been refreshed with the January 2015 U.S.-India Joint Strategic Vision for the Asia Pacific and Indian Ocean Region,³⁰⁴ and the renewed Framework for the U.S.-India Defense Relationship signed in June 2015.³⁰⁵ On its face, the Joint Strategic Vision is revolutionary, though its true importance can only be measured by the actions it produces over time. The defense framework agreement largely affirms the principles enshrined in the 2005 version, while expanding in small but possibly significant ways such as greater exchanges among defense colleges, establishing a focus on maritime security, and looking at common defense platforms. There is also renewed hope that India might consider signing the defense foundation agreements—a Logistics Support Agreement (LSA), the Communication Interoperability and Security Memorandum of Agreement (CISMOA), and the Basic Exchange and Cooperation Agreement (BECA) for geospatial cooperation. Successful joint efforts in humanitarian assistance following the April 2015 earthquake in Nepal underscores the need to prepare more effectively for the next regional disaster that will involve both militaries. Concluding these foundation agreements would provide a sharp boost to bilateral defense relations, though opponents in India claim these agreements would erode Delhi’s sovereignty.

In recent years, India has started to look at strengthening its air and naval capabilities, areas ripe for cooperation with the United States. The annual Exercise Malabar regularly includes anti-submarine warfare exercises. Recently, Malabar has included more complex elements, with the aircraft carrier USS *Theodore Roosevelt* participating and with the inclusion of Japan in the 2009 and 2014 exercises. The United States and India also conducted a submarine-focused exercise named INDIAEX in 2012. The United States and India could further explore submarine technologies that can augment India's next-generation submarine fleet, perhaps through inclusion of a related pathfinder effort in the Defense Technology and Trade Initiative. In terms of air capabilities, the United States has helped India through the export of several aircraft platforms. These include the P-8I Neptune, C-130J Super Hercules, and C-17 Globemaster. India currently has two aircraft carriers in operation, and two more under development. The United States has offered to help India develop advanced technologies for use on aircraft carriers, as well as advanced fighter jet engines as part of the DTTI. This has been an important avenue for engaging the Indian Ministry of Defence to encourage stronger security cooperation ties through the DTTI.

Cooperation in other areas, such as cyber security, has not been as robust or straightforward. Despite the United States and India facing similar cyber threats, often from similar sources, there is a reluctance to engage. Concerns are due, at least partially, to Indian reservations about divulging security and intelligence capabilities to potentially interested intelligence-gathering services abroad. Additionally, neither DOD nor the Indian Defense Ministry have the lead for cyber issues within their respective governments. The government of India is currently assigning a lead agency for cyber issues. Scope for cooperation on cyber security will increase over time as issues relating to agency roles and responsibilities are clarified, and as Washington and Delhi become more comfortable working together on sensitive security issues. Apart from looking at ways to help India fill capability gaps, the United States should also deepen cooperation with India in areas where both have shared strengths. Potential areas of cooperation include intelligence sharing, humanitarian assistance and disaster relief, and counterterrorism.

Capability Gaps and Shortfalls

As noted earlier, India is facing new challenges that demand a reorientation of India's military capabilities. These new challenges will also force the United States to change how it approaches India. The Indian military's slow pace of change has made it difficult for India to develop or acquire the capabilities necessary to meet these challenges on its own, despite having \$15 billion assigned for military capital expenditures in FY 2015, one of the world's largest allocations.³⁰⁶ India needs to upgrade its undersea, air power projection, and cyber defense capabilities. The United States could expand cooperation with India in these areas and deepen U.S.-India ties by practicing patience, letting India lead, and preparing for political change.

With the recent docking of Chinese submarines in Sri Lanka and Pakistan, India is becoming increasingly concerned about its capabilities to monitor and engage undersea activities. Facing a growing Chinese undersea presence in the Indian Ocean region, India can be expected to improve its ability to monitor and, potentially, engage undersea contacts. In addition, as India's global interests grow, Delhi's interest in longer-distance operations will increase. This will in-

clude efforts to modernize India's fighter force and aerial refueling capabilities, as well as more advanced carrier operations for true blue-water power projection. On the cyber security front, India is struggling to identify the perpetrators of cyber attacks and respond accordingly.³⁰⁷ The United States has real expertise in each of these areas, so increasing cooperation could help to address significant capability gaps and capacity shortfalls. Both governments could also review plans for joint exercises and training to make sure they are responsive to India's evolving threats. In so doing, the United States could continue to look for ways to engage other regional partners in multilateral activities, including Japan, Australia, Mongolia, Singapore, Vietnam, Indonesia, Bangladesh, Sri Lanka, and South Korea. Recent efforts to create trilateral and quadrilateral ties among major regional powers such as India, Japan, Australia, and the United States can reinforce rules and norms throughout the Indo-Pacific. India's growing security ties with Japan and Australia have already led to bilateral agreements and expanded security cooperation, which officials expect to mature in the years ahead.

There remains widespread cynicism in India that partnership with the United States on security matters equates to India acting as a junior partner, even in its own region. This should change over time as rising officials are less steeped in policies rooted in India's traditional nonaligned status, and U.S. policymakers must make efforts to let India take the lead in situations where it has relative strengths. U.S. officials should be prepared for an eventual transition in India's political leadership. India's next national election is less than four years away. While there is no reason to assume the Modi government will not win reelection, instability is the only sure thing in Indian politics. There are very real concerns about whether a different leader may quickly reverse, or at least stall, the pace of cooperation. India's choices on handling the nuclear liability law and other strategic initiatives underscores the potential challenges of committing time and energy to this partnership. U.S. policymakers must be prepared to absorb the occasional setback, or period of slow progress. As a result, the United States must continue to engage a wide range of leaders from across India's political spectrum, and work hard to cement progress whenever possible.

The U.S. Department of Defense has a clear and reasonable engagement strategy to engage India, focusing on small but sustainable steps that generally have a clear benefit to India. No major course corrections are recommended, but policymakers must work to protect against setbacks, while ensuring that modest areas of cooperation such as DTTI, HA/DR, and joint exercises are aligned with India's evolving security concerns. The best way to incentivize future cooperation is to demonstrate to Indian leaders the powerful benefits of working together with the United States.

TAIWAN

Taiwan is eager to contribute to the U.S. rebalance, but its ability to do so is strictly limited by U.S. policy. Taipei's most important responsibility is to preserve peace and stability in the Taiwan Strait. Taiwan faces a severe military threat from the People's Republic of China, which aims to reunify Taiwan with the Mainland in the future. Deterring China from using coercion or launching an attack, as well as maintaining the capabilities and preparedness to respond, are Taiwan's top military priorities. Taiwan cannot compete with China force-on-force; it has to rely

on an asymmetric strategy based on limited resources. Improved relations with the PRC, which have lowered the public's threat perception, and competing budget priorities have resulted in a gradual decline in defense spending, which now stands at just over 2 percent of Taiwan's GDP. Addressing the numerous gaps in Taiwan's military capabilities will require more investment in defense as well as increased assistance from the United States.

Security Outlook

The PRC military is Taiwan's primary security concern. Beijing has refused to renounce the use of military force against Taiwan, and its growing defense budget and military buildup has upset the cross-strait military balance. Deterring China from using coercion or force against Taiwan remains the highest priority for the island's government and military. Information security is another major security concern. Taiwan faces a severe cyber threat from the PRC and could face a major cyber attack in various military contingencies. Taiwan is seeking to cope with an increase in Chinese cyber exploitation that poses a risk to information systems.

Another concern relates to maritime disputes in the East China Sea where Taiwan, the PRC, and Japan claim the Senkaku/Diaoyu Islands, and in the South China Sea, where Taiwan occupies two islands, Itu Aba and Pratas, and claims sovereignty over all the land features, some of which are also claimed by the PRC, Malaysia, the Philippines, and Vietnam. President Ma Ying-jeou's East China Sea Peace Initiative (ECSPI) has set a positive example for the management of territorial disputes in the region. The ECSPI created an environment that enabled the signing of a fisheries agreement between Taiwan and Japan in April 2013, which contributes to maintaining stability between the two countries in disputed waters in the East China Sea. In May 2015, Ma proposed a similar initiative for the South China Sea.³⁰⁸ Among Taiwan's objectives is to play a greater role in enforcing maritime law in the South China Sea. The Taiwan Coast Guard commissioned two 3,000-ton patrol vessels in June 2015 that will dock at a new port being constructed on Itu Aba in the Spratly Archipelago by the end of 2015.³⁰⁹

Taiwan also faces nontraditional security threats such as natural disasters, epidemics, and terrorism. In 2005, the World Bank assessed that "Taiwan may be the place on Earth most vulnerable to natural hazards, with 73 percent of its land and population exposed to three or more hazards."³¹⁰ Major concerns include typhoons, floods, landslides, and earthquakes, all of which could result in significant human and economic losses and pose challenges for Taiwan's early warning, communications, and emergency responses. As a consequence of climate change, typhoons are occurring with greater frequency and intensity in recent years. In 2009, after Typhoon Morakot, President Ma Ying-jeou proclaimed that "our enemy is not necessarily the people across the Taiwan Strait, but nature."³¹¹ Taiwan's military forces are responsible for disaster response. Taiwan's geographical location, high dependence on trade with China and Southeast Asia, and high population density also puts it at a high risk for pandemics. Additional security concerns include terrorism, border control, trafficking of illegal drugs, immigration, and proliferation of weapons of mass destruction.

Current and Planned Force Posture

Taiwan's military, while smaller than that of the PRC, is highly trained and well-equipped. The army numbers 200,000 active and 1,500,000 reserve personnel, providing a substantial counter-invasion capability. The navy retains 45,000 active and 67,000 reserve personnel, with 26 major surface ships and 2 combat-ready submarines. The air force includes 45,000 active and 90,000 reserve personnel, with over 400 combat aircraft. In addition, Taiwan retains significant unconventional warfare capabilities.

Under President Ma Ying-jeou, Taiwan has proposed a plan, called the Yong Gu program, to downsize its armed forces. The focus of Yong Gu is twofold: first, managing the transition from a conscription force to an all-volunteer force (AVF); and second, reevaluating Taiwan's defense needs and force posture. Originally scheduled to begin implementation in July 2015, the plan aimed to cut military personnel to between 170,000 and 190,000 by the end of 2019.³¹² The plan has been criticized domestically, however, and has yet to be approved by the legislature.³¹³ Among all the military branches, the army is most strongly opposed, as it would suffer the most significant downsizing under the plan. Since President Ma will be in office only until May 2016, observers suggest that Yong Gu is unlikely to go forward during his tenure.

Under a prior wave of reductions, Taiwan's armed forces were cut from 275,000 to 215,000.³¹⁴ Taiwan's low birthrate and introduction of the AVF make it necessary to cut the force even further. In a May 2015 interview, Ma Ying-jeou stated that Taiwan's primary defense objective is "effective deterrence" and noted, "We do not necessarily need large defense forces . . . our forces must be strong, specialized, and highly sophisticated."³¹⁵ There is not enough money in the budget to support the size of the current force. As a percentage of GDP, Taiwan's defense spending dropped to 2 percent (\$10.2 billion) in 2014.³¹⁶ The Democratic Progressive Party (DPP), the main opposition party, has promised to raise the defense budget to 3 percent of GDP if it returns to power in May 2016, but its plan is contingent on growing the economy. Competing pressures from social welfare programs mean that a marginal reversal of the current downward defense spending trend is the most likely scenario.

While there is general agreement that Taiwan needs to reduce the size of its armed forces, there are widespread complaints that the downsizing and the creation of the AVF are being pushed too quickly. Senior officers say that the process of establishing the AVF is having a negative impact on training and readiness. In the preface to the DPP's 2014 defense policy blue paper, DPP Chairperson Tsai Ing-wen wrote, "The next phase of the downsizing plan—the Yong Gu Program—should not be implemented hastily before a comprehensive review of our military strategy, mission, force requirement, and military service system."³¹⁷ The target date for the AVF was pushed back again in September 2015, leaving the decision to the next president to decide. Creating the AVF is very expensive as personnel costs are expected to double. Taiwan is still in the early stages of the AVF plan and recruitment and retention are posing challenges. Among the problems that Taiwan faces in sizing its force is restructuring its reserves. Currently, new recruits train for four months and then remain in the reserve force for eight years during which they train only five days every two years.³¹⁸ Taiwan must reconceptualize its reserves, defining appropriate roles and missions for

both combat and non-combat operations. Taiwan must create a well-trained reserve force that can replace front line forces in a conflict. Although there is recognition that these tasks must be undertaken, they are not on the agenda and no funding has been allocated.

Major force posture adjustments are unlikely in the next three years. While some individuals in the military recognize the need for Taiwan to develop more asymmetric platforms and strategies, the majority in senior positions have a traditional mindset and are risk-averse. In 2014, the ROC Ministry of National Defense (MND) released a naval modernization plan for the following two decades featuring a host of domestically produced equipment, including 4 10,000-ton destroyers, 10 to 15 3,000-ton catamarans, amphibious transport docks to replace dock landing ships and tank landing ships, and between 4 and 8 diesel submarines. In the last few years, the navy has taken delivery of several new indigenous platforms, including the *Kuang Hua VI*-class fast-attack missile craft, the *Tuo Jiang*-class catamaran corvette, and the Panshi fast combat support ship. The navy also plans to procure four recently decommissioned U.S. *Oliver Hazard Perry*-class frigates.

A plan to build an indigenous submarine was launched in December 2014. Called the Indigenous Defense Submarine (IDS) program, the budget for the three-year contract design phase will begin in 2016 at an estimated cost of \$94 million.³²⁰ Four diesel electric attack submarines (SSKs) will be produced in the range of 1,200–3,000 tons.³²¹ The IDS program would rely heavily on Taiwanese industrial capabilities for the pressure hull fabrication, the main motor, batteries, and air-independent propulsion, with foreign technical assistance where available.³²² A prototype could be unveiled in 2024. The plan is highly controversial both in Taiwan and the United States due to the high cost and the lack of sufficient defense resources.

Security Cooperation with the United States

Taiwan's primary contribution to U.S. regional strategy is to preserve peace and stability across the Taiwan Strait. Deterring China from attacking the territory under Taiwan's control, as well as maintaining its autonomy and prosperity, are Taiwan's major responsibilities. In addition, Taiwanese SIGINT capabilities enable collection of information on Chinese maritime activity along the PRC coast and in the South China Sea.³²³ Beyond those functions, there is little that Taiwan is able to do to contribute significantly to the U.S. rebalance strategy, even though it is a very willing and eager partner. Taipei would welcome a major role, primarily because it would help bind the United States to Taiwan and increase Taipei's confidence that the United States would come to Taiwan's aid in a crisis. The United States, however, remains reluctant to include Taiwan in war planning or to coordinate with Taiwan militarily. This reluctance is due to the U.S. assessment that the benefits of closer collaboration with Taiwan are outweighed by the risks of an extreme PRC reaction. China would view the explicit inclusion of Taiwan in the U.S. rebalance strategy as a dangerous new step and might react strongly, potentially undermining U.S. efforts to manage the relationship.

Taiwan could also assist the United States and other friendly maritime nations in the Western Pacific in forming a common operational picture of the maritime domain. With improved C4ISR, Taiwan could help to provide information about the situation in the East China Sea, the South China Sea, and on the eastern side of Taiwan. Taiwan could also conduct surveillance missions in the South China Sea with its P-3C Orion patrol aircraft.³²⁴ Taiwan has expressed a willingness

to contribute to regional security via regular patrols of international waters and shipping lanes. If permitted, it could participate in regional anti-piracy efforts and potentially in sea lines of communication (SLOC) protection. However, U.S. interests are likely best served by Taiwan focusing its attention on the Taiwan Strait. A credible Taiwanese undersea warfare capability could add to the U.S. rebalance by strengthening deterrence against China's rapidly growing navy.

If given the opportunity, Taiwan would also be willing to contribute more actively to regional HA/DR efforts. At times, Taiwan's efforts are stymied by China. For example, after Malaysia Airlines Flight 370 went missing, Taiwan responded to Malaysia's plea for help by dispatching navy and coast guard vessels as well as two C-130 aircraft to search in the South China Sea. Taiwan was forced to call back its ships and aircraft, however, due to Chinese objections. Similarly, Taiwan's offer of assistance to Nepal after the April 2015 earthquake was rebuffed, probably due to Kathmandu's concerns about Beijing's reaction. When Taiwan has provided aid, its impact has been limited by logistics requirements. For example, when Typhoon Haiyan struck the Philippines in 2013, Taiwan's C-130 Hercules cargo planes delivered relief goods and carried NGO personnel to a major airport, but were unable to transport the goods and people to the disaster sites where they were urgently needed.³²⁸

In making disaster relief preparations, Taiwan would be wise to focus on developing dual-use capabilities that can be used at home and abroad. For example, reconstituting an airport through use of a mobile radar system, a mobile air traffic control system, and rapid runway repair would provide a capability that would be useful domestically in the event of an attack as well as in the provision of HA/DR abroad. Taiwan already has fast combat support ships with onboard hospitals as well as nine Chinook helicopters that could assist in medical evacuation.³²⁹ To operate effectively with U.S. forces in responding to natural disasters, greater interoperability is necessary. As a step toward achieving this goal, the United States could invite Taiwanese observers to observe on U.S. ships during RIMPAC exercises. The United States could also facilitate multilateral exercises with other countries as part of the Pacific Partnership program, which focuses on HA/DR. One caveat, however, is that precious defense resources should not be squandered to advance Taiwan's participation in the international community. Homeland security must be Taiwan's top priority.

Capability Gaps and Shortfalls

Taiwan has numerous military deficiencies that require attention. A key hurdle Taiwan faces in this regard is the unwillingness of other major nations, with the exception of the United States, to assist Taiwan by providing weapons and training. Another challenge is Taipei's limited defense budget. Taiwan has deficit spending limits that the government cannot ignore. Defense spending decisions are part of overall spending allocations that are politically determined. Moreover, the improvement in cross-strait relations over the past seven years has reduced the risk of military conflict between China and Taiwan, but has also resulted in diminished support for defense spending. Other concerns have taken priority, including rising unemployment, the widening income gap between rich and poor, growing government debt, the challenges posed by an aging population, and a variety of other social issues.

Taiwan's defense requires modernization and transformation aimed at denying China its objectives through an A2/AD strategy that relies on relatively low-cost systems (such as sea mines and land-based anti-ship cruise missiles) combined with defensive concepts of operation intended to nullify PRC advantages and thereby denying China its objectives. Major gaps in Taiwan's military capabilities include air denial and defense, resilient and redundant ISR, counter-amphibious landing capabilities, and war reserve munitions.

Control of the air is the first requirement of effective defense. China could not successfully invade the island without gaining air superiority. Therefore, Taiwan's air force is an important deterrent to Chinese military action, but Taiwan's airfields are very vulnerable. Rapid runway repair kits have been purchased, and U.S. contractors have provided training to the Taiwan air force.³³⁰ Nevertheless, maintaining operational airfields remains a key vulnerability. Storage bunkers have been built for aircraft, but even if the planes are protected, they may be unusable. To increase its operational flexibility as well as its tactical proficiency, Taiwan maintains one F-16 squadron at a training base in Arizona. In a conflict, this squadron could deploy to Taiwan.³³¹

The future of Taiwan's air force is hotly debated. In 2011, the United States approved a \$5.3 billion retrofit program for Taiwan's 145 F-16A/B combat aircraft, rather than the sale of F-16C/D fighters. Taiwan's Mirage 2000v5 fighters are too expensive to maintain; probably less than 50 percent are operational. Both the Mirage and the F-5E are scheduled to be retired by 2020.³³² Many observers argue that Taiwan needs additional fighters or it will not be able to defend its airspace. Simply put, numbers matter. It may not be possible for Taiwan to have cross-strait air superiority, but it may be possible to deny China superiority. Due in part to concerns about Beijing's reaction, but also doubts about the survivability of Taiwan's aircraft and air bases, the United States is unlikely to approve the sale of advanced fighters. In the meantime, Taiwan has stopped requesting F-16C/Ds and probably hopes that the United States will eventually make available F-35s, perhaps in a decade.³³³ An interim measure could be to assist Taiwan in acquiring and upgrading additional F-16A/B aircraft. Taiwan also plans to purchase advanced trainer jets between 2017 and 2021 to replace its AT-3 jet trainers. This will be an expensive item and there is as yet no money in the budget to fund it. The air force has voiced its desire for 68 advanced jet trainers for advanced training.³³⁴

Taiwan also would benefit greatly from UASs to increase the range and capacity of the military's reconnaissance and surveillance missions. UASs offer a number of advantages, including low purchasing cost, decreased operational and manpower requirements, and no risk of pilot casualties. The Chungshan Institute of Science and Technology (CSIST) has developed a variety of UASs, but has been unable to fulfill an air force requirement for an advanced, extended-range, multipurpose UAS.

The sustained expansion of offensive Chinese capabilities, including deployment of the S-400 series of long-range surface-to-air missile systems, has increased Taiwan's need for large quantities of munitions. These weapons pose a serious challenge to Taiwan's ability to withstand an attack and hold out until U.S. forces arrive. All of Taiwan's various platforms require a greater stockpile of war reserve munitions. Taiwan has yet to decide what types and quantities of air-launched weapons it will purchase to arm the 45 F-16A/B fighter aircraft that are being upgraded. Choices

include several versions of joint direct-attack munitions (JDAMs), Paveways, and sensor-fused weapons. Taiwan's air force also needs a variety of air-to-air, air-to-ground, anti-radiation, and anti-ship missiles. Key munitions for beach defense must be well-stocked, including for live fire training to ensure readiness and a credible deterrent.

The proximity of the PRC to Taiwan combined with advanced Chinese submarines, aircraft, and missiles creates a requirement for early warning to avoid strategic and operational-level surprise. The integration of all sources of information is critical. Survivability would be especially challenging. Despite recent improvements in ISR and C2, Taiwan's capabilities in these areas are still insufficient. China's advances in electronic warfare capability have rendered Taiwan's ISR and C2 increasingly vulnerable. Taiwan needs more advanced sensors and radars as well as better integration. It needs improved targeting for integrated joint warfighting. There is also a requirement for tactical data link systems as part of a follow-on to the Po Sheng C4ISR upgrade program. Further enhancements to its command and control systems, especially to support antisubmarine warfare operations, would better prepare Taiwan's civil and military leadership for emergency management.

Among Taiwan's greatest challenges are the widespread resistance to new ways of thinking and traditional hierarchical culture. Cultivating innovation in its defense establishment is essential to generating new ideas and unique solutions to Taiwan's security problems. Since Taiwan is likely to lose communications very early in a potential military conflict with the PRC, the military must empower company and battalion commanders to execute command. Taiwan must find ways to change its prevailing military culture that inhibits decentralized C2. For example, an alternative strategy to deny airspace to an invading force would be to deploy large numbers of mobile integrated surface-to-air missiles. This would be less costly and eliminate the problem of having to keep runways operational, which may be impossible despite Taiwan's training and best efforts. Taiwan's air and missile defense capabilities have improved with the upgrade of three PATRIOT batteries and orders in for more PAC-3 missiles.³³⁵ The Surveillance Radar Program (SRP) long-range radar is deployed, but BMD integration is unclear.³³⁶ The indigenous Tien-Kung missile defense systems are not fully integrated with the PATRIOT system acquired from the United States. Taiwan could further bolster its air defense by adding to its inventory of missiles, which currently include Stingers and Standard Missile-2.³³⁷

Ultimately, amphibious landings on Taiwan's beaches are the only way that China can be assured of achieving its political objective of reunification. To deter an attack, it is vital that Taiwan maintain an effective response to amphibious landings. China is procuring large amphibious assault ships as well as capabilities such as the DF-21D ASBM that are aimed at deterring third parties from intervening during a Chinese assault on Taiwan.³³⁸ Taiwan's MND has estimated that China will have the capability to forcibly reunify Taiwan and the Mainland by 2020.³³⁹ There are many options for Taiwan to improve its ability to counter an amphibious assault from PLA forces. For example, Taiwan could procure more land-based anti-ship missiles and drones armed with anti-air and anti-surface missiles. Taipei could also acquire more advanced sea mines and ensure they can be deployed quickly. Submarines are another conventional deterrent against invasion. Taiwan wants to procure submarines and may succeed in building its own. Yet it is debatable whether doing so is the best option, since the project will be expensive and siphon money from

other programs. Even if successful, the first submarine will not be commissioned until at least 2025.³⁴⁰ The United States is likely to provide some assistance with submarine development through direct commercial sales (DCS).

Deterring China from using coercion or force against Taiwan is critically important to U.S. interests. Maintaining an effective deterrent can be viewed as Taiwan's contribution to the U.S. rebalance. Although there are other ways that Taiwan could contribute to the rebalance, these should only be undertaken if they do not detract from the military's ability to fulfill its primary mission. An asymmetric strategy that is adequately resourced is Taiwan's only long-term option to cope with China's growing military capabilities. Where possible, the United States should consider providing additional assistance to address key gaps in Taiwan's defense capabilities.

MALAYSIA

Malaysia, which lies along the Strait of Malacca and southern edge of the South China Sea, has long had close military ties with the United States, even when political relations between the two countries were prickly. Kuala Lumpur also has good relations with China and has long tried to balance its dealings with Beijing and Washington. Unlike its neighbors in Thailand and Indonesia, Malaysia's civilian government has controlled the military since independence from Britain in 1963 and Malaysia has no history of military coups. Prime Minister Najib Razak previously served as Malaysia's defense minister and, since taking office in 2009, he has worked to boost political, security, and economic ties with the United States. Beginning in early 2015, Najib has been embroiled in a scandal surrounding the government investment firm 1 Malaysia Development Berhad (1MDB), which is alleged to have deposited funds into the prime minister's personal accounts. Defense Minister Hishammudin Hussein is Najib's cousin and aspires to become prime minister in the future, so he is determined to avoid a security crisis on his watch.³⁴²

Security Outlook

Kuala Lumpur sees itself as facing three main security challenges: 1) the eastern state of Sabah on the island of Borneo; 2) the southern reaches of the South China Sea north of Borneo; and 3) growing piracy problems in the southwest of the South China Sea. Sabah, on the northern tip of Borneo, has emerged in recent years as a key internal and external security challenge for Malaysia. On February 11, 2013, more than 230 Filipino followers of the self-proclaimed sultan of Sulu landed by boat on the shores of Sabah, prompting a conflict with Malaysian security forces. The militants, who came from the southern Philippines and many of whom were armed, declared that their objective was to assert the longstanding Philippine territorial claim to Sabah.³⁴³ Malaysian security forces surrounded the village where the group was concentrated and for several weeks sought to negotiate their withdrawal. When the intruders missed several deadlines to leave, Malaysian police attacked in early March and after suffering casualties were joined by air force jets, which bombed the rebels. Police and soldiers launched a number of operations and secured the village on March 11, 2013. About 10 Malaysian soldiers and police and more than 20 rebels died in the operations.³⁴⁴

Sabah has also suffered in recent years from a spate of indiscriminate kidnappings of foreign tourists, including some from China, and Malaysians working in tourist resorts. Most of these kidnappings have taken place in the area near the Sulu archipelago in the southern Philippines. Sabah is of vital importance to the government because of the outsize role it plays in Malaysia's economy and politics. Oil and gas provide at least 25 percent of the government's revenue and an increasing percentage of this comes from facilities off the coast of Sabah operated by Malaysia's state-owned oil and gas corporation, Petronas.³⁴⁵ The state also holds a disproportionately strong position in Malaysia's parliament because the ruling party's strong showing in Sabah helped it cling to power following elections in 2013, in which it lost the nationwide popular vote.

The South China Sea, in which Malaysia's claims overlap with those of China, Taiwan, Brunei, the Philippines, and Vietnam, is an important security concern for the Malaysian government. Malaysia's response to China's nine-dash line claim in 2009 has been more subdued and lower profile than that of some of its neighbors. This is in part because of Kuala Lumpur's strong relations with Beijing and also because Malaysia's overlapping claims lie on the southern edge of the nine-dash line. However, China's recent increased frequency of naval patrols around James Shoal and Luconia Reef, less than 100 miles off the northern coast of Borneo and about 1,250 miles from the southern coast of China, has increased concern in Malaysia about Beijing's objectives. This area includes several large oil and gas fields operated by Petronas. As a result, protecting Malaysia's claims in the South China Sea is a top priority for the government.³⁴⁶

Malaysia is also concerned about an apparent surge in piracy off its coast on the southwestern edge of the South China Sea, particularly against oil tankers and cargo ships. In the first half of 2015, at least five piracy attacks took place in this area. The International Maritime Bureau reported that 11 cargo ships were captured in the South China Sea in 2014.³⁴⁷ Defense Minister Hishamuddin has proposed joint patrols with Indonesia, Singapore, and Thailand (and even suggested bringing in Burma and Cambodia) in a joint anti-piracy operation, but he has not gained traction among other countries.³⁴⁸ While Malaysia, Indonesia, and Singapore have patrolled the Strait of Malacca since the early 2000s, much of this has been done individually rather than under a joint command. Malaysian officials have also talked about doing joint patrols in the Sulu Sea with the Philippines and Brunei to deal with the kidnappings in Sabah.³⁴⁹ Analysts say they believe Kuala Lumpur would also be interested in more cooperation and even joint exercises on the fringes of the South China Sea with Vietnam and the Philippines.³⁵⁰

Current and Planned Force Posture

Like most of its neighbors, Malaysia has long focused on its army. The army has been tasked with addressing internal threats from insurgents, like those from the Malayan Communist Party in the 1960s. It has only recently begun to address the current threats from the sea, which include insurgents and kidnappers coming to Sabah from the Philippines, China pushing into Malaysia's exclusive economic zone in the South China Sea, and Rohingya Muslim refugees arriving from Burma.

To address rebels and bandits landing in Sabah from the southern Philippines, Malaysia has begun transferring more troops and police officers to Sabah and has established the Eastern Sabah Security Command. In January 2015, the army reportedly deployed 12 AV8 armored fighting vehi-

cles to boost security in Sabah.³⁵¹ Malaysia is also looking to bring in a string of decommissioned oil rigs to establish a series of semi-permanent platforms in the so-called “dog’s mouth” area of northeastern Sabah. The first rig was expected to be in place by late June 2015. These floating platforms are intended to create an artificial island chain to project power around Sabah and on the southern edge of the South China Sea.³⁵² Malaysia is also planning to bring a command and control ship to the Sabah area, but no firm date has been set for its arrival.³⁵³ Malaysia has moved Hawk 25 helicopters to the island of Labuan, off the northwestern coast of Sabah, to help intercept and counter attacks against Sabah. It has also sent some Mark V Special Operations Craft boats and navy vessels to the state to help intercept rebels arriving from the Philippines.³⁵⁴

Malaysia’s government recognizes that its security challenges require increased maritime domain awareness, in part because Malaysia is split into peninsular Malaysia and East Malaysia, with the latter sharing the island of Borneo with Brunei and Indonesia. The two landmasses are separated by a large body of water, most of which is controlled by neighboring countries. The split between the two sides of Malaysia poses unique challenges for the navy, requiring more surveillance aircraft, helicopters, and radar equipment.³⁵⁵ Malaysia has talked about purchasing at least six antisubmarine warfare helicopters to supplement the navy’s current six Super Lynx and six Eurocopter Fennecs.³⁵⁶ As nearby Brunei prepares to buy new rotary-wing aircraft, Malaysia is looking to obtain 4 to 6 used Black Hawk helicopters from its neighbor.³⁵⁷ Kuala Lumpur also expects to receive the first 2 of 6 Second General Patrol Vessel-Littoral Combat Ships by 2019.³⁵⁸ Malaysia has also announced plans to construct a new navy base in Bintulu on Sarawak, next to Sabah on Borneo, the nearest town to James Shoal.³⁵⁹

Malaysia’s 2015 defense budget totaled \$4.8 billion, less than \$1 billion of which was designated for military procurement. Despite this spending limit, one of Malaysia’s top priorities has long been to replace its fleet of aging MiG-29 fighters with 18 modern jets. Defense officials have looked at a variety of replacements including Boeing’s F/A-18E/F, the Rafale from France, and the Gripen produced by Sweden.³⁶⁰ Yet, officials have suggested in recent years that this is slipping as a priority. Much Malaysian defense spending is reportedly earmarked to buy four A400M cargo planes as well as navy patrol vessels.³⁶¹ The sharp drop in the global price of oil and gas, which provides at least a quarter of the government’s budget, has forced the Ministry of Defense to put a hold on major purchases of new military equipment.³⁶²

Security Cooperation with the United States

Military relations between Malaysia and the United States have been strong for decades. Every U.S. military service exercises with its Malaysian counterpart. The U.S. and Malaysian navies participate in a Cooperation Afloat and Readiness and Training (CARAT) exercise each year. Washington also provides some International Military Education and Training funds and a very limited amount of Foreign Military Sales assistance to Malaysia.

During the Rohingya boat people crisis in the Andaman Sea in May 2015, Malaysia allowed U.S. P-8 surveillance planes to search for refugee boats from Malaysian territory for about three weeks, even as neighboring Thailand and Indonesia refused. Malaysia has allowed the United States to fly some P-3 and P-8 surveillance planes out of Labuan in the South China Sea, but

only on a case-by-case basis out of sensitivity about China's possible reaction. Kuala Lumpur has been reluctant to sanction more flights after they were reported in the press in 2014, apparently out of concern about offending China.³⁶³ Security relations between the United States and Malaysia have gotten close under Najib, reflecting a growing confluence of interests, particularly in the South China Sea. This trend is likely to continue if China maintains its more assertive posture in the region, helping to bring Kuala Lumpur and Washington closer together. Nevertheless, growing political tensions tied to Najib's involvement in the 1MDB scandal threatens to limit the government's focus on cooperation with external actors, and if the economy falters, could call into question Najib's political position.

Capability Gaps and Shortfalls

Malaysia's military faces a number of capability gaps. Without a doubt, maritime domain awareness is one of the biggest challenges as Kuala Lumpur's main security risks come from the South China Sea and the waters off the eastern coast of Sabah. Malaysia lacks the surveillance aircraft, navy and coast guard vessels, and radar to monitor activities off its coasts. Malaysia also lacks a real amphibious capability, which would be very useful in providing security in Sabah and elsewhere. Malaysia should consider joining the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia in an effort to tackle piracy in the southwest of the South China Sea and in the Sulu Sea off Sabah. Yet, the military's declining budget, due to low oil prices, suggests that it will be some years before these challenges can be addressed.

To address the capability gaps, Malaysia and the United States can work together in a variety of areas. The United States should continue to explore channels to help Malaysia boost maritime domain awareness. If China continues to press into Malaysia's exclusive economic zone off Borneo, Malaysia may again agree to allow surveillance planes to fly out of Labuan over the South China Sea—if it is done quietly. The United States might offer to assist Malaysia in establishing a specialized amphibious ground force equivalent to the U.S. Marine Corps. In 2015, Malaysia conducted an amphibious warfare exercise with U.S. Marines in an effort to boost this capability.³⁶⁴ The United States should pursue rotational training opportunities with U.S. Marines in Sabah, which Defense Minister Hishammudin appears to support.³⁶⁵

SINGAPORE

Despite its small size and status as a "strategic partner" rather than a treaty ally, Singapore is vital to the U.S. rebalance and regional force posture. As the self-deprecating moniker "little red dot" suggests, Singapore is a tiny city-state surrounded by much larger neighbors. That practical recognition of its own insecurity and the limits of its capacity to respond to external threats has historically made Singapore the strongest proponent of a sustained U.S. military presence in Southeast Asia. Singapore has also championed regional security architecture to help prevent conflict in the region, and to encourage cooperation between its neighbors.

Security Outlook

As a small power that is dependent on external trade and investment, Singapore takes an active interest in security issues—both traditional and nontraditional—throughout the Asia-Pacific. Seeing the region remain stable and free of conflict is considered a vital national interest, as is the preservation of freedom of navigation and protection of the global maritime commons.

Singaporean leaders are closely involved in diplomatic efforts to resolve the South China Sea disputes, as any disruption to commerce in the region could have a devastating impact on the city-state's economy. Yet it remains cautious about taking a more proactive role in efforts to confront China, partially due to Singaporean leaders' desire to maintain cordial relations with a vital economic partner and rising power. They worry that more confrontational approaches by the Philippines and others have only raised the chances of conflict without bringing the disputes any closer to resolution.³⁶⁶ As a result, Singapore remains more than willing to host a modest U.S. presence to maintain security in the region, and to prod the United States behind the scenes to be more proactive in confronting Chinese behavior. Singapore also engages in extensive bilateral and multilateral training and confidence-building measures, including with Beijing in the hopes of socializing the Chinese military in international norms and best practices. However, Singapore is unlikely to join activities like freedom-of-navigation operations, joint patrols in disputed waters, or other actions that could be seen as overtly opposed to China's claims.

Singapore's immediate security concerns lie closer to home and involve nontraditional threats. Ahead of Armed Forces Day on July 1, 2015, Defense Minister Ng Eng Heng called for the reorganization of Singapore's armed forces to better confront its greatest threats in the years ahead: demographics and cyber attacks.³⁶⁷ The former is a reference to Singapore's low birth rate and difficulty filling the ranks of its military. The latter is of growing importance given the threat that cyber attacks could pose to Singapore's high-tech economy, which is highly dependent on finance. The government is working to consolidate cyber security responsibilities within the prime minister's office, rather than the three different offices in two ministries that were previously responsible. Singaporean authorities are also looking to the United States for cyber security cooperation. While Singapore has considerable work to do, it is well ahead of its neighbors on cyber security.

Officials are also increasingly concerned about potential lone wolf attacks caused by self-radicalization spilling over from neighboring Malaysia and Indonesia. In recognition of the threat posed by homegrown terrorism and returning jihadists linked to ISIL, Singapore is one of the few countries in Southeast Asia to contribute to the anti-ISIL coalition. Singapore has provided an aerial refueling tanker and an imagery analysis team to the effort.³⁶⁸ It previously contributed noncombat personnel to the wars in Afghanistan and Iraq.

In addition to terrorism and cyber security, Singapore's leaders see maritime security as a critical mission area. As a trade-dependent nation, and one sitting alongside the world's busiest and most piracy-ridden waterway—the Strait of Malacca—Singapore considers fighting piracy, smuggling, and other maritime threats to be a top priority. Singaporean forces engage in coordinated, though not combined, patrols to combat piracy in the Strait of Malacca with their Indonesian, Malaysian, and Thai counterparts. There has also been discussion, albeit preliminary, of expand-

ing these patrols to undisputed waters in the southern reaches of the South China Sea.³⁶⁹ Singapore has also deployed an anti-piracy task force in the Gulf of Aden.³⁷⁰

In addition to terrorism, cyber security, and maritime security, Singapore also sees itself as playing a vital role in regional HA/DR operations. With increasingly extreme weather around the Asia-Pacific, Singapore is joining many Southeast Asian states in viewing HA/DR as a critical need. Officials have sought to encourage regional collaboration that can be pursued without raising political sensitivities.

Current and Planned Force Posture

Singapore's military strength relies on the National Service scheme in which all 18-year-old male citizens and second-generation permanent residents deemed physically and mentally capable enter two years of active service in the military, police, or Civil Defense Force (which handles firefighting and emergency services). After they are released from active duty, non-commissioned officers and enlistees serve in the reserves until age 40.

The Singapore Armed Forces (SAF) currently have about 71,600 active duty personnel and 950,000 reservists. The military boasts over 200 tanks, more than 2,000 armored fighting vehicles, roughly 50 self-propelled guns, 260 towed-artillery, and 18 multiple-launch rocket systems. Singapore's air power consists of approximately 120 fighters, 63 transport aircraft, 45 trainer aircraft, and about 70 helicopters, including 17 attack helicopters. SAF naval platforms include 6 frigates, 6 corvettes, 6 submarines, 12 coastal defense craft, and 4 mine warfare vessels.³⁷¹

SAF force posture relies primarily on staying at least one, if not two, technological generations ahead of its neighbors. In this way it follows a model similar to Israel's, involving constant upgrades to keep an edge over larger neighbors, such as Indonesia and Malaysia, who can field more numerous forces. Singapore is a top buyer of U.S. platforms in the region, but it is happy to acquire the best equipment for its mission needs, regardless of country, as long as they are NATO-compatible. As a result, both European and Israeli firms are major suppliers to the SAF. Singapore acquires fire control systems, radars, missile control systems, and other electronics from Israel, though not major platforms.³⁷² Singapore has an extremely sophisticated acquisition process and often procures platforms from foreign defense companies that it then fills with indigenously built systems.

Recognizing its demographic challenges, the Singaporean military is focused on boosting its autonomous capabilities. It is also gearing its acquisitions and indigenous defense industry toward greater mechanization in order to operate platforms with smaller crews than usually required. For instance, Singapore Technologies Engineering, the city-state's homegrown defense manufacturer, produced the Pegasus self-propelled howitzer that only requires a crew of three.³⁷³ Singapore Technologies Marine, meanwhile, has developed the Independence-class Littoral Mission Vessel, smaller, but roughly equivalent to a U.S. Navy LCS.³⁷⁴

The Singaporean navy has been expanding both the number of its ships and the size of those vessels. It is undertaking blue-water missions for the first time, such as Gulf of Aden anti-piracy patrols, and expects to take part in more multilateral exercises abroad. In recognition of its growing role in HA/DR and maritime security, Singapore is expected to announce the development of

an indigenously produced helicopter carrier known as a Joint Multi-Mission Ship by the end of the decade.³⁷⁵

Security Cooperation with the United States

The United States maintains a significant rotational military presence in Singapore. The United States is the largest user of Changi Naval Base (followed by Japan), which provides the only facilities in Southeast Asia capable of servicing U.S. aircraft carriers. More than 100 U.S. Navy ships and between 800 and 1,000 U.S. Air Force aircraft transit through Singapore each year.³⁷⁶ Under current plans, up to four U.S. Littoral Combat Ships are also scheduled to be based in Singapore. Without the access provided by Singapore, the U.S. military would not be able to operate nearly as effectively in the region.

Singapore and the United States signed a memorandum of understanding on U.S. military access to the city-state 25 years ago and a Strategic Framework Agreement 10 years ago. The two countries signed a new Enhanced Defense Cooperation Agreement in late 2015, opening the possibility of new forms of cooperation, though no radical changes to U.S. force deployment are on the horizon.³⁷⁷ On the heels of that agreement, Singapore announced that it would allow the rotational deployment of U.S. P-8s to the city-state. Major arms purchases, such as the Singaporean air force's upgrading of its F-16 fleet and potential purchase of F-35 fighters, are likely to increase defense ties and strengthen interoperability.³⁷⁸ In addition, Singapore conducts training activities with the U.S. Air Force in the United States, significantly increasing integration between the two militaries.

Capability Gaps and Shortfalls

As Defense Minister Ng remarked, demographics represent one of the greatest long-term threats to Singapore's military readiness and force posture. Reliance on the National Service scheme appears unsustainable given demographic trends. Singapore's birth rate remains below the replacement rate, which has resulted in fewer citizens becoming eligible for conscription each year.³⁷⁹ In the 1980s, the army could notionally field five divisions—one active and four reserves.³⁸⁰ That overall number has shrunk to four. The military has begun to experiment with allowing women and first-generation permanent residents to volunteer to serve, and the navy in particular is opening up opportunities to mid-career level civilians.³⁸¹ However, a more radical rethinking of force structure and enlistment will be needed as demographic pressures grow.

Singapore's military, and popular support for it, was built around the mission of confronting an external threat from Indonesia and Malaysia in the years after independence. Particularly concerning was the possibility of having to fight a short war with Malaysia to ensure access to fresh water.³⁸² The military's mission has changed drastically in recent decades as its two neighbors have become partners. It is likely that citizens will begin to question the current force structure, and the need for compulsory national service, in the years ahead given the increasing perception that Singapore does not face an existential threat from abroad.³⁸³ Whether the government will be able to meet those demands is an open question. The defense budget remains highly secretive and is not debated publicly or in Parliament. The National Service scheme is considered sacred and is not discussed even by opposition parties.

It must also be recognized that the Singapore Armed Forces have never engaged in combat operations. On those occasions SAF troops have deployed abroad, they have done so in a support capacity. On the other hand, Singaporean troops remain some of the best trained and most capable in the world, engaging in extensive joint training with partners around the globe. However, were the SAF to engage in combat and suffer casualties, the effect on morale and public support for military action would be a major unknown.

Singapore's military is the region's most advanced, most capable, and best trained, despite its relatively small size. The SAF play an increasingly important role in combatting nontraditional security threats in the region and beyond, including in HA/DR, SAR, and maritime security. When it comes to offering concrete support, Singapore is perhaps the greatest proponent of a robust and sustained U.S. military presence in Southeast Asia. The access and cooperation provided by the city-state helps to make possible critical U.S. military operations in the region.

INDONESIA

Indonesia is an emerging player in the regional security environment. Like many militaries in the region, the Indonesian National Armed Forces (TNI) are still in the process of shifting their focus from internal security to external defense. For most of its post-colonial history, the top mission of the military was preventing the breakup of the nation by separatists in Aceh, the Malukus, Papua, and Timor-Leste. In the last 15 years, political solutions have been found for all of those conflicts except Papua, which continues to see chronic low-level violence. This has left most of Indonesia's forces without a specified mission.

Political and military leaders in Indonesia are awakening to the unique threats and opportunities of being an archipelagic nation, especially one situated between the Indian and Pacific Oceans along the world's busiest trade routes. Under previous administrations, Indonesia joined Malaysia, Singapore, and Thailand in coordinated patrols of the Malacca Strait. It also began to play a larger role in regional maritime security, SAR, and HA/DR exercises and training, including Multilateral Naval Exercise Komodo in waters off the Riau and Natuna Islands in early 2014.³⁸⁴

Security Outlook

In October 2014, newly inaugurated president Joko "Jokowi" Widodo declared a whole-of-government policy to transform Indonesia into a "global maritime nexus."³⁸⁵ After nearly a year, the maritime nexus doctrine seems more a catchall phrase than a targeted policy. Its most visible results have been a renewed, and some would say counterproductive, effort to combat illegal fishing in Indonesia's littoral waters. Nevertheless, Jakarta has committed, on paper at least, to boost naval capacity to protect sea lines of communication, defend freedom of navigation, bolster maritime domain awareness, and better respond to crises at sea. In a promising move, the Indonesian government also formed its first coast guard in 2014, though it remains embryonic.³⁸⁶

One area gaining increasing attention in Jakarta is the South China Sea. Indonesian leaders have grown more forceful in publicly condemning Chinese claims after years of insisting that Indonesia had no dispute with China, despite the overlap between Beijing's nine-dash line and Jakarta's

claimed exclusive economic zone, which includes the continental shelf north of the Natunas. Former TNI chief Moeldoko published a surprising article in April 2014 admitting China appeared to be claiming part of Indonesia's maritime entitlement as Chinese territory. In response, he declared that Indonesia would "strengthen its forces on Natuna" and "prepare fighter planes to meet any eventuality stemming from heightened tensions on one of the world's key waterways."³⁸⁷ More recently, Jokowi commented just ahead of his March 2015 visits to Tokyo and Beijing that the nine-dash line has "no basis in any international law."³⁸⁸

The other major Indonesian military concern is terrorism. After largely defanging the regional threat posed by Jemaah Islamiyah in the decade following the 2002 Bali nightclub bombings, Indonesian authorities are now grappling with radicalization of domestic ISIL sympathizers and the potential return of many Indonesian citizens who have joined the fight in Iraq and Syria. President Jokowi has identified ISIL as a top concern.³⁸⁹ Hundreds of Indonesians are believed to be fighting for ISIL in Iraq and Syria, alongside smaller contingents of Bruneians, Filipinos, and Malaysians. More worrying, authorities say that ISIL supporters are now present in almost half of Indonesia's provinces. Prominent militants, including the country's most-wanted terrorist, Santoso, have sworn allegiance to the group.³⁹⁰ Santoso leads a band of a few hundred supporters in the jungles of Poso on Sulawesi. His continued evasion of security forces has led to calls from the military to take a greater role in counterterrorism operations—a development that many outside analysts find potentially troubling.³⁹¹

Current and Planned Force Posture

Despite their changing mission, the TNI remains disproportionately weighted toward the army at the expense of the air force and navy, which too often rely on outdated platforms and suffer from poor maintenance and support. The Indonesian military has about 476,000 active duty personnel and another 400,000 reserves. The ground forces include 468 tanks, over 1,000 armored fighting vehicles, 37 self-propelled guns, 80 towed artillery pieces, and 86 multiple-launch rocket systems. The TNI fields 30 fighter aircraft, 52 fixed-wing attack aircraft, 187 transport aircraft, 104 trainers, and 148 rotary-wing aircraft. The navy and coast guard boast 6 frigates, 26 corvettes, 2 submarines, 21 coastal defense craft, 12 mine warfare ships, and about 100 other vessels.³⁹²

In his first year in office, Jokowi committed to boosting defense spending in order to help Indonesia play a larger regional role, especially in the maritime realm. The country's Mid-Term Development Blueprint, produced in 2014, calls for an increase in spending to 1.5 percent of GDP by 2019, from the current 0.9 percent.³⁹³ This ambitious target would require the defense budget to increase approximately 16 percent each year assuming GDP growth remains above 5 percent. The budget did increase 16 percent in 2015, to \$8.2 billion.³⁹⁴

Despite the commitment to improve naval and air capabilities, the military budget has yet to shift significantly away from the army. Indonesia's recent procurement has remained unbalanced, with the army continuing to play the leading role in military strategy and planning. In November 2013, the Defense Ministry announced the finalization of a \$290 million deal with Germany for the delivery of 103 Leopard 2 main battle tanks, 42 upgraded Marder 1A3 infantry fighting vehicles, and 11 armored recovery and engineering vehicles, along with logistical support and

ammunition.³⁹⁵ The procurement seemed out of step with both Indonesia's stated modernization goals and the missions its military is most likely to face in the future.

More recently, government officials including President Jokowi and newly appointed TNI Chief of Staff Gatot Nurmantyo have committed to focus military modernization efforts on the navy and air force.³⁹⁶ The crash of a C-130 transport plane in a residential district of Medan on Java has provided renewed impetus to modernize the air force.³⁹⁷ Jakarta is preparing to decommission old platforms, like fighters and transport craft, and in the wake of the C-130 crash has said it will seek to procure new rather than refurbished platforms.³⁹⁸ One major goal of the Indonesian air force is to replace its fleet of F-5 fighters. It is considering F-16s from the United States, along with Russian Su-35s, Eurofighter Typhoons, and JAS 39 Gripen. This new generation of fighters would focus on interdiction and ground support missions more than air superiority.³⁹⁹

The navy is expected to focus in large part on patrolling Indonesia's exclusive economic zone over the next 5 to 10 years, while the coast guard develops. Once the coast guard is able to operate farther afield, then the navy will be able to shift to other missions.⁴⁰⁰ Unfortunately, the navy itself is limited in its capacity to operate beyond Indonesia's territorial seas, so the feasibility of this plan is in question. There is continued discussion within the government on boosting the coast guard's procurement budget, which could help speed the takeover of responsibilities from the navy.⁴⁰¹ The Jokowi administration has also identified combatting illegal fishing as a top priority for both military and law enforcement resources. That mission will likely be a priority for force structure and planning over the next 5 to 10 years. The government plans to stand up the newly created coast guard by transferring smaller patrol vessels from the navy. This has met some resistance from naval planners who expect new acquisitions of their own in exchange.⁴⁰²

An increasing focus of the navy and air force is boosting domain awareness and ability to respond to crises in Indonesian waters and airspace in the South China Sea. To this end, the military is upgrading its airbase in the Natunas to handle the country's more advanced fighters.⁴⁰³ It is also improving surrounding naval and airbases in the Riau Archipelago and Kalimantan so that larger ships and aircraft can operate in the area continuously.⁴⁰⁴ The navy and air force are interested in acquiring aerial refueling tankers, logistics ships, and amphibious assault ships to boost power projection and rapid response capabilities.⁴⁰⁵ The air force also wants to procure airborne early warning systems.⁴⁰⁶

Policymakers have begun to expand Indonesia's arms procurement by seeking new partners. Russia has long been the largest overall provider of arms to Indonesia, but the rapid growth in the U.S.-Indonesia security relationship has shifted that balance. The United States was the largest provider of Indonesian weapons systems in 2013, accounting for 19 percent of its acquisitions. This was followed by Russia (14 percent), France (13 percent), Germany (9 percent), and the United Kingdom (9 percent).⁴⁰⁷ China is a growing source of arms, including missiles, but not major platforms.⁴⁰⁸ Indonesia also remains committed to its indigenous defense industry, which produced 11 percent of the country's weapons in 2013.⁴⁰⁹ Yet for the most part, Indonesia's defense industry has met with little success in prestigious projects to produce high-end platforms. One major exception is the production of armored personnel carriers, for which Indonesia has effectively cornered the market in United Nations peacekeeping operations.⁴¹⁰

Security Cooperation with the United States

U.S.-Indonesia military-to-military relations have improved markedly, though Jakarta still punches below its weight. Bilateral security ties deteriorated in the 1990s amid abuses in Timor-Leste and the military's role in the violence surrounding the fall of long-time president Suharto in 1998. They hit their lowest point in 1999 when Indonesia's military supported pro-Indonesia militias who committed a wave of attacks in Timor-Leste after the Timorese voted to secede. That incident resulted in the passage of the Leahy amendment by the U.S. Congress, banning military training and equipment transfers to armed forces guilty of human rights abuses.⁴¹¹

Bilateral ties have improved dramatically over the last decade, fueled by Indonesia's democratic consolidation, the military's pullback from involvement in politics, and post-9/11 counterterrorism cooperation. The United States resumed the International Military Education and Training program for Indonesia in 2002 and normalized military ties in 2005, removing the embargo on military sales. In 2010, the United States eased its ban on cooperation with the Indonesian special forces, the *Kopassus*, mandated by the Leahy amendment.⁴¹² That same year, President Barack Obama and Susilo Bambang Yudhoyono signed a bilateral comprehensive partnership agreement that established a new era of cooperation in security as well as diplomatic, economic, and people-to-people relations.⁴¹³

Capability Gaps and Shortfalls

Despite the drive to modernize and adjust to new, externally oriented missions, the Indonesian military remains unbalanced in favor of the army. The TNI's weaknesses in maritime domain awareness is concerning. The area north of the Natunas, where Indonesia would perhaps be most likely to face Chinese coercion, is difficult for the TNI to monitor. The Indonesian government realizes that it cannot afford to fill this gap with new ships alone. It is looking for creative solutions such as unmanned aerial systems and satellites, but even if Indonesia vastly improves its maritime domain awareness, the coast guard and navy still lack needed capacity to respond.

Indonesia also lags behind many of its neighbors in interoperability with the United States and other partners. This problem is abating as Indonesian forces become more comfortable with bilateral and multilateral exercises. For instance, U.S.-Indonesia naval exercises are not only becoming more frequent but are also expanding their scope from search and rescue and boarding to combat exercises. As of 2012, there were about 200 military-to-military interactions between Indonesia and the United States annually, including the bilateral Garuda Shield and CARAT exercises.⁴¹⁴ More than 500 Indonesian military officers studied in the United States in 2014, and Foreign Military Sales reached about \$1.5 billion.⁴¹⁵

The Indonesian military is also boosting cooperation with Australia, European states, and other ASEAN members. Indonesia-Japan cooperation remains embryonic, but Jokowi signed a bilateral agreement on defense industrial cooperation during his March 2015 visit to Tokyo.⁴¹⁶ Yet agreement will likely require several years to implement.⁴¹⁷ Exercises with Japan remain infrequent and low level, but should grow in the future. China-Indonesia cooperation likewise remains limited, in part because the two militaries do not share doctrines and systems, but also because of tensions due to South China Sea disputes.

Indonesia's air force and navy remain reliant on legacy systems that are becoming harder to maintain. This is only made worse by the relatively low priority, in both funding and planning, given to logistics and support systems as well as the hodgepodge of Russian and NATO-compatible systems it has acquired. Indonesia could have trouble supporting new platforms because of a lack of technical capacity. The Indonesian military also struggles to link acquisitions to real mission needs, as evidenced by the Leopard 2 procurement. The United States has sought to address this issue through the expanded Defense Institutional Reform Initiative for Indonesia, which focuses on assisting with strategic planning, including acquisitions, logistics, and maintenance.⁴¹⁸

Another long-term problem is the remaining prevalence of corrupt practices within the Indonesian military. When the military stepped back from its role in private enterprise following the fall of Suharto, it also lost a major source of funding. The resulting welfare gap was not replaced by a commensurate increase in the military budget, driving many personnel to resort to unethical behavior to augment salaries and support services.⁴¹⁹ The government has begun to address this challenge. The defense budget has increased significantly since 2008, with the majority of that increase going toward troop welfare.⁴²⁰ The United States is also working to help ameliorate this concern by offering significant assistance in professionalization training.⁴²¹

Indonesia's political and military leaders have recognized the need to transition toward a more externally focused force and to modernize the TNI's woefully poor naval and air capabilities. Nonetheless, institutional inertia, budget constraints, and a long history of poor strategic planning will constrain the speed and success of that shift. Nevertheless, Indonesia's sheer size means that its importance in the regional security environment will only grow. Although progress is likely to prove uneven, continued focus by the United States on this key partnership could yield significant returns in the years ahead.

VIETNAM

Vietnam has stepped up its military relations with the United States in the past six to eight years, thanks in large part to growing tensions with China in the South China Sea. During the 1960s and 1970s, when the Vietnamese communists were fighting against South Vietnam and the United States, Hanoi's closest military ties were with the Soviet Union. In recent years, Vietnam has sought to diversify its relations by increasing military ties with India, Japan, and its Southeast Asian neighbors.

Security Outlook

The Vietnamese military is controlled by the Communist Party and its civilian government, but senior military officers have outsize roles in both bodies thanks to their positions within the ruling Politburo and Central Committee. Only Minister of Defense Lt. Gen. Phung Quang Thanh, 66, is a member of the Politburo, but 13 of 165 members in the Central Committee actively serve in the upper ranks of the military. Thanh is widely expected to step down at the next party congress in early 2016, due to a combination of poor health and perceptions that he is too close to China despite its assertiveness in the South China Sea.⁴²²

Since 2009, when China submitted a nine-dash line map to the United Nations and asserted its control over much of the South China Sea, Vietnam has begun to see the maritime domain as its most important security challenge. In 1988, China seized Johnson South Reef from Vietnam after a brief skirmish in which more than 70 Vietnamese troops died. Chinese ships cut the seismic cables of Vietnamese oil exploration vessels on at least two occasions in 2011 and 2012.⁴²³ In recent years, Chinese authorities have repeatedly arrested Vietnamese fishermen, particularly around the Paracel Islands, and charged them with illegally fishing in Chinese territory.⁴²⁴

In May 2014, a Chinese state-owned company moved the massive *Haiyang Shiyou 981* oil exploration rig into a location between the Paracel Islands and Vietnam's coast, which Hanoi claims is its exclusive economic zone. The arrival of the rig sparked the biggest dispute between Vietnam and China in years. The incident prompted almost daily clashes between Chinese vessels trying to protect the rig and Vietnamese boats trying to enter the 12-mile perimeter China had imposed. The clash spawned protests in Vietnam, some of which turned violent and led to the deaths of several Chinese. Taiwanese, Singaporean, and Korean factories and workers were also attacked in the confusion.⁴²⁵ Vietnamese party leaders complained that they were unable to contact Chinese party leaders during the incident.⁴²⁶

Current and Planned Force Posture

In the 1970s, Vietnam invested heavily in its army to defeat the U.S.-backed regime in the south, to overthrow the brutal Khmer Rouge regime in Cambodia, and to defend against China's border attack in 1979. However, as tensions have mounted in the South China Sea, Vietnam has begun emphasizing modernizing its navy and air force and building a coast guard.

In general, analysts believe that Vietnam's deterrence strategy is not designed to confront China in a conflict, but rather intended to create some risks for the Chinese navy if it decided to resort to force.⁴²⁷ Nonetheless, Hanoi's ongoing weapons acquisitions demonstrate that Vietnam is taking major steps to boost its capacity to resist Chinese activity in the maritime area around Vietnam. It has developed an A2/AD strategy that integrates land-based artillery and missile systems; Su-30 jet fighters, fast attack craft, corvettes, and frigates armed with anti-ship missiles; and Varshavyanka-class submarines. These systems should make it possible for Vietnam to impose considerable costs on China within a 200-nautical-mile band along Vietnam's coast.⁴²⁸ Beyond that, Vietnam also has the capacity to strike China's naval base near Sanya on Hainan Island and military facilities on Woody Island. The land-based Bastion cruise missile system is intended in part to deter China from deploying warships in Vietnam's waters or blockading Vietnamese islands in the South China Sea.⁴²⁹

Hanoi has worked to increase its maritime domain awareness capabilities. Much of the capability has until recently been provided by fishing vessels because Vietnam did not have enough navy and coast guard vessels to monitor events in the South China Sea.⁴³⁰ Vietnam's maritime efforts tend to be led by the coast guard. Hanoi views the coast guard as less escalatory than the navy, which is seen more as a reserve force.⁴³¹ Vietnam also augmented its surveillance capabilities through the purchase of three CASA C-295 transport aircraft in 2014.⁴³²

Much of Vietnam's military equipment has traditionally come from Russia, but in recent years it has begun exploring buying hardware from South Korea, Japan, Singapore, Israel, and the United States. Hanoi's military procurement budget is relatively small, with an estimated \$1.4 billion in signed procurement contracts in 2014.⁴³³ Major orders include three Varshavyanka-class submarines from Russia, with three more on order. So far, they are engaging primarily in patrols along Vietnam's coast.⁴³⁴ Submarine crews receive training in undersea warfare doctrine and tactics at the Indian Navy Ship (INS) *Satavahana* submarine center. Analysts differ on how quickly they think the navy will be able to absorb the submarines and use them to create a credible deterrent against China.⁴³⁵ The navy also has 11 older corvettes and five frigates armed with equipment dating back to the Soviet period. Vietnam also has four *Molniya*-class guided missile frigates, one BPS-500 corvette, two *Gepard 3.9* guided missile stealth frigates, two Dutch-built Sigma-class frigates, and six *Svetlyak*-class fast attack craft armed with anti-ship missiles.⁴³⁶

Security Cooperation with the United States

U.S. Secretary of Defense Ashton Carter visited Hanoi in June 2015 and signed a joint vision statement updating a 2011 memorandum of understanding that will guide future military cooperation between the two countries and possibly lead to co-production of weapons systems.⁴³⁷ As part of the expanding ties, Carter said the United States would help Vietnam set up a center to train troops for United Nations peacekeeping missions. Carter also visited a navy and coast guard headquarters in Haiphong and reiterated Secretary of State John Kerry's earlier pledge of \$18 million to help Vietnam buy U.S. patrol boats.⁴³⁸ The two countries will also step up HA/DR exercises, an area of cooperation less likely to create concerns in China.⁴³⁹

In October 2014, Washington partially lifted the U.S. ban on military hardware sales to Vietnam in place since the end of the war in 1975. Hanoi is now allowed to purchase lethal maritime security equipment on a case-by-case basis.⁴⁴⁰ Vietnam, however, has been slow to buy U.S. technology partly due to the sophistication and cost of U.S. systems, the long and complicated U.S. procurement process, and concerns that purchases could get ensnared in human rights debates in the U.S. Congress. Vietnamese officials also say that for Washington to maintain part of the weapons sales ban suggests that the United States is not yet living up to the comprehensive partnership launched by the two countries in 2013.⁴⁴¹ Nevertheless, the two sides established a joint working group including the U.S. defense attaché, other embassy officials, and Ministry of Defense representatives to discuss possible future Vietnamese military acquisitions from the United States. Carter discussed joint U.S.-Vietnam patrols in the South China Sea to help boost Vietnam's capabilities, but officials in Hanoi were not ready to approve his proposal.⁴⁴²

Most U.S.-Vietnam cooperation is now focused in the maritime domain, Vietnam's top priority. One recent army-to-army joint exercise also involved urban search and rescue missions.⁴⁴³ Washington has recently appointed a coast guard liaison officer to Hanoi and Japan, which is also providing coast guard vessels to Vietnam, plans to follow suit.⁴⁴⁴ An attempt to buy coast guard vessels demonstrated the complexity of U.S. military sales to Vietnam. Understanding that the Vietnamese were interested in buying some 110-foot vessels, the Defense Department pushed for rapid clearance, only to have the government of Vietnam suspend discussions over

the deal.⁴⁴⁵ Similarly, Washington provides International Military Education and Training funding for Vietnamese officers, but Hanoi cannot find enough candidates to meet the minimum standards of working level proficiency in English.⁴⁴⁶

Regarding U.S. military posture, Vietnam allows Washington only one navy ship visit a year. The U.S. Navy ship visit to Danang in early 2015 was a step up from previous exchanges because more officer exchanges, community activities, and a joint search and rescue efforts were permitted. The visit also lasted longer than previous visits.⁴⁴⁷

Capability Gaps and Shortfalls

Maritime domain awareness is one of the biggest challenges Vietnam faces today in the South China Sea. Vietnam lacks the surveillance aircraft, navy and coast guard vessels, and radar to monitor activities off its coast. The country's limited budget means that it likely will take some years before Hanoi can address these challenges. Cooperation with other states could help to lessen the maritime domain awareness needs in the region. Vietnam and the Philippines, another disputant in the South China Sea, held their first bilateral defense policy dialogue meeting in April 2015.⁴⁴⁸ New Delhi extended Vietnam a \$100 million export credit earlier this year to purchase defense equipment from India.⁴⁴⁹

The United States should continue to explore avenues to help Vietnam develop maritime domain awareness, including through training of military personnel. Washington should also continue to pursue opportunities for joint naval exercises. In addition, U.S. leaders could provide more training for Vietnamese acquisition officers so they better understand the procedures for the purchase of military equipment in the United States. Finally, Washington could offer more English language training to officers so that more have the qualifications to join IMET training courses.

SECURITY CONTRIBUTIONS OF REGIONAL ORGANIZATIONS

Several regional organizations contribute to security and stability in the PACOM AOR, particularly in Southeast Asia. The most critical is the Association of Southeast Asian Nations, as well as other ASEAN-based organizations, including the ASEAN Regional Forum (ARF), the East Asia Summit, and the ASEAN Defense Ministers' Meeting Plus. The Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia also plays an important role in regional security.

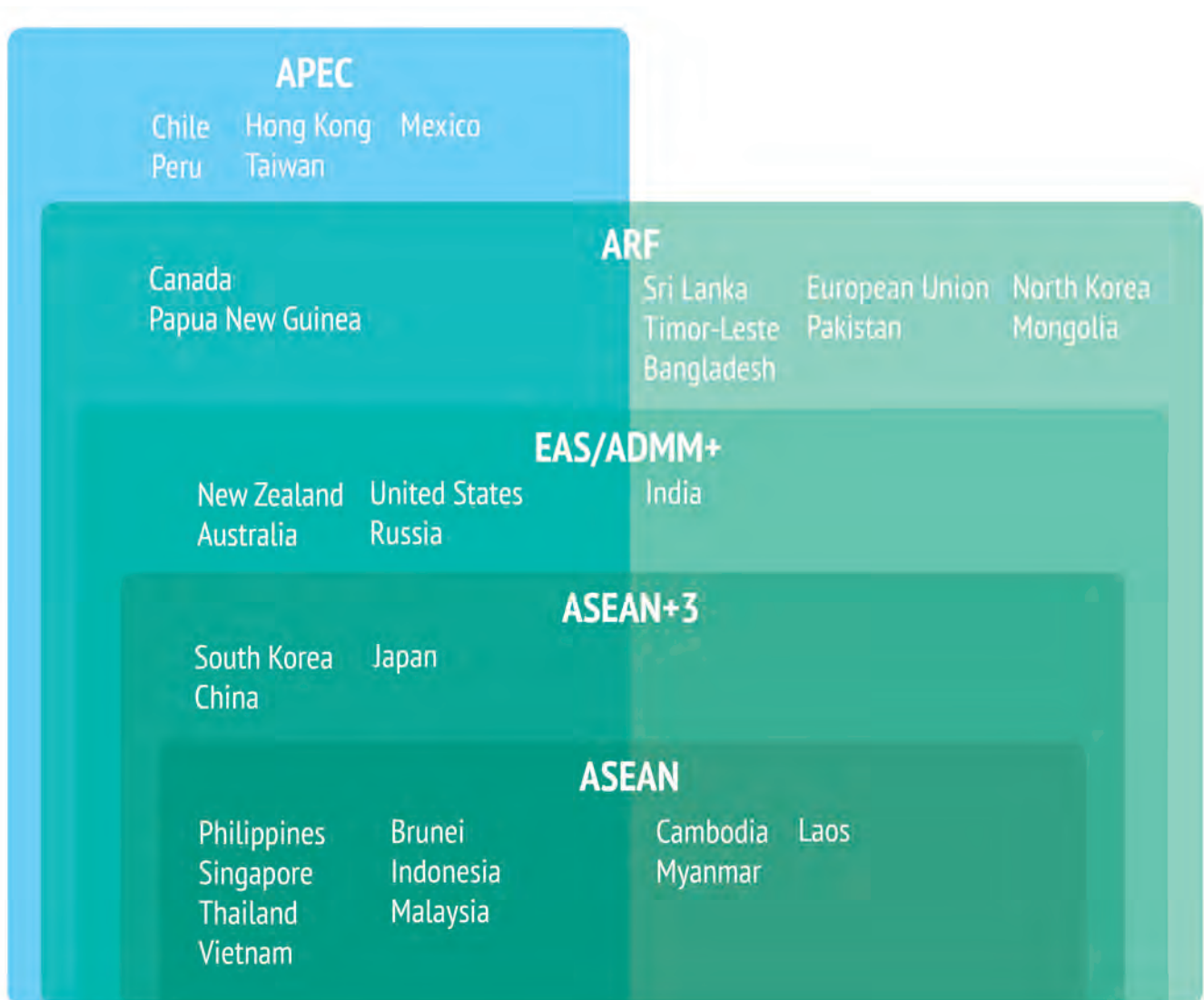
The major security concerns of these organizations are terrorism, the proliferation of weapons of mass destruction, piracy, maritime security, HA/DR, and the South China Sea disputes. ASEAN, ASEAN organizations, and ReCAAP all demonstrate a willingness to contribute to regional efforts to mitigate these risks. Their primary impediments to doing so, however, are the member states' and organizations' lack of military and coast guard capabilities, a reticence to move beyond confidence-building measures into sensitive areas of cooperation, and an inability to coordinate effectively.

Association of Southeast Asian Nations

As part of its efforts to strengthen regional institutions in East Asia, the United States has augmented its military relationship with ASEAN. In 2015, the Defense Department decided to send a

permanent defense adviser to the U.S. Mission to ASEAN to improve coordination and information sharing for HA/DR and maritime security. Announced alongside the Southeast Asia Maritime Security Initiative, this appointment may augment U.S. efforts to build partner capacity in the maritime domain and to do so through ASEAN.⁴⁵⁰ These efforts build upon other recent initiatives to strengthen the relationship between ASEAN and the U.S. military. PACOM stationed a liaison officer at the U.S. Mission to ASEAN for the first time in 2011. This position allows for greater information sharing with the Department of Defense and other U.S. agencies on multilateral Southeast Asian security issues and deeper engagement in ASEAN defense-related forums. The officer has arranged informal dialogues between the ASEAN Defense Ministers' Meeting (ADMM) and the U.S. secretary of defense as well as other ASEAN-related activities for PACOM.⁴⁵¹ The 10th EAS underscored the imperatives in promoting maritime safety and security and adopted the EAS Statement on Enhancing Regional Maritime Cooperation in the Asia-Pacific.

FIGURE 13: Participation in Major Regional Organizations



ASEAN Regional Forum

The 27-member ASEAN Regional Forum has been host to dialogue and confidence building on several risks relevant to PACOM. ARF's functional working groups include dialogues on counterterrorism, disaster relief, maritime security, and nonproliferation and disarmament, with its HA/DR group being the most robust.⁴⁵² Several ASEAN states have expressed a strong interest in adding a group on cyber security.⁴⁵³

ASEAN Defense Ministers' Meeting Plus

Since its first meeting in 2010, U.S. defense leaders have expressed strong support for ADMM-Plus and its efforts to facilitate cooperation in the areas of maritime security, counterterrorism, HA/DR, peacekeeping, and military medicine. ADMM-Plus includes all 10 members of ASEAN and their 8 most important dialogue partners—Australia, China, India, Japan, New Zealand, Russia, South Korea, and the United States. ADMM-Plus convenes expert working groups (EWGs) in the five areas listed above, and added a sixth EWG on Humanitarian Mine Action in 2013.⁴⁵⁴ In the same year, ADMM-Plus also began to hold military exercises in the areas of HA/DR, military medicine, counterterrorism, and maritime security.⁴⁵⁵ The group also conducted a table-top exercise on peacekeeping operations. The United States participated in all of these exercises and even co-hosted the counterterrorism exercise with Indonesia. The United States sees its participation and funding in these exercises as one component of the rebalance.⁴⁵⁶ The United States was a proponent of increasing the frequency of ADMM-Plus meetings to occur biennially as opposed to every three years—a change that was embraced by the group.

In 2014, then-Secretary of Defense Hagel hosted the 10 ASEAN defense ministers in Hawaii for a meeting called the U.S.-ASEAN Defense Forum. Over two days, the 11 defense leaders and the secretary general of ASEAN participated in in-depth discussions of defense challenges throughout the Asia-Pacific, toured U.S. assets such as an amphibious ship, and various aircraft and ground vehicles. The two-day event was seen as contributing to closer relations between the United States and ASEAN countries on defense issues, and provided a venue to directly explain to ASEAN countries' defense leaders the type of partnership the United States seeks with their countries. The meeting has since been replicated by China.

East Asia Summit

The East Asia Summit is a leaders-level meeting involving the same 18 nations as the ADMM-Plus. The United States began attending the EAS in 2011, the same year as Russia, after acceding to the ASEAN Treaty of Amity and Cooperation. The Obama administration has made strengthening the EAS part of a larger strategy to build more robust ASEAN-based regional architecture—a key component of the rebalance. As such, President Obama has attended all but one EAS meeting since the United States' accession. Paired with the U.S.-ASEAN Summit, during which the U.S. president meets alone with the 10 ASEAN heads of state, the EAS has the potential to be the premier venue for leader-level regional planning.

Expanded ASEAN Maritime Forum

In an effort to raise the level of maritime security cooperation in the region, the United States helped coordinate the first Expanded ASEAN Maritime Forum (EAMF) in Manila in 2012. In its first three years, the forum has served as a valuable venue for senior officials and experts from the 18 EAS member states to discuss maritime issues at the Track 1.5 level. It has also helped revitalize the moribund ASEAN Maritime Forum, which could prove valuable for promoting confidence building and greater maritime security cooperation in ASEAN.

Regional Cooperation Agreement on Combating Piracy and Armed Robbery

ReCAAP provides for information sharing among members to promote cooperation against non-state threats. ReCAAP's Information Sharing Center in Singapore aims to facilitate information exchange, shorten response times, and improve coordination, including on joint counterpiracy exercises.⁴⁵⁷ The United States formally joined ReCAAP in 2014 and interfaces with the organization through U.S. Coast Guard–Rescue Coordination Center Alameda in California, as well as through its Coast Guard Maritime Liaison Unit in Yokohama, Japan, and Singapore.⁴⁵⁸ U.S. policymakers have stated that Washington's membership in ReCAAP is part of the rebalance, and contributes to the U.S. goal of strengthening regional institutions.⁴⁵⁹ Coast guard officials have noted that U.S. ReCAAP membership improves security for U.S.-flagged vessels in high-risk areas, such as the Strait of Malacca.⁴⁶⁰

Architecture Gaps and Shortfalls

The bulk of functional security cooperation under ASEAN takes place within the ARF framework, particularly on HA/DR. More robust cooperation on counterterrorism has also become palatable as states grow increasingly concerned about ISIL's threat to the region. For the ARF to contribute substantially to PACOM's objectives, it will need to move beyond confidence building to preventive diplomacy and conflict resolution. The ARF member states agreed in 2013 to shift the organization's functional focus from confidence building to preventive diplomacy, but there is little evidence that this has resulted in substantive change. Many obstacles are political, and include the fact that China often drives functional group agendas. Concern about upsetting China is the primary impediment to adding cyber security to the ARF agenda, despite strong support from Singapore and others.

It is too early to assess the ability of ADMM-Plus to contribute to PACOM's efforts in Southeast Asia. If the group can move beyond its current emphasis on confidence building to a focus on preventive diplomacy and more multilateral training exercises in all six EWG areas, ADMM-Plus would be making a significant contribution to PACOM's efforts to mitigate nonstate threats and South China Sea risks in Southeast Asia.

To date, the EAS agenda has explicitly focused on six priority areas, only one of which (natural disaster management) is of immediate consequence to PACOM's mission.⁴⁶¹ However, Indonesia has been pushing for the inclusion of maritime security as a seventh, which is gaining support from many other EAS members. More importantly, the agenda at EAS meetings has been broader than the priority areas would suggest, dealing with high-profile security issues such as the South China Sea and the threat from ISIL.

There is a great deal of overlap within the hodgepodge of ASEAN institutions, especially the functional working groups under the ARF and the EWGs under the ADMM-Plus. This has led to a desire among members to streamline organizational structures. An effort was launched in 2015 to strengthen the EAS, with a proposal from the ASEAN Permanent Representatives to build more direct linkages between the ARF, the ADMM-Plus, the EAS, and the Expanded ASEAN Maritime Forum. The eventual goal is for the senior official and ministerial meetings within the EAS and EAMF to feed into, and take their direction from, the EAS.⁴⁶² Unsurprisingly, China has been a barrier to this streamlining effort, as it still prefers to see the EAS focus on functional cooperation rather than serving as a leader-level forum for discussing critical issues.⁴⁶³

ReCAAP's efforts have had mixed results, as there was an increase in reported piracy between 2009 and 2012.⁴⁶⁴ ReCAAP has also held major conferences that have included limited participation by U.S. officials.⁴⁶⁵ Additional impediments to its efficacy include the fact that Malaysia and Indonesia, both critically situated near the Strait of Malacca, have resisted membership.⁴⁶⁶ Many of the member states themselves have limited maritime domain awareness capabilities, which constrains information sharing.

Building stronger security architecture in the Asia-Pacific is an important long-term interest for the United States. It offers the best chance of regional security in the face of inevitable competition between a rising China, the United States, and other players like India and Japan. ASEAN is the best vehicle to drive institution-building efforts, as few other groupings can play the role of honest broker in the region. Forty-eight years after its establishment, ASEAN has proven capable of making progress, albeit incremental. That slow pace should also be expected in the realm of security cooperation. Nonetheless, it is worthwhile for the United States to put in the effort and patience required to support ASEAN-led regional architecture.





5 | ANALYSIS OF CAPABILITY GAPS
AND SHORTFALLS

U.S. military posture and ally and partner capabilities and relationships represent two of the three defense pillars of the Asia-Pacific rebalance. The third pillar is ensuring that the United States has the right capabilities for the range of challenges it faces. Those capabilities take the form of operational concepts married with the world's best-trained forces and the military equipment they require.

China presents the most significant challenge to U.S. regional interests, today and into the future. In particular, China's military investments in A2/AD capabilities heighten concern in the region about China's concept of peace and security. The goal of A2/AD systems is to restrict or outright deny an attacker freedom of entry or maneuver. China's A2/AD investments include space, cyber, EW, blue-water naval capability, long-range and anti-ship missiles, fighter and stealth aircraft, and C4ISR capabilities. These serve as powerful reminders of its efforts to keep the United States out of the region when it desires. These capabilities increase risk to U.S. installations and forward-operating forces in the Western Pacific, to U.S. allies and partners, and to the freedom of access to international airspace and waters on which the U.S. economy depends. Absent a major operational or technology breakthrough, substantial risk remains over the mid to long term that China's capabilities will allow it to threaten U.S. interests throughout Asia.

Leaders both inside and outside of DOD have acknowledged this reality. The Defense Department has developed the Air Sea Battle (ASB) Concept, the Joint Operational Access Concept (JOAC), and is now developing the Joint Concept for Access and Maneuver in the Global Commons (JAM-GC). The concepts embedded in JAM-GC are applicable to a confrontation with any highly capable adversary—of which China is the leading example. Taken together, these concepts provide an initial framework for how to think about countering China's A2/AD architecture.

Solid as these initial concepts are, the transition from concept to implementation has been slow. In some cases, investments have not been sufficiently aligned with strategy. Over the long term, the current acquisition and force development path, if left unchanged, will not be sufficient to keep up with China's growing A2/AD capabilities. Too often, investments have been channeled into evolutionary systems, platforms, and concepts that offer improvements, in some cases significant, over current capabilities, but do not create unique or unexpected challenges for our adversaries. The implementation of any concept aimed at countering China's A2/AD systems should be predicated on simultaneously developing cost-imposing technologies while employing these new capabilities in concert with legacy systems in novel and amplifying ways.

The approach codified by then-Secretary of Defense Hagel and later endorsed by Secretary of Defense Carter in the Defense Innovation Initiative (DII) is a step in the right direction. Under the DII, the Department has created a Long-Range Research and Development Plan (LRRDP), reignited a focus on wargaming and other analytic methods to assess capabilities, and acknowledged the importance of continuing to evolve existing operational concepts and institutionalize an approach that maximizes the opportunities for identifying new concepts. While these are laudable goals, there is limited clarity as to how they are being implemented. DII may help DOD create cost-imposing technologies and, possibly, processes on a limited scale. As currently envisioned, however, it will not be sufficient to realign strategies, concepts, and budgets across the Department.

The seeds of necessary institutional innovation exist within the Department. Properly identifying the offices developing the concepts—and providing them adequate access to senior policymak-

ers and to the processes that drive resources—will be integral to altering the current structure. In addition, testing operational concepts through joint and combined exercises, war games, and scenario development will help the Department flesh out and test the concepts as well as highlight needed improvements. Ideally, these would bring together regional engagement, posture, planning, budgeting, and capabilities.

Based on the analysis provided in the following capability sections, the United States retains strong capabilities in the Asia-Pacific for engagement, deterrence, and warfighting. However, over the study period, there is much the Department can do to enhance U.S. capabilities throughout the region. Building on U.S. advantages in stealth and undersea are important—and will remain critical enablers of U.S. power projection in an A2/AD environment. If additional resources become available, however, the Department should invest in developing processes and acquiring platforms that are better suited to the specific threats faced in the Asia-Pacific.

In the Asia-Pacific region, forces need to be able to operate independently over great distances, have a high degree of autonomy, and actively and flexibly network with other forces to achieve specific desired effects. Realizing this vision will require that the Department invest more not just in unmanned platforms (in the air or undersea) but also in the concepts of manned-unmanned teaming; single-pilot multiple-platform operations; and development of joint C4ISR networks able to operate with or without access to space and in an active jamming environment.

U.S. forces in the Pacific, including ground forces, will need to accelerate current experimentation with distributed operations of smaller, lighter, targeted mission packages. Peacetime operations at the air wing, brigade, carrier strike group, or even Marine Expeditionary Unit level are unlikely to meet U.S. needs in the future. In exercises, such large units are likely to overwhelm partner capacity to engage, and military capabilities in the Pacific are expanding such that these force sizes, by themselves, are no longer sufficient to deter adversaries.

The rapid advance of technology—commercial and military—suggests that fielding capabilities that take 10 years to develop and have an expected service life of at least 30 years will not provide U.S. warfighters with cutting-edge technology. Instead, the Department will need to consider alternative concepts for technology development, deployment, and replacement. Leveraging miniaturization to enable rapid upgrading of electronic components offers a successful example of this thinking already in practice.

The following sections assess the current state of capabilities, identify gaps and shortfalls, and offer recommendations about how the United States might bridge them. The capability areas examined by the study team are air superiority and global strike, naval and maritime forces, ground forces, special operation forces, missile defense, space, ISR, cyber, EW, nuclear forces, munitions, strategic mobility, readiness, logistics, and theater security cooperation.

AIR SUPERIORITY AND GLOBAL STRIKE

From the strategic bombing effort during World War II, through the air power campaign during the Vietnam War, to modern conflicts using stealth technology and PGMs, U.S. air power has been a central element in how the U.S. military conceives of, plans for, and executes joint com-

bat missions. Over the past quarter-century, U.S. forces have had nearly uncontested dominance of the air domain. Yet, some air threats in PACOM are far more challenging than those the United States has recently faced.

The USAF has identified five core service missions: (1) air and space superiority; (2) global strike; (3) rapid global mobility; (4) ISR; and (5) C2. This section will focus on USAF air superiority and global strike (non-nuclear) capabilities. Later sections will address other missions of air power: airborne ISR, global mobility (including refueling), special operations, and nuclear forces.

The nature of the Pacific theater, in scope, in complexity, and in threat environment, makes it a particularly difficult AOR across the spectrum of military missions, including air missions. Air power, appropriately resourced, properly timed, and adequately protected, helps to alleviate the time-distance challenge. The United States maintains the largest, most advanced air forces of any military in the world; however, competitor nations such as China and Russia are pursuing high-end capabilities and technology, as well as new strategies, to counter U.S. air power. Therefore, air dominance across the PACOM AOR cannot be assumed, though local or temporal air control can still be achieved.

Capabilities

U.S. Pacific Air Forces (PACAF) is the air-component command of PACOM. PACAF focuses on deterrence, engagement, regional security, and presence. PACAF's strategy includes several lines of effort and is meant to "build and sustain combat ready airpower" to support PACOM and national policy.⁴⁶⁷ In support of these objectives, the USAF maintains a large permanent presence in the region. The National Military Strategy also commits to "placing our most advanced capabilities and greater capacity in that vital theater,"⁴⁶⁸ which the USAF has executed through the increase in regional rotational forces and the commitment to place new capabilities first in PACOM.⁴⁶⁹

U.S. military strategists have considered air superiority a required condition for military success since World War II, and air superiority has been a characteristic of U.S. operations for about as long.⁴⁷⁰ However, as DOD rebalances to the Pacific, there are clear challenges to air superiority on the horizon. As discussed previously, China has employed A2/AD strategies to counter U.S. air superiority, particularly through "sophisticated integrated air defenses that can restrict access and freedom of maneuver in waters and airspace beyond territorial limits."⁴⁷¹

The core goal of air superiority, as the USAF observes, is "Freedom from attack and the freedom to attack."⁴⁷² More formally, it is defined as "having sufficient control of the air to make air attacks on the enemy without serious opposition and, on the other hand, to be free from the danger of serious enemy air incursions."⁴⁷³ The USAF, USN, and USMC all contribute to air superiority in the Pacific. USN and USMC air capabilities are addressed in the maritime capabilities section.

PACAF commands 13 squadrons capable of air superiority missions, deployed in Alaska, Hawaii, South Korea, and Japan. To increase basing flexibility, the USAF's "places, not bases" strategy aims to open additional forward-operating sites outside of the main operating bases (MOBs) through security cooperation. Additionally, PACAF is getting more forces into theater through Theater Security Packages (TSPs) and the new Rapid Raptor effort, which have also provided stabilization

and reassurance through rotational deployments of fourth-generation (in the case of TSP) and fifth-generation (in the case of Rapid Raptor) air superiority assets in PACOM. These packages have centered on deployments of fighter aircraft and their support personnel and infrastructure, mostly using Air National Guard units. Beyond increasing forward capacity, TSP and Rapid Raptor also enhance interoperability and provide training opportunities in the Pacific. TSPs have included F-16 squadron deployments to Kunsan AB in South Korea and RAAF Tindal in Australia; F-16s to Kadena AB in Japan; and F-15s to Osan AB in South Korea, among many others since 2004. Rapid Raptor, initiated in 2014, has seen deployments of F-22s to Andersen AFB in Guam.

Although there are no plans to change the basic posture of the air forces in the Pacific, there are two additional capabilities expected in the near term, within the Future Years Defense Program (FYDP).

- The F-35 Lightning II (Joint Strike Fighter) fifth-generation, multirole fighter will have a significant Pacific role. Three Asia-Pacific allies, Japan, South Korea, and Australia, are also procuring F-35s, providing significant opportunity to realize interoperability and shared concept of operations (CONOPs).⁴⁷⁴ Japan and Australia will each host shared maintenance and upgrade facilities for the F-35. The USAF version, or “A” variant, of the F-35 is scheduled to reach initial operating capability (IOC) by 2016. The Pacific posture for the F-35A is not yet clear. The initial deployment site has not yet been decided, but Eielson AFB in Alaska is considered the preferred alternative for the first PACOM squadrons.⁴⁷⁵ In the long term, Misawa, Kadena, Osan, and Kunsan are all likely locations for F-35 stationing,⁴⁷⁶ replacing F-16s and A-10s.
- The KC-46, which began production in 2015, will recapitalize the aging KC-135 tanker force. Air refueling is covered later in the strategic mobility section, but has significant impact on tactical aircraft range and availability and so is mentioned here. Current plans call for rotational presence of KC-46s in PACOM, but no permanent stationing.

In addition to air superiority missions, air power helps deter conflict and defeat adversaries by holding at risk strategic and tactical centers of gravity. In the USAF, this mission is now known as “global strike,” one of the five core missions of the service. The primary conventional global strike force is the 159 bombers, including 96 primary mission aircraft, tasked to AF Global Strike Command (AFGSC), a Component Major Command of the U.S. Strategic Command (STRATCOM). The fleet is made up of a total of nine squadrons of B-52 Stratofortresses, B1-B Lancers, and B-2 Spirits, based at Whiteman AFB in Missouri, Barksdale AFB in Louisiana, Ellsworth AFB in South Dakota, Dyess AFB in Texas, and Minot AFB in North Dakota.

The global strike force carries out a wide range of operations to achieve tactical, operational, and strategic effects. Operational effects are achieved through interdiction of enemy forces, striking operational C2 nodes, and special operations insertions. Strategic effects (in conventional operations) are achieved through attacks on non-military centers of gravity—usually political or economic centers—in order to degrade or destroy an enemy’s capacity to make or enforce political decisions, and to diminish capacity to sustain the economic elements of warfighting. Finally, global strike forces deter potential adversaries through their nuclear and conventional strike capabilities.

The development of the Long Range Strike Bomber (LRS-B) is the most significant effort underway in the global strike inventory. Sustaining a strategic bomber capability is increasingly important as the existing inventory ages—under current plans, the oldest B-52 will have been in service for 84 years at the end of the program in 2044. The current USAF plan for LRS-B calls for a new penetrating strike bomber, expected to reach full operational capability in the late 2020s. This capability, particularly when paired with long-range anti-ship and anti-ground missiles, will be particularly suited to A2/AD environments.

Global strike capability is provided to PACOM primarily through the continuous bomber presence program. This program, active since 2003, provides forward-deployed long-range aircraft by rotating bomber squadrons to Anderson AB in Guam to provide deterrence and assurance in the Western Pacific. B-52 bombers have also rotated through Australia. Maintaining bomber presence in the region provides a visible example of U.S. extended deterrence and regional commitment, as demonstrated by the flight of two B-52 bombers over China's newly declared ADIZ in the East China Sea one day after the surprise Chinese declaration in 2013.

While forward-deployed assets make a strong and visible statement, it is also important to recognize the long-distance capability these forces provide. With refueling support, a detachment of bombers can strike an adversary in the Asia-Pacific from bases in CONUS. PACAF-directed missions from CONUS have included training missions and routine deployments to Hawaii and South Korea. This global capability provides the U.S. military the ability to respond to anti-access challenges from bases beyond adversary reach.

While bombers provide the traditional strike missions, there are two other sets of USAF capabilities that contribute to the global strike mission. Unmanned systems such as the MQ-9 Reaper are now employed as strike platforms for air-to-ground missions. These platforms provide long loiter time and a capability to drop laser-guided munitions against surface targets. These capabilities would likely work well for a conflict in Korea where the United States has bases nearby and the air defenses are not as strong. However, an MQ-9 would not be able to operate in A2/AD environments and at the long ranges likely to arise in a high-end Pacific conflict.

Gaps

There are concerns that the warfighting concepts outlined in JAM-GC may not be achievable with the current and planned future capabilities the USAF is deploying in the Asia-Pacific. The following section covers these gaps.

The United States maintains greater air capabilities in PACOM than in any other theater. However, the risks to U.S. air superiority are also greatest in East Asia. The combination of the tyranny of distance and a highly capable potential adversary stresses U.S. air power in ways not present during recent conflicts. U.S. air forces face two notable vulnerabilities in regards to air superiority: range and basing.

Most current tactical aircraft have short range, requiring refueling support to operate with the combat radius necessary in the Pacific. As China deploys SAM systems with extended ranges, the ability for fourth-generation aircraft, which currently make up the predominance of the U.S.

force, to operate forward is limited. This becomes particularly acute with the potential deployment of Russian-developed S-400 and Chinese derivative anti-aircraft systems that have a range of up to 250 miles (which would extend land-based PRC air defenses beyond Taiwan). These air defenses, and their sea-based counterparts, push back the refueling assets and enablers (AWACS, tankers, etc.) that support air superiority missions. The farther away these fighters must operate, the more difficult it is to establish superiority by suppressing enemy air defenses, setting up patrols and sweeps, and executing offensive air operations.

Basing is a problem because, as discussed earlier, China has pursued anti-access strategies intended to deny U.S. forces access to the theater, and a key component of China's strategy is early attacks on U.S. air bases.⁴⁷⁷ Currently, five major U.S. air bases are within range of Chinese land-attack missiles. A recent report noted, "Barring a major U.S. defensive technology breakthrough, the growing number and variety of Chinese missiles will almost certainly challenge the U.S. ability to operate from forward bases."⁴⁷⁸ Such attacks would hamper sortie rates and the ability to generate U.S. air power.

The United States response to A2/AD efforts to hold air bases at risk consists of three primary elements: protecting bases, operating from dispersed locations, and operating from farther away.

The first response is to improve active and passive defense measures at MOBs. Increasing missile defense capabilities; hardening aircraft shelters, infrastructure, fuel systems, munitions, and airfields; and increasing availability of runway repair capabilities are all options for improving the resiliency of installations inside Chinese missile ranges. Without such actions, forward bases can be destabilizing in a crisis. As Thomas Schelling pointed out regarding the 1941 attack on Pearl Harbor, "A fine deterrent can make a superb target."⁴⁷⁹

The second response is the development of dispersal sites for air assets. With Chinese missile developments described as the "most active land-based ballistic and cruise missile program in the world," at least as far back as 2009, it is prudent to reduce vulnerability by moving assets away from MOBs.⁴⁸⁰ By eliminating single points of failure at MOBs, dispersal sites enable continued forward operations in a conflict. Dispersal can also give U.S. forces strategic depth, which it can use to absorb an initial attack.

The USAF has sought security cooperation agreements that open up new airfields to U.S. use, typically by allowing U.S. aircraft to rotate through ally and partner airfields to increase familiarity with assess sites. These sites can be made more effective more quickly by establishing mobile forward arming and refueling points (FARP) and prepositioned stocks.⁴⁸¹ In addition, new technologies that allow use of short fields and rapid construction could permit further exploitation of such sites.

A third response is to develop concepts, platforms, and payloads that enable DOD to employ air power with longer endurance and at greater range than the currently programmed fleet. For example, the USAF is developing new CONOPs for increasing the range and flexibility of its fighter force. Rapid fighter movement and FARP concepts are being combined in ways that allow for long-range operations by F-22s, supported by an accompanying C-17. Over an eight-hour mission, teams have demonstrated the ability to "receive mission updates airborne, generate (or receive) target-quality coordinates, defeat air-to-air adversaries, deliver air-to-ground ordnance

in a dense surface-to-air-missile environment, and land at a forward location.⁴⁸² After landing at a dispersal site, the support team can turn the F-22 detachment around with new pilots, fuel, and munitions and launch additional sorties from a forward location in a matter of hours. This “Rapid Raptor” capability has been demonstrated in PACOM during exercises originating from Alaska and landing at forward airfields.⁴⁸³

Nonetheless, this capability is limited in scope over the mid-term by the size of the F-22 fleet. At 187 airframes, there are severe limits on the amount of forward operational capability that can be generated. There are approximately 78 F-22s tasked to PACOM. The F-35 will expand this capability, but the shorter range of the F-35 (about 500 miles less than the F-22) limits its usefulness for these types of long-range operations. Utilizing fourth-generation aircraft such as the F-15 and F-16 would allow the current force to expand the number of aircraft available for dispersed operations in a conflict. Additionally, relying on C-17s for support would strain heavy airlift capability—a capability likely to be near capacity during a contingency in the Pacific based on existing force-flow requirements.

The required operating ranges in the Pacific will stress current and planned U.S. assets, particularly air superiority and other tactical aircraft. In addition to new concepts of operations such as dispersal, DOD will have to explore additional avenues to increase the range of essential platforms—especially the F-35. Two existing concepts provide examples of ways to achieve greater range, though each has drawbacks. First, a conformal drop tank for the F-35, similar to those produced for the F-22, may create initial range options to alter concepts for distributed basing and adversary engagement over the current capabilities of the F-35. While these tanks decrease the aircraft’s stealth when attached, after they break away the aircraft returns to a relatively clean, stealth configuration.⁴⁸⁴ The development of such tanks would increase the F-35’s range and reduce reliance on tanker aircraft. Second, technologies such as adaptive cycle engines have the potential to reduce fuel consumption and thus increase range, and should be considered for out-year production or upgrade packages to the F-35 fleet.

These three responses can mitigate vulnerabilities, but cannot eliminate them. Hardened sites can still be overwhelmed, dispersed sites are still vulnerable to attack and increase logistics support requirements, and new concepts and platforms will take time to enter the fleet. Therefore, global strike from CONUS is an important complement to regional air capabilities.

The global strike force is well positioned to handle near-term contingencies in PACOM, through forward deployment and growing familiarity with the region. However, there is the potential for significant capability gaps and capacity shortfalls in the event of a major conflict—driven primarily by capabilities for operating in highly contested environments.

There is great value in having the capability to hold Chinese targets at risk, despite PLA IAMD systems. Low-observable aircraft are the key to penetrating advanced air defenses, but these aircraft are in low supply. There are only 20 B-2 bombers (16 primary mission aircraft), the only strike aircraft currently in the fleet capable of penetrating sophisticated air defenses from long ranges. While these are highly capable aircraft, the ability to generate sufficient combat power from thousands of miles away with 16 airframes is limited. B-1s are capable of operating and delivering long-range standoff munitions outside of the highest-risk SAM environments with

sufficient defensive support. However, this defensive support would likely need to be provided by forward-based fighter aircraft, and in an environment where forward operating bases are compromised, generating fighter support to protect high-value strike assets would be a challenge.

The addition of new long-range strike platforms to the bomber inventory is likely to expand the capacity and capability of global strike forces. This will be critical to ensuring the ability to continue to hold strategic and operational targets at risk across PACOM. Finally, based on the rapid improvements of IADS, EW, and cyber capabilities in China, there is no guarantee that low-observable platforms will always be able to operate in highly contested environments. Since the LRS-B is not expected until the late 2020s, there is a real possibility that new radar and sensing technologies could obviate the U.S. low-observable strike advantage.

For both tactical and global strike missions, a dynamic Air Tasking Order (ATO) process is needed. As currently structured, this centralized process collects requests for air support from units across the theater, allocates air units to missions, disseminates detailed taskings to tactical units, and then monitors execution. Normally the process takes 72 hours.⁴⁸⁵ The current process is well suited to a mature theater with established routines but is unsuited to a dynamic environment in which situations can change rapidly. It is also unsuited to an environment in which communications and facilities are subject to enemy countermeasures.

Recommendations

- Invest in high-capability platforms, including unmanned systems, for the most difficult missions.
- Invest in next-generation optionally manned systems for both air superiority and strike. Successful development and utilization of unmanned platforms will require significant concept development, and openness to non-traditional modes of force employment, both of which have experienced institutional opposition to date.
- Adopt and institutionalize lessons from combat missions in Iraq and Afghanistan to establish procedures for a more dynamic and resilient ATO process in theaters subject to rapid change and enemy countermeasures.
- Investigate developing conformal drop tanks for the F-35 or more fuel-efficient engines. Although technically challenging, these capabilities would have great value in PACOM given existing U.S. posture, the distances in theater, and the relatively short range of the F-35.

NAVAL AND MARITIME FORCES

In the maritime realm, the United States has continued to enhance its presence and upgrade its capabilities in the Asia-Pacific region. The recent Asia-Pacific maritime strategy reiterates the pledge to station 60 percent of USN ships and aircraft in the Pacific by 2020.⁴⁸⁶ USN leaders have noted that as new capabilities enter the fleet they are being allocated to the Pacific first, in recognition of the growing A2/AD challenge.⁴⁸⁷ That said, gaps in the surface, air, and subsurface realms remain, in both capability and capacity.

From a capacity perspective, in April 2015, then-PACOM Commander Adm. Samuel Locklear identified an overall shortfall in the readiness of follow-on forces and response capabilities.⁴⁸⁸ That same challenge was noted by then-Chief of Naval Operations Jonathan Greenert, who cited training backlogs as a major contributor to the USN's reduced ability to support the requirements of operational plans (OPLANs).⁴⁸⁹ He also noted that half of the USN's non-deployed units suffer from personnel or equipment shortages.⁴⁹⁰ Admiral Locklear maintained that these shortcomings undermine deterrence in the Pacific.⁴⁹¹ While current presence levels are largely being sustained and forward-deployed forces are at high readiness, there are major readiness deficiencies in the follow-on or "surge" forces that would augment those already in the region should multiple crises, or an operation of large scale or long duration, arise.⁴⁹²

If the USAF is one of the key components in JAM-GC, then the USN and USMC team is the other. U.S. access and maneuver is, in some ways, more difficult to achieve for naval forces as most maritime platforms have lifespans measured in decades and price tags measured in billions of dollars. The USN has done a commendable job identifying the problems that need to be addressed in order meet threats in the Asia-Pacific region; however, they are constrained from making more radical changes to the fleet by the expense in time, money, and organizational capital that such changes would require.

Capabilities

The USN surface fleet engages in a range of missions, including anti-surface warfare (ASuW), ASW, IAMD, amphibious operations, special operations, and MCM. In addition to the surface fleet, the USN operates submarines for these missions and also for nuclear deterrence. Finally, the USN maintains air capabilities including tactical air, ISR, and ASW. To fulfill these missions, the USN homeports 76 ships and submarines in the Pacific, as well as a range of air assets.

Surface

Though not often seen in recent decades, ship-to-ship combat is expected to occur in any conflict with an adversary possessing naval forces. Therefore, the surface navy maintains a robust anti-surface warfare (ASuW) capability, including capabilities to track and engage adversary vessels at long ranges using ASCMs, and closer in using guns. The U.S. surface fleet trains to conduct ASuW missions as single ships and as part of a larger formation.

A second major capability for surface ships is antisubmarine warfare (ASW). As countries throughout the Asia-Pacific expand their submarine capabilities and platforms, ASW will become an increasingly important element of continued U.S. superiority at sea. ASW is conducted from surface ships equipped with specialized ASW capabilities and from a range of other platforms, including fixed-wing ISR aircraft launched from the land; rotary-wing aircraft launched from land or sea; and other submarines. Working in tandem, these platforms represent the most capable antisubmarine force in the world.

Third, U.S. surface combatants play a large role in defending the United States from ballistic missile threats. Sixteen cruisers and destroyers home ported in the Pacific are equipped with the Aegis missile defense upgrade. Six of the 16 ships are forward deployed to Japan. This capability

provides the United States with a flexible and mobile force able to track and intercept missiles in a range of trajectories, including those targeting U.S. territory, or that of U.S. allies or partners.

Fourth, the USN maintains seven MCM ships in the Pacific, three in San Diego, and four forward deployed at Sasebo, Japan. MCM ships find, identify, and destroy or disable mines, providing safe passage for commercial and military vessels. These ships will be replaced by LCSs with MCM modules. Even with this replacement, there will be a large capacity gap. The United States will need to rely on allies and partners in this area.

Fifth, amphibious ships provide U.S. forces, and in particular the USMC, with the capability to embark troops and equipment, and quickly deploy ashore without the use of port facilities. In wartime, amphibious forces can conduct forcible entry operations to capture key objectives and, when needed, enable the flow of a larger follow-on force. In peacetime, amphibious forces, particularly with an embarked force of Marines, provide air and ground combat power, logistical support, and C2 that enables a wide variety of missions from a successful humanitarian operations to rescue of endangered citizens to counterterrorism.

With regard to amphibious capabilities, PACOM is unique among combatant commands (CO-COMs) as it has the only forward-deployed amphibious squadron and the only MEF based outside the continental United States. The four amphibious vessels based at Sasebo include an LHD, LPD, and two LSDs that enable the USN and USMC to undertake a wide range of missions across the AOR with a responsiveness that would not be possible if based farther east. U.S. amphibious forces were central to the success of the 2004 Indian Ocean tsunami relief effort and provided support to the Philippines for multiple natural disasters.

Subsurface

The USN submarine fleet includes attack, guided missile, and ballistic missile classes. The attack submarines are of the *Los Angeles*, *Seawolf*, and *Virginia*-classes. The *Virginia*-class remains under production with procurement scheduled to continue until at least 2030.⁴⁹³ There are currently 14 ballistic missile submarines, all *Ohio*-class, constituting the sea-based leg of the nuclear triad. In addition to the 14 ballistic missile *Ohio*-class boats, there are four *Ohio*-class guided missile submarines, each capable of carrying 154 Tomahawk cruise missiles. These vessels are the oldest of the *Ohio*-class and were converted from ballistic missile configuration in the early 2000s.⁴⁹⁴ Forty submarines out of a total fleet of about 75 are homeported in PACOM.

Submarines constitute a U.S. asymmetric advantage because they are difficult to detect and provide a range of offensive strike options. They can attack an adversary's naval forces (surface and subsurface) and maritime shipping; strike land-based targets through cruise and conventional ballistic missiles; and maintain a survivable nuclear deterrent. Submarines can also conduct covert SOF-insertion and ISR missions that other platforms cannot duplicate. As nuclear-powered platforms, submarines are also capable of long deployments limited only by the amount of food the ship can store and the crew's endurance.

Naval Air

The USN's premier platform is the aircraft carrier. The USN currently operates 10 aircraft carriers (11 when the *USS Ford* delivers in 2016), and their associated air wings, with 4 carriers homeported in the Pacific at facilities in San Diego, CA; Bremerton, WA; Everett, WA; and Yokosuka, Japan. For 70 years, aircraft carriers have been the nation's most versatile power projection asset, allowing U.S. leaders a range of options—from presence to strike—not provided by another unit in the U.S. inventory. Naval air power, consisting of kinetic attack, electronic attack, and ISR missions, provides U.S. commanders a range of tools deployable from, and into, areas that may be more difficult for land-based air power to access. In particular, carrier-based airpower can be launched from anywhere in international waters during peacetime and does not require foreign approval.

The capability comes with a cost, however, as aircraft carriers require a large number of escort vessels. Additionally, advances in the range and accuracy of anti-ship missiles increase the risk to U.S. aircraft carriers.

The high cost makes it difficult for the navy to produce more "carrier deployment days" to meet high levels of combatant commander requests. Even if the nation wanted to increase the number of carriers, it would take many years to get the additional carrier funded and built. One alternative is forward stationing. Forward stationing a carrier in Japan has helped, because it reduces transit time.

Gaps

Surface

Across the fleet, the USN's declining ship inventory, coupled with sustained global demands, have put great pressure on surface combatants. The fleet also suffers from training and maintenance shortfalls. In response, the USN recently initiated a program to restore a sustainable force management model (the "Optimized Fleet Response Plan"), but its full implementation will take up to six years.⁴⁹⁵ Returning to a stable deployment cycle also requires shortening the length of deployments (which implies decreased presence). The USN plans to sustain presence in the Pacific to the maximum possible extent, but absent new forward stationing opportunities and amid ongoing instability in Iraq and Syria, as well as Russia's continued aggression against the Ukraine, this objective will be difficult to achieve.⁴⁹⁶ Restoring predictable ship presence levels USN-wide is also dependent on Overseas Contingency Operations (OCO) funding, which is more uncertain than funding contained in the base Defense Department budget.

The USN is attempting to address inventory shortfalls, at least in part, by examining ways to increase the percentage of the fleet forward stationed in the region (which decreases transit time).⁴⁹⁷ Overall, however, the number of ships available within the Pacific AOR, relative to overall demand on the fleet, remains a short- to medium-term challenge. Long term the USN plans for ship numbers to increase gradually, peaking at 321 in FY 2028 from the current 272, although the affordability of these plans has been questioned.⁴⁹⁸

The USN continues to build BMD-capable ships, principally the DDG-51 class, but global demand still exceeds supply. It is attempting to address some of these shortfalls by increasing the capa-

bility resident on BMD ships, upgrading radars and munitions. The USN also plans to enhance its Pacific response capacity by re-stationing two BMD-capable destroyers in Japan by 2017.⁴⁹⁹ These ships will help to address some of the growing missile threats in the region, but the lack of a shared regional approach to missile defense continues to limit effectiveness.⁵⁰⁰

The USN restarted Flight IIA DDG-51 production in FY 2010 (after curtailment of the DDG-1000 *Zumwalt* class) and is also planning a new Flight III DDG-51 design. This new flight is scheduled to begin procurement in FY 2016 and will include improvements to combat systems, including notably the Advanced Missile Defense Radar (AMDR). There are concerns, however, about the radar's costs, physical size, and power and cooling requirements. The technical immaturity of the radar system has also raised questions about the schedule for introducing Flight III capabilities into the fleet.⁵⁰¹

Concern also exists that these vessels do not have enough room to support future combat systems across their 30- to 40-year lifespan, such as electromagnetic railguns or high-powered lasers.⁵⁰² Such technologies are needed to defeat A2/AD systems in a cost-efficient manner. However, the USN has stated its belief that the growth margin for the Flight III is not substantially different from those of the previous Flight IIA and, as with most new capabilities, there will be tradeoffs between new and existing systems.⁵⁰³

There are shortfalls in regional crisis response capabilities, especially those provided by the USMC. While the USMC has taken steps to increase the dispersal of its force around the Pacific, and thus be closer to potential crises, it lacks sufficient lift to maximize the benefit of that re-positioning. Just as with other ship types, a constrained inventory, coupled with maintenance shortfalls, have put severe pressure on amphibious platform availability. Regional commanders have cited the lack of sufficient amphibious ships, as well as the connectors to help deliver forces ashore, as significant areas of risk in their current response capabilities.⁵⁰⁴ For example, lift shortfalls slowed the USMC's response to the November 2013 typhoon in the Philippines.⁵⁰⁵ Amphibious lift will increase when ships under construction are delivered. The amphibious inventory is planned to increase from the present 30 to 34 in FY 2022 and peak at 38 in FY 2028.⁵⁰⁶

Leaders within the USMC and PACOM have expressed a desire to add a second Amphibious Ready Group (ARG) to the region.⁵⁰⁷ However, funding constraints and shipbuilding timelines may preclude that option, at least in the near term. As a result, the USN and USMC are seeking other ways to provide presence and a crisis-response capability, to include opportunities to use non-amphibious ships (and especially those in the logistics fleet). One proposed approach would involve using High Speed Vessels or other support ships to provide lift around the region, alleviating stress on amphibious shipping.⁵⁰⁸ Homeporting some of these vessels forward would allow faster response times during crises as well as increased opportunities for regional peacetime engagement. Although up-front costs could be sizable, homeporting would likely save significant force structure costs over the life of any individual naval platform.

While greater use of "auxiliary" lift options is almost inevitable given demands, those platforms are not well suited for higher-end or large-scale operations.⁵⁰⁹ A more ambitious, and more expensive, proposal is to homeport an ARG west of the International Date Line, potentially in Guam.

Another area of concern is MCM. Currently PACFLT has seven MCM ships. The LCS's MCM module is projected to reach full operational capability in 2018, which should offset the retirement of existing MCM ships.⁵¹⁰ The USN plans to augment ship-based MCM with additional defenses, to include airborne and undersea. The lack of MCM capacity and the publicized shortfalls of the LCS MCM module are alarming in the context of JAM-GC. Mines are a powerful asymmetric capability that U.S. adversaries are likely to employ in large numbers against U.S. surface and subsurface vessels. Even with the LCS's MCM module, the fleet will rely on ally and partner MCM capabilities to provide needed capacity.

Subsurface

Regional submarine forces have increased in size and capability, challenging the ability of U.S. submarine forces to keep pace.⁵¹¹ China, for example, has accelerated its submarine procurement, and of the 200 submarines in the Pacific region that do not belong to the United States, 150 belong to China, Russia, and North Korea.⁵¹² Of those 150, approximately 59 are believed to be modern submarines, to include nine ballistic missile variants, five nuclear-powered attack or guided missile submarines, and 45 diesel-powered boats.

In recognition of the challenges outlined above, the USN deployed two *Ohio*-class guided missile submarines and three *Virginia*-class submarines to the region over the last year.⁵¹³ Despite these moves, the USN will be pressed to meet the demands imposed by growing regional subsurface capabilities in the mid to long term as the U.S. attack submarine fleet is projected to decrease from 53 hulls in FY 2016 to a low of 41 hulls in FY 2029. This will exacerbate the existing gap between combatant command's demand for submarines and the available capacity.

Because submarines are one of the most, if not the most, powerful maritime denial system, the United States will seek to neutralize enemy submarines before bringing its high-value surface combatants into these zones. However, the shallow, littoral nature of much of the PACOM AOR presents serious challenges. During the Cold War, the attack fleet's main missions— seeking out and destroying Soviet ballistic missile submarines and protecting U.S. vessels from marauding Soviet attack submarines—took place in deep water. U.S. submarine design reflects the requirements of these operations, which favor large and fast boats with long endurance.

Littoral operations are characterized by shallow depths, restricted maneuver, and challenges to sensing technologies. The first two challenges are especially acute for U.S. submarines, given the size of nuclear-powered vessels in comparison to non-nuclear boats.⁵¹⁴ For example, the smallest U.S. nuclear submarine is roughly 350 feet long and draws 30–40 feet of water while the latest German conventional submarine, similar in size to those being purchased across Asia, is less than 200 feet long and only draws 20 feet of water.⁵¹⁵ This size difference gives conventional submarines an advantage in littoral areas as they can maneuver more effectively and better use subsurface features to avoid detection.

The USN will also see a shortfall of guided missile submarines in the late 2020s due to the retirement of the *Ohio*-class guided missile variant.⁵¹⁶ From a PACOM perspective, this creates a shortfall in long-range strike capacity. To address this problem, the USN plans to stretch the *Virginia*-class's hull and insert the Virginia Payload Module (VPM) that increases Tomahawk cruise missile capacity from 12 to 40.⁵¹⁷ VPM will also support other payloads such as unmanned under-

sea vehicles (UUVs) or SOF mission packages to further increase the multi-mission capabilities of the *Virginia*-class. However, significant gaps will exist from 2026 until the full complement of VPM-fitted *Virginia*-class submarines come on line.⁵¹⁸

The high cost of the *Ohio*-class replacement program (ORP), coupled with ongoing fiscal pressures, has created uncertainty about whether shipbuilding funding will be sufficient. USN and other Defense Department leaders have cautioned that the USN does not have sufficient internal funding to absorb the ORP. For example, in 2015 testimony, Admiral Locklear stated that the ORP would “severely impact” other shipbuilding efforts.⁵¹⁹ Both the administration and the Congress have recognized the need to resolve undersea funding issues, but no funding plan has been agreed on.

Naval Air

There are far more global demands for carrier presence than the navy can satisfy. Forward stationing another carrier in the Pacific would increase regional U.S. presence and warfighting capability and reduce transit times to and from the Western Pacific or the Middle East by approximately one week, thereby strengthening deterrence, reducing long-term force structure strain, and reassuring allies and partners. There will be an opportunity to re-station a Nimitz-class carrier forward when the fleet receives the *USS Gerald Ford* and can replace the re-stationed carrier in San Diego. On the other hand, forward stationing a carrier in Yokosuka will require additional host-nation support and consideration would have to be given to the risk of placing two carriers within an area of operations increasingly held at risk by A2/AD capabilities. Further, stationing a second aircraft carrier in Japan would require stationing additional ships from its strike group and necessary aircraft, with requisite pier space, housing, and other facilities, to support them. Finally, training challenges from limited access to training facilities, especially for air combat training, would need to be resolved.

Naval aircraft have both capacity and capability shortfalls in the Pacific theater.⁵²⁰ The USN and USMC capability shortfall arises from a short-term readiness problem left over from the severe FY 2013 sequestration cuts.

The USN capacity shortfall arises from aircraft inventory shortages as the service transitions from older fighters (F-18s, both legacy and Super Hornets) to the F-35C.⁵²¹ As F-35C delivery has shifted backward (because of both budget and production issues), the strain on the existing inventory has increased. This has created maintenance backlogs, which have in turn affected training and pilot retention.⁵²²

The USMC has faced some of the same issues, but may be on a faster path to recovery. The 2015 USMC aviation plan prioritizes moving F-35Bs to the Pacific, with the first transfer occurring in FY 2016.⁵²³ Although the initial version of the F-35B will be less capable than the version that the USN will receive in 2018, the USMC has prioritized getting the aircraft into the fleet. That plane will offer the USMC a low-observable fighter capable of operating in A2/AD environments, and may enhance the ability to pass information both within the fighter formation and to other forces afloat and ashore.

The USN may also need additional air-to-air refueling capability in the carrier air wing. At present, the F/A-18E/F Super Hornet is used in this role, but the heavy takeoff weight of the aircraft

when operating in a tanker configuration is placing added strains on the F/A-18 fleet.⁵²⁴ This is concerning as the Super Hornet fleet lifespan is already stretched due to delays in the F-35 program. This gap may be bridged by a future unmanned carrier-based aircraft or a modified V-22. USN plans to integrate unmanned aircraft in the air wing remain contentious and while the USMC is investing in a V-22 aerial tanker capability, the USN has yet to do so.⁵²⁵

The A2/AD environment will encompass a growing portion of the western Pacific over the next 10 years. Future systems, such as the Unmanned Carrier-Launched Airborne Surveillance and Strike (UCLASS), will need to be developed and fielded to maximize operational effectiveness in A2/AD environments characterized by contested airspace and degraded or denied communications. Further, future systems will have to operate far from shore or the carrier and must provide capabilities that augment the planned F-35 fleet and contribute to the long-term operational viability of the U.S. carrier fleet.

The inability of the USN to move forward with the UCLASS program is a major capability gap. The well-documented battle over the final requirements for this program has created delays in fielding of the aircraft. From the operational perspective, this is troubling as there will be a teething period as the USN refines its tactics, techniques, and procedures with respect to carrier based UAS operations.⁵²⁶ This delay, coupled with the end of testing of the UCLASS predecessor, the Unmanned Combat Air System Demonstration (UCAS-D), may prevent the seamless incorporation of lessons learned from earlier UAS operations and designs. This history of slow development has led some observers to question the U.S. Navy's commitment to unmanned aircraft.

UCLASS may possess capabilities that will bridge some of the gaps addressed above; however, the final missions of this aircraft remain in flux. The latest draft request for proposals requires the aircraft to provide continuous ISR coverage at tactically significant ranges and a light strike capability.⁵²⁷ Many have viewed this as a step backward from earlier versions of the concept.⁵²⁸ Navy Secretary Ray Mabus indicated in 2014 that the end state "is an autonomous aircraft capable of precision strike in a contested environment, and it is expected to grow and expand its missions so that it is capable of extended range ISR, EW, tanking, and maritime domain awareness."⁵²⁹ The secretary's remarks show the ongoing debate, internal to the Navy, over UCLASS because the ability to operate in a contested environment traditionally means stealth while the requirement, as currently published, does not lead to a stealth UCLASS.

Whatever capabilities the UCLASS may finally possess, range, jam-resistant communications, and a high degree of survivability must be key attributes. The reach of China's A2/AD systems is such that U.S. carrier-based aviation assets will likely need to stay outside the most dangerous zones, at least during the initial phases of a conflict. Further, because no area will be entirely safe, mitigating risk will require using novel enabling capabilities such as EW and cyber.

Recommendations

- The USN and USMC should use HSVs and logistics vessels to support a wide array of partner engagement activity, especially with those nations that have a small or nascent amphibious capability. This would free up larger and more capable amphibious vessels for more stressing missions.

- Amphibious lift should be expanded and deployed forward to meet increased demands for theater-wide engagement and crisis response.
- The USN should, to the greatest degree possible, accelerate the development of UUVs to improve operational efficacy in the littoral areas of the Western Pacific. These vessels can also serve as a powerful monitoring network, akin to a twenty-first-century sound surveillance system.
- The USN should also accelerate development of unmanned aerial systems and ensure they complement the F-35 in ways that improve the lethality and capacity of both systems. Payload, range, and counter-A2/AD abilities should be prioritized, though not necessarily in the same platform.
- The navy should examine the steps needed to forward station an additional carrier in the Pacific, including the associated air wing and escort ships.

GROUND FORCES

The Pacific theater is frequently conceived of as a maritime and air theater of operations. In reality, U.S. land forces, from the USA and disembarked marines, are also vital to the nation's capabilities in the Pacific as well as to the rebalance. The USA currently maintains approximately 73,000 soldiers in Alaska, Hawaii, Washington, Japan, and South Korea.⁵³⁰ Approximately 25,000 marines operate from bases primarily in mainland Japan, Guam, and Hawaii, with a rotational presence in Australia.⁵³¹ In addition, the National Guard conducts regular training with eight countries in the Asia-Pacific region under the State Partnership Program.

Capabilities

The USA has begun to implement President Obama's rebalance to the Asia-Pacific through a range of recent organizational shifts and new operations. First, Gen. Vincent K. Brooks was appointed commanding general of USARPAC in 2013, transitioning the commanding officer role to a four-star general for the first time since the end of the Vietnam War.⁵³² As a result, USARPAC was elevated to the Theater Joint Force Land Component Command (JFLCC) for the Pacific.⁵³³ Bringing the USA in line with the USN and USAF practice of placing four-star commanders in the Pacific, the move signals the growing strategic emphasis the army places upon its missions in the region. On a practical level, the four-star USARPAC commander will now share equivalent rank with top army commanders in allied and partner countries, improving prospects for army-to-army cooperation.

Second, upon his appointment, General Brooks instituted the Pacific Pathways initiative to reshape the army's engagement in the region. Pacific Pathways seeks to improve the army's operational ability to deftly operate across the region's vast nautical distances by sending tailored units on a series of exercises with partner nations over the course of several months.⁵³⁴ The Pacific Pathways approach of linking multiple exercises together aims to reap efficiencies and cultivate more meaningful experiential gains for the units participating.⁵³⁵ With a major land war in the

Asia-Pacific seeming improbable, reshaping the army's role in the region to more swiftly react to small-scale conflicts, provocations, and natural disasters has been the driving force behind the new initiative. Notwithstanding concerns raised by the USMC over defending their traditional predominance in amphibious operations and island hopping,⁵³⁶ Pacific Pathways is improving the USA's agility in executing operations throughout the region.

Regionally aligned forces (RAFTs) are a third USA initiative that supports the rebalance. Unveiled in 2012, RAFTs link USA units with regional COCOMs and provide relevant language and cultural training.⁵³⁷ The goal is to improve the wide range of USA engagements with countries in each combatant command's AOR. In the context of the rebalance, then-Chief of Staff of the Army Gen. Raymond T. Odierno elaborated that "the [RAFT] concept will be especially important in the Asia-Pacific region as we move forward, home to seven of the ten largest Armies."⁵³⁸ In support of the RAFT concept, the army's I Corps, based at Joint Base Lewis-McChord, shifted its mission focus from Afghanistan to PACOM in 2012.⁵³⁹ Lt. Gen. Robert B. Brown and Maj. Jason N. Adler note, "The addition of an assigned Army corps provides a tailorable, scalable, and agile mission command node as well as unique capability sets that add to PACOM capabilities to prevent, shape, and win in the region."⁵⁴⁰ The reassignment of I Corps has provided PACOM with enhanced flexibility in support of the rebalance and may turn out to be strong evidence in support of the army's new RAFT model.

Given the geography of the region and the prominent role amphibious operations play in U.S. missions there, the USMC has served as a central component in the rebalance. As outlined previously, the USMC's contribution to the rebalance has come largely through the return of III MEF personnel to the theater from the Middle East and a realignment of USMC posture that disperses permanent and rotational presence from a concentration in Okinawa, Japan, to a more distributed laydown including Okinawa, Guam, and rotations through Darwin, Australia. These changes in posture have coincided with upticks in unilateral and multilateral exercises to build higher levels of amphibious operation experience among USMC forces rejoining the Asia-Pacific theater from landlocked Afghanistan. Exercises have focused on a wide range of amphibious missions from combat to HA/DR. Additionally, USMC forces in the Pacific held a conference in 2015 in Hawaii with the foreign commanders of over 20 countries' amphibious forces—with more than half hailing from the Asia-Pacific—to improve cooperation and coordination, especially for HA/DR missions. Current USMC personnel totals in the PACOM AOR seem appropriate.

However, there are legitimate concerns about the ability to move Marines effectively around the Asia-Pacific theater. These limitations are particularly concerning for potential warfighting scenarios, in which survivable, inter-theater lift capability is merited. Former PACOM commander Adm. Samuel Locklear acknowledged the situation last year by stating, "We have had a good return of our Marines back to the Asia-Pacific, particularly as the activities in the Middle East wind down in Afghanistan. . . . But the reality is, is that to get Marines around effectively, they require all types of lift."⁵⁴¹

U.S. ground forces provide expeditionary (especially USMC) and sustained (especially USA) capability needed to deter or defeat aggression on the Korean Peninsula, in defense of Japan and oth-

er regional allies, and in other contingencies that might arise. U.S. ground forces also contribute key joint and combined force enablers for the full range of military operations, including: air and missile defense, medical expertise, engineers, intelligence capability, and logistics. Regional allies and partners value the ability to work closely with USA and USMC forces over time to prepare for operating together in and out of the Pacific, and to improve their own capabilities.

Gaps

Despite the focus on the Pacific from both the U.S. Army and U.S. Marine Corps, there remain four key capability gaps facing U.S. ground forces in the region.

First, the demand for USA IAMD assets in the region far exceeds supply. USA PATRIOT and THAAD batteries are strained by global demand, to include in the Pacific. Defending U.S. homeland territory in the region, namely Hawaii and Guam, is a foremost priority for theater missile defense, but so is defense of U.S. and allied forces in South Korea. At times of heightened threat, USA air defense of USAF and USN installations elsewhere in the region is also important.

To close this capability gap, the Defense Department should continue encouraging its allies and partners to integrate their missile defense systems with the United States and each other and to continue investing in their own air and missile defense capabilities. Japan has invested significantly in an Aegis-based missile defense system. Japan and South Korea also maintain their own PATRIOT batteries, and both are upgrading to the more advanced PAC-3 system.

As the ballistic missile risk to U.S. installations and personnel in the Asia-Pacific grows, DOD should assess the risks and rewards of having the USA increase the number of THAAD and PAC-3 batteries in the force above the currently planned levels, even at the cost of reducing the overall number of combat formations.

A second ground capability concern is the ability to flow adequate and ready ground forces—combat forces as well as key enablers—to meet combatant commander needs for contingencies on the Korean Peninsula. The actions of North Korea demonstrate the prudence of maintaining approximately 20,000 USA and USMC forces in South Korea. Yet the majority of ground forces needed in a large-scale contingency will come from elsewhere, particularly the continental United States. If forces cannot arrive in theater on a timeline assumed by the combatant commander, it impairs his or her ability to execute operations in a manner that minimizes loss of U.S. and South Korean lives and achieves decisive results rather than engender a longer, costlier campaign.

Third, although the concept of Regionally Aligned Forces for the Pacific is strong, the USA is challenged to meet its commitments there amid the simultaneous strains of its drawdown and higher-than-anticipated global demand for forces, particularly in Europe and the Middle East. These demands have kept the USA from resetting quickly from the conflicts in Afghanistan and Iraq and turning to a “steady-state” posture that the RAF concept assumes. Of note, the USA has yet to achieve a high level of unit integrity in its Reserve Component due to the continual cross-leveling of forces, which entails volunteers from a variety of units filling vacancies in another unit that is deploying. RAF relies on such unit integrity, along with the availability of both Active and Reserve Component forces, for the purposes of developing routine interactions in the Pacific.

USA planning should be updated to assume an extended period of strain on its force and assess how best to achieve the goals of RAF for the Pacific within those constraints. This may require aligning forces at smaller levels of aggregation—such as at the company or battalion level, and perhaps brigade HQ—to improve the likelihood of routine access and deployment for USA units to Asia. This approach is needed to conduct the kind of relationship building that will be required for the full range of USA missions in the Pacific, from humanitarian response to operations with India to the defense of Japan and South Korea. National Guard and Army Reserve forces can contribute substantially to this strategy, to include expanding the number of State Partnership Programs in the Asia-Pacific region.

Fourth, with III MEF returning to its full complement in the Pacific after deployments to the Middle East, the USMC would be significantly advantaged by having a sizable maneuver and live-fire training ranges that provide for amphibious and maneuver operations. Today's limited training ranges for ground forces in the Pacific, especially for the USMC, are a significant impediment to conducting the full range of needed training while deployed in the Pacific. The nature of amphibious operations is changing just as the threat environment and the full suite of U.S. joint capabilities has changed. Although sizable opposed amphibious assaults have not been required since the Korean War, it is in the U.S. interest to ensure the USMC is capable of conducting amphibious operations under the full range of conditions it could face in the future. Without additional training opportunities, USMC forces will need to ensure major unit training is conducted prior to rotation into the region. The DOD should work with the Commonwealth of the Northern Mariana Islands to develop such a training facility on the unoccupied island of Pagan, otherwise made uninhabitable due to volcanic activity.

The United States also has existing agreements with three countries in the Compact of Free Association: the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau. Under terms of these agreements, the United States may negotiate access to land for military purposes, including for training ranges. The existing missile range in Kwajalein offers an example for future training ranges. Training areas in other countries should be used periodically to maintain continued access, which has not always been the case.

Although not a capability gap, the Army's Pacific Pathways initiative, as currently structured, bears further assessment. Land power engagements are critical in the Asia-Pacific region, from India to Indonesia. The USA should be applauded for thinking creatively about how to most effectively train its own forces, along with allies and partners, through Pacific Pathways. However, there are legitimate questions as to whether the current focus on brigade-level deployments from the sea is as cost-efficient and readiness-enhancing below the headquarters level as the USA has desired. The USA unquestionably has an amphibious history, reaching back to World War II. Yet its current and planned equipment inventory has not been designed for extensive at-sea rotation, risking faster degradation than planned. The USA should be transparent about the costs of Pacific Pathways to help weigh its value. If the USA is serious about returning its forces to a ready level for maneuvering from the sea, Pacific Pathways would need to be accompanied by a more transparent presentation on its costs and, likely, a detailed manning and equipping approach to sustaining it. Moreover, PACOM, the Joint Staff, and the Office of the Secretary of Defense should encourage closer coor-

dination between the USA and USMC to ensure the joint approach to improving readiness and security cooperation in the region is maximized. Regardless of its mode of transport, the USA should place its highest Pacific training and readiness priorities on U.S. and combined capability to sustain land operations—from humanitarian assistance to combat.

The Marine Corps could consider adopting elements of the RAF into its deployment and partner engagement planning, including regular small-scale deployments with allies or partners to focus on developing specific capabilities where the Marines bring a desired skill set. Options to consider include small-scale—platoon or smaller—rotational deployments to embed with allies or partners in Southeast Asia to cooperatively develop capabilities that take longer than a single exercise to come together; or, augmenting country-team staff under the ambassador as a liaison to host-nation headquarters units to develop the institutional capability and capacity to reach complex goals—such as establishing a truly amphibious force.

Recommendations

- The U.S. Army should use smaller units for the Regionally Aligned Forces concept, to maintain the unit integrity that is highly beneficial to forging lasting relationships between U.S. forces and partner nations. The use of smaller units can help ease the strain of RAF on the total force, particularly by expanding the use of the Reserve Component.
- Currently the National Guard conducts exercises with eight countries in the Asia-Pacific region, out of a total of 70 programs in the State Partnership Program. The National Guard brings “all of government” connections at the state level, and provides excellent insight into civil-military relations. The National Guard should expand the State Partnership Program to increase the number of partnerships in the Asia-Pacific region.
- DOD should pursue development of a training range in the Commonwealth of the Northern Mariana Islands on Pagan to support III MEF requirements for amphibious training and maneuver ashore. As a backup, DOD should begin exploration of training facilities in the Compact States.
- PACOM should periodically use all training areas abroad to which it has access.
- The USA should reassess Pacific Pathways’ costs and benefits, and include a detailed manning and equipping breakdown if the program is continued. In addition, PACOM, the Joint Staff, and the Department should ensure close coordination between the USA and USMC to improve readiness and security cooperation through a joint approach.
- The USMC should establish liaison teams with one or two Southeast Asian nations currently seeking to develop more effective amphibious capabilities.

SPECIAL OPERATIONS FORCES

Special Operations Forces (SOF) provide decisionmakers with strategic capabilities for long-range reconnaissance, training of indigenous forces, and direct action. U.S. SOF have gained attention over the past 14 years for conducting difficult and high-risk missions such as the raid that killed

Osama bin Laden. The high degree of training and capability of U.S. SOF allow them to conduct missions quickly and with a relatively small number of personnel. Thus, they often have a lighter footprint than conventional forces. They have been particularly adept at operating in the “gray zone” between war and peace. This creates high demand from COCOMs for SOF capabilities, and from partner nations for joint training.

Capabilities

U.S. SOF in the PACOM AOR conduct a range of missions including: counterinsurgency and counterterrorism; counterpiracy support; maritime insertion and strike; and exercises and training with allied and partner forces. In support of these missions, SOF must be able to deploy rapidly, maintain a high level of readiness, and have access to diverse mission packages.

Although SOF are able to deploy globally on extremely short notice, forward basing of units allows a commander to move even faster. In PACOM, there are three forward SOF units outside of South Korea: the U.S. Army’s 1st Battalion 1st Special Forces Group (Airborne) and the U.S. Air Force’s 320th Special Tactics Squadron, both based in Okinawa, and Naval Special Warfare Unit One (NSWU-1) based in Guam.

Additionally, special operations capabilities can be included in the global strike mission set due to the skill, speed, and discretion of operators and the special forces aviators who support them. The USAF is the prime supplier of SOF aviation in PACOM. The 353rd USAF Special Operations Group, which is assigned to AFSOC, is based at Kadena AB and is the main long-range SOF lift formation in PACOM. The 353rd maintains a squadron of MC-130P Combat Shadows, and a squadron of MC-130H Combat Talons. These aircraft provide infiltration, exfiltration, refueling, airdrop, and air-land capabilities to special forces. There are plans to add high-speed vertical lift to SOF aviation in PACOM through the forward stationing of a squadron of CV-22 Osprey tiltrotor aircraft at Yokota AB, Japan.

The USA also has a battalion-sized formation of the 160th Special Operations Aviation Regiment (SOAR) based at Joint Base Lewis-McChord. This unit depends on USAF strategic lift to reach the Western Pacific as they only operate rotary-wing aircraft. In addition, the speed and range limitations inherent to rotary wing aircraft mean that the 160th SOAR may not be suited for all SOF missions in the PACOM AOR.

Maritime SOF, consisting of both USN and USMC special operators under the command of NSWU-1, is based at Naval Base Guam. NSWU-1 provides maritime SOF capabilities such as a maritime crisis response force; visit, board, search, and seizure (VBSS) for interdiction and operation at sea; and coordinates naval special warfare lines of operations in PACOM.

To give some sense of the effect of distance on deployment timing, it would take a SOF formation based in Okinawa approximately eight hours to transit to the southernmost portion of the South China Sea via cargo aircraft. It would take a CONUS-based SOF formation approximately 14 hours to make the same journey.⁵⁴² Although these figures are approximate and do not capture any launch planning, training, or briefing that may be required, they give a sense of the value of forward SOF forces in such a vast region.

In addition to the challenges of distance, PACOM's preponderantly maritime nature requires SOF to maintain sufficient seaborne insertion capabilities. These capabilities are provided by pre-positioned maritime assets, air-deliverable, high-speed surface vessels, and submarine delivery from SSNs and SSGNs. Notably, the SSGN capability, deployed for the first time in 2007, allows up to 66 SOF personnel to deploy covertly while the vessel remains submerged.⁵⁴³

SOF rely on a range of platforms to provide the intelligence needed to conduct their missions. In addition to manned platforms, such as specially equipped variants of the C-130, these also include unmanned air assets such as the MQ-1 Predator, MQ-9 Reaper, AECV/Puma AE, and Viking 400. These unmanned air assets provide a range of capabilities, from hand-launched platforms with short range designed for electro-optical and infrared reconnaissance and surveillance, to large armed reconnaissance platforms with sophisticated sensors and a range in excess of 450 miles.

Gaps

High Personnel Tempo. Global SOF capabilities are adversely affected by the extremely high personnel tempo (PERSTEMPO) of units over the past decade. Due to the demands of global combat operations, SOF members have frequently spent long periods deployed abroad away from their families. Compounding the length and frequency of deployments is their unpredictability. Research has shown that unpredictability and length of deployments are the greatest stress factor on SOF members and their families.⁵⁴⁴ In testimony before the Senate Armed Services Committee, Special Operations Command (SOCOM) Commander Gen. Joseph Votel indicated that improving PERSTEMPO was one of his chief aims in order to increase the health of SOF globally. However, continued high global demand for SOF capabilities may hinder the ability of SOCOM to reset the force by optimizing PERSTEMPO. High SOF PERSTEMPO affects PACOM because it limits the availability of SOF units, which are sourced globally when regional assets are insufficient.

Long-Range Contested Infiltration. At present, SOF relies on a collection of fixed-wing, tiltrotor, and rotary wing aircraft for infiltration and exfiltration missions. Media reports suggest that the United States can conduct these operations over relatively short ranges in hostile airspace with low-observable rotorcraft.⁵⁴⁵ For long-range missions, SOF relies on the fleet of C-130 derivative aircraft, but these will be unable to conduct successful operations when required to penetrate advanced IADS.⁵⁴⁶ It may be possible to bridge this gap by adopting a modular approach to the LRS-B to support infiltration missions. However, it is unlikely that this solution will be workable for exfiltration. A low-observable, long-range aircraft able to conduct short takeoffs from unimproved runways may not be feasible from a technical or budgetary perspective. Non-material solutions to the exfiltration shortfall will therefore be required.

Airborne Fire Support. Air support to ground units has become vital in SOF operations as air assets can bring firepower to bear that is far greater than what a SOF team can carry. The AC-130 offers unparalleled accuracy and firepower for both SOF and conventional forces. However, it is extremely vulnerable in all but the most permissive of airspaces. For example, its low and slow orbits make it susceptible to ground fire. It is unlikely a large, stealthy AC-130 replacement will be developed and fielded in the study timeframe.

Precision munitions delivered from stealthy manned and unmanned platforms can help to bridge this gap in non-permissive areas. However, they may lack the necessary persistence to conduct overwatch of SOF units. In addition, the aircraft with these characteristics will remain a HDLD asset for the foreseeable future. Small loitering UAS organic to SOF teams and with kinetic strike capabilities may be able to bridge this gap.

Recommendation

- Continue prioritizing SOF missions to accommodate PERSTEMPO constraints.
- Continue efforts to develop solutions—technical or doctrinal—for long-range air and maritime insertion/extraction missions and for fire support in highly contested A2/AD environments.

MISSILE DEFENSE

Growing missile-based capabilities have established missile defense as major capability focus for the United States and its allies and partners in the Asia-Pacific. Even as IAMDs are recognized as an increasingly important capability, available forces are too few to meet all COCOM demands and face increasing strain from high operational tempo. Fiscal constraints and the large expanses of geography to defend have also created force distribution challenges that point to the need for greater regional cooperation and integration.

Capabilities

Defending against missiles requires the employment of a range of sophisticated capabilities, which can be largely divided into two major categories: sensors and interceptors. Sensors identify a missile launch and determine its trajectory. Interceptors neutralize missiles after launch and before impact.

The United States operates a range of sensors to identify and track missiles. Space-based assets identify early warning signs of a possible launch—particularly for missile tests and long-lead time events. Radars and other sensors located on allied territory, at sea, or in the air detect and track missile launches.

Interceptors include a range of land- and sea-based missiles, and point-defenses for ships and ground installations. The Aegis defense system is the foundation of PACOM's missile defense capabilities. Besides the interceptors, Aegis-equipped ships carry the powerful AN/SPY-1 radar for locating and tracking missiles, including ICBMs.⁵⁴⁷ Software upgrades to incorporate "launch-on-demand" and "engage-on-remote"—launching missiles and intercepting threats based on remote sensors, rather than on organic cues from the ship's radar— have improved the reach of interceptors fourfold.

The United States currently has 33 Aegis BMD ships: 5 cruisers and 28 destroyers. Sixteen of those 33 are assigned to Pacific Fleet, of which 6 are forward deployed to Yokosuka, Japan.⁵⁴⁸ One additional Aegis BMD ships may be forward stationed in PACOM by 2017.⁵⁴⁹

Today's SM-3 interceptors have been on an evolutionary path from Block I, to IA, to IB, to IIA. The Block IIA will be coproduced by the United States and Japan and will have a substantially longer operational range than the previous interceptors, over 1,500 miles.⁵⁵⁰ The SM-6 missile has a

special role for fleet defense against cruise missiles, and is evolving to counter ballistic missiles in their terminal phase, and potentially hypersonic threats.

On land, the United States has placed two AN/TPY-2 X-band radars in Japan. The first is at Shariki in northern Japan. The second has been delivered to Kyogamisaki and will soon begin operations. These radars provide information about missiles fired from Northeast Asia toward either Japan or the United States. Additionally, the United States operates the SBX-1, a self-deployable X-band radar, built atop a deep-sea, semi-submersible oil rig and designed to identify airborne objects at a range of 1,200 miles. SBX-1 is officially home ported in Alaska, but is currently in reduced operating status in Pearl Harbor, Hawaii.

The primary ground-based U.S. missile defense system is the PATRIOT system, which is capable of both air and missile defense. U.S. PATRIOT units in the Pacific are stationed in South Korea and Japan. South Korea, Japan, and Taiwan also operate their own PATRIOT systems.

While the PATRIOT defends against lower-tier threats, the THAAD system provides greater reach to strike long-range missiles earlier in flight, and is the only missile defense system with the ability to intercept threats both inside and outside the atmosphere (endo- and exo-atmospheric). The USA currently possesses four activated THAAD batteries. The only operationally deployed battery is at Andersen AFB in Guam. The other three batteries are in garrison at Fort Bliss, Texas, with an additional battery becoming operationally available next year and a total of seven funded.

Gaps

Missile defense gaps are most pronounced in interoperability and capacity.

Interoperability requires being able to communicate between missile defense systems of different types, as well as between U.S. and allied operators. Currently, the PATRIOT system and the THAAD system lack such interoperability. The interoperability of THAAD with the Integrated Air and Missile Defense Battle Command System (IBCS), for instance, still remains little more than a concept.

Interoperability with allies and partners remains even more limited. U.S.-Japan cooperation on missile defense technology and operations is the most advanced among U.S. allies. A lack of information sharing between Japan and South Korea, however, limits the benefits of leveraging each country's capabilities into a more effective whole.

The most critical gap remains the U.S. capacity to defend against a high-end adversary. For example, analysts estimate China has several hundred land-attack cruise and ballistic missiles with the range to target U.S. bases in Japan or South Korea. Countering these missiles would require, at minimum, an equal number of interceptors from the United States, Japan, and South Korea. Currently, the U.S. and allied inventory of interceptors within PACOM does not provide a full defense against a synchronized and complex attack.

Given the threats against Guam, the THAAD battery there is likely to remain there over the long term, if not permanently, to protect U.S. territory and the significant military assets deployed there. If so, it will need either permanent facilities or a rotation base.

While an important capability, THAAD does not address other emerging air defense threats, such as cruise missiles. Possible interceptors for cruise missiles include land-based SM-6 and PATRIOT. Another potential system, the Surface-Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM), was canceled in FY 2011. One sensor option would be to station a capability like the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS), a persistent overhead tethered aerostat to monitor incoming cruise missile threats.

MDA is again studying prospects for an extended-range THAAD interceptor (THAAD-ER), a missile that could potentially defend 9-12 times the area of current THAAD interceptors.⁵⁵¹ This interceptor would be of particular interest to the extended geography of the Asia-Pacific, and as a means to defend against hypersonic systems.⁵⁵² The USA has requested THAAD-ER by no later than 2025, citing a threat that is “likely to challenge the capability of THAAD in its current configuration.”⁵⁵³

Capacity also remains an important gap because of the likely high demand in a conflict with a missile-armed opponent. Although the USA still maintains the requirement of nine THAAD batteries,⁵⁵⁴ DOD and MDA currently only plan for seven, with the last reportedly scheduled for delivery in FY 2017 and operations beginning in 2019.⁵⁵⁵ Plans for funding the two additional THAAD batteries remain unclear.

PATRIOT units are stressed by high peacetime OPTEMPO. This could be eased by buying more units or by expanding the number of trained personnel so the deployments are spread among a larger pool.

Combatant commanders have requested an increase from 44 Aegis ships in FY 2012–2014 to 77 in FY 2016. The USN proposed mothballing half of the cruiser fleet to reduce operating expenses, but Congress overturned that proposal. The current program of record now includes sustaining the cruiser fleet and upgrading the ships’ hull, mechanical, and electrical equipment (HM&E), as well as their combat systems.⁵⁵⁶ Two cruisers, the Lake Erie and the Port Royal, will undergo modernization through the program and return to the fleet in 2026 and 2027, respectively.⁵⁵⁷

The USN has stated that it requires 40 Baseline 9-capable Aegis BMD ships to effectively conduct its mission in a major conflict. Baseline 9 provides more IAMD capability, enabling ships to counter both cruise and ballistic missiles simultaneously.⁵⁵⁸ Of the 33 BMD ships available today, however, only three have the Baseline 9 upgrade.

Australia is building Aegis-equipped destroyers but has yet to commit to acquiring SM-3 interceptors for missile defense.

In addition, establishment of Aegis-ashore in defense of U.S. bases in the region, as has been done in Europe, would offer greater missile defense capability and capacity, and enable BMD ships to cover other areas of the Pacific or to undertake other missions.

In the near term, chemically powered rockets will still be required to kill other rockets using hit-to-kill. A major concern is the high cost-per-kill because defensive missiles often have a higher cost than offensive missiles. Over the next decade, however, the United States may be able to field capabilities that would begin to close the cost gap. Reliability improvements on existing missiles could reduce the number of shots required per missile, thereby lowering the cost-per-kill, and increasing effective magazine capacity.

Several new technologies have potential to provide the United States with an increased capability to defend ships and installations at a lower per-shot cost:

- *Directed Energy.* High energy lasers could defend against missiles, aircraft, and small boats. Current range is limited to roughly a mile due to atmospheric effects, but once the system is installed, cost-per-shot is small and the number of shots is almost unlimited. A major challenge has been that it requires a large power source. Multiple services have active, long-term development programs, with a limited-capability system currently deployed on the USS *Ponce* for testing.⁵⁵⁹
- *Electromagnetic Rail Guns.* These weapons use electricity to fire a projectile at very high speeds (over 5,000 miles per hour). Originally intended for naval surface fires (i.e., against ships and land targets), the system's purpose has been expanded to include countering cruise missiles and ballistic missiles. Range is tens of miles, much longer than current lasers. As with the laser, it requires a large power source. The USN currently has two prototypes in testing.⁵⁶⁰
- *Projectiles Fired from Conventional "Powder" Guns.* Projectiles could be fired from a conventional gun to intercept missiles, with range in the tens of miles. In addition to providing fire support, these guns could defend against aircraft and cruise missile attacks. Their great advantage is that they could leverage guns and artillery pieces already in inventory, which would not require new launchers.⁵⁶¹ Further, many conventional artillery pieces have the advantage of being road mobile, providing a rapidly deployable air defense capability.

These technologies have taken longer to develop than originally expected. One study finds that "a number of significant challenges remain. Overcoming these challenges will likely require years of additional development work, and ultimate success in overcoming them is not guaranteed."⁵⁶² Such technologies therefore seem unlikely to replace kinetic kill missiles and guns in the near or medium term. These technologies are in developmental testing phases, but could reach IOC in 2020/2021 for directed energy and in the 2025 timeframe for an electromagnetic rail gun. None of these technologies is yet considered mature enough to be a program of record, with definite plans for procurement. Further, most of these technologies are for point defenses and cannot provide the long range and area defenses that missiles can. Some missile defenses will likely be needed even after these new technologies are fielded.

Recommendations

- Continue upgrades to THAAD and PATRIOT to meet evolving threats.
- Continue rapid development of efficient and cheap missile defenses across the kill chain, to include directed energy and railguns for fleet and point missile defense, as well as boost phase intercept.
- Deploy THAAD capabilities to South Korea.
- Assess whether increased threats and deployments require procurement of all nine planned THAAD batteries, per the USA requirement, to meet global demands.

- More actively address the full IAMD challenge for all U.S. forces in region, not merely ballistic missiles.
- Continue and improve the complexity of regional missile defense exercises, and actively improve interoperability and information sharing between and among allies and partners.

SPACE

U.S. assets orbiting Earth include a positioning, navigation, and timing (PNT) constellation, communications satellites, and a range of intelligence collection platforms. These assets amplify U.S. military superiority by providing the capability to collect and disseminate information rapidly, to use that information to strike an adversary accurately at great distance, and to quickly counter or adjust position in the face of a possible threat. The United States has developed these space-based communication and observation architectures over the past five decades.

Capabilities

PACOM is particularly reliant upon space-based assets. Space systems allow commanders to link dispersed forces together over the region's large distances. Space systems would also play a key role in defeating adversary A2/AD systems because of their ability to monitor force dispositions and guide precision munitions to their targets. The challenges that are currently facing U.S. space dominance are thus deeply concerning.

The constellation of 31 GPS satellites operated by the USAF provide extremely accurate PNT data to U.S. forces, a key contributor to effective PGMs. It is also important for battle management on the ground, in the air, and at sea, and provides safe navigation information to U.S. ships and aircraft.⁵⁶⁴ Space situational awareness (SSA)—the ability to view, understand, and predict the physical location of natural and manmade objects in orbit around the Earth—is provided by Space Based Space Surveillance (SBSS) and the Geosynchronous Space Situational Awareness Program (GSSAP), as well as ground-based programs.⁵⁶⁵ Ground-based discriminating radars, such as the Space Fence, also contribute to SSA, as will the Long Range Discrimination Radar (LRDR) planned for Alaska.

Continuous availability of communications regardless of location enables the global reach of U.S. forces. Satellite communications allow the remote piloting of UAS as well as the capture and dissemination of real-time information from ISR assets. Without satellites or a reliable alternative, U.S. advantages in UAS and ISR would be seriously eroded. These issues are discussed in greater detail in the section on ISR.

Finally, space-based assets provide the United States with the ability to observe any part of the globe. The United States maintains a robust observation and sensing capability in space, including visible and non-visible spectrum sensors to monitor military developments and to provide warning of missile-launch and WMD-related events. These sensors also provide the ability to detect, track, and potentially discriminate missiles from decoys, although some risk is incurred by vulnerabilities to countermeasures.⁵⁶⁶ Early warning satellites include the legacy Defense Support Program (DSP) satellites, the geostationary Space Based Infrared System (SBIRS), and others in highly elliptical orbit.⁵⁶⁷ MDA currently operates two Space Tracking and Surveillance System

(STSS) demonstrators in an 840-mile orbit. An experimental and temporary space sensor layer, the STSS satellites detect and track objects by viewing them from the side, against the cold background of space.⁵⁶⁸ Integrating additional space sensors into MDA's command, control, battle management, and communications (C2BMC) is critical to earlier engagement, especially launch and engage-on-remote.⁵⁶⁹

Potential kinetic and non-kinetic threats to space-based assets have multiplied, holding at risk virtually every satellite in orbit, as well as in-theater ground, launch, communication, and supply-chain segments.⁵⁷⁰ The head of the National Reconnaissance Office (NRO) declared that at least some of his satellites had been lased by China in 2006.⁵⁷¹ China demonstrated its anti-satellite (ASAT) capabilities with the intercept of a weather satellite in January 2007. An additional ASAT vehicle may have been launched into near geosynchronous orbit in May 2013, but Chinese officials have not acknowledged the test.⁵⁷² A non-intercept test in July 2014 is also reported to have been successful.⁵⁷³

Gaps

Space-based platforms are highly vulnerable. They operate in an extremely hostile natural environment, and move along regular, known, and observable orbits. The high velocity of orbital speeds convert any object in space—whether a satellite or debris from an earlier collision—into a potentially destructive projectile. Thus, any country with a space program has the capability, at least at a nascent level, to conduct ASAT missions.

The United States currently has effective space capabilities, but insufficient redundancy and resilience to respond to ASAT attacks.⁵⁷⁴

These deficiencies are alarming in the context of the threats and challenges in the PACOM AOR. China has clearly identified U.S. reliance upon space-based assets as a key weakness it can hold at risk. ASAT represents the most dramatic counter-space option, yet satellites are also susceptible to electromagnetic interference (jamming), and to other means of incapacitating sensors or transmitters (dazzling). Either approach could be permanent or reversible, but would result in a degradation of U.S. space-based capability if not an outright loss.

In the short term, the United States can train with degraded communications to demonstrate a continued high level of warfighting capability should U.S. space assets become unavailable. In the long term, mitigation options include diversifying the satellite constellation to increase the number of targets and building redundancy into the system, hosting payloads on commercial or foreign satellites, and stockpiling reserve satellites and launch vehicles to surge capability into orbit in the event an adversary takes kinetic action against U.S. satellites.

DOD is also beginning to explore PNT and communications capabilities that are not reliant upon space-based assets. Alternatives to satellites include advanced inertia-based PNT, line-of-sight mesh networks, very high-altitude unmanned aircraft operating as communication nodes, and decentralized operational concepts that are less reliant on centralized mission control and satellite communications.⁵⁷⁵

These long-term options are all costly, and some may be politically untenable. Yet, increasing redundancy and lessening U.S. dependence on vulnerable space-based assets are both important elements in any counter-A2/AD concept.

Recommendations

- Create greater resiliency in space-based assets through the hardening of payloads, deployment of jam-resistant communication systems, and diversification of host platforms to include non-military and non-U.S. satellites.
- Fund the development of alternatives to space-based capability through non-space based but capability complements such as aerial layer mesh networking and advanced inertial PNT for operations in the most stressing A2/AD environments.

INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE

Through 14 years of conflict in Afghanistan and Iraq, the U.S. military and civilian leadership have grown accustomed to nearly omnipresent ISR. The broad scope and high expectations of these missions places a premium on ISR capacity in the PACOM AOR.

The United States depends on ISR capabilities to monitor events and to ensure sufficient preparation time to respond to threats and emerging crises throughout the PACOM AOR. Specifically, ISR monitors potential military threats from North Korea, Russia, and China, and, as needed, provides information on other security concerns such as maritime disputes, and humanitarian relief needs.

ISR capabilities include a range of sensors and platforms operating both in the atmosphere and in space. While platforms—especially unmanned platforms—receive the greatest attention, designing and adequately resourcing the processing, exploitation, and dissemination (PED) systems and personnel that convert the data collected through ISR missions into useful information is of equal importance. This section will focus on aerial ISR capabilities with some consideration of space-based national assets (which are also discussed in the space section) and maritime sensors on surface and subsurface vessels.

ISR systems are vital to successfully realizing Air-Sea Battle, which in many ways harken back to the AirLand Battle concept of the late Cold War era, which was enabled by transformative increases in battlespace awareness. ISR will also be a key enabler for potential follow-on concepts such as JAM-GC. ISR is not only vital for understanding the steady state dynamics of the Asia-Pacific region but also for finding and fixing adversary targets in a conflict. Robust, survivable ISR in all domains is a requirement for any counter-A2/AD concept.

Capabilities

Space-based assets are able to cover the widest surface area, but do so on a set schedule, limiting their frequency of collection and enabling an adversary to disguise certain activities during known observation periods. Frequent adjustments to the orbit of a satellite (and hence what it is able to observe) will reduce its life expectancy as there is no cost-effective way to refuel satellites in orbit. The U.S. constellation of space-based national assets are believed to capture visible, infrared, hyperspectral, and radar images, as well as signals intelligence.

Airborne manned assets are typically large-wingspan aircraft and may include an onboard crew of analysts and sensor operators. These aircraft, ranging from the U-2, which conducts high-altitude surveillance and reconnaissance missions, to the new P-8 maritime patrol aircraft, which conducts a host of maritime domain awareness and antisubmarine warfare missions, provide a flexible and operationally dependable way to conduct ISR missions. However, human limitations constrain the range and duration of manned ISR missions, compared to that of a satellite or an unmanned system.

Unmanned systems are relatively new, and currently are operated by a pilot on the ground, either from a nearby facility or remotely from a base in the continental United States. Platforms such as the RQ-4 Global Hawk can conduct missions lasting over 30 hours without refueling, providing commanders with near-continuous ISR presence over key areas.⁵⁷⁷ The navy currently plans to augment Global Hawk with the MQ-4 Triton unmanned system, beginning in FY 2018. Unmanned platforms currently require reliable satellite or other communications to receive flight instructions from ground stations, and to transmit data to ground-based analysts. In addition, there is concern that adversaries may see unmanned platforms as less escalatory targets than manned aircraft, increasing the risk that adversaries will strike unmanned systems.

Maritime sensors also feed into the ISR enterprise. This diverse range of inputs includes advanced radars such as the Sea-Based X-Band and Aegis systems, and submarines with both passive and active sonar suites. These are especially valuable in PACOM given the maritime nature of the AOR and the long distances that challenge many platforms in the existing airborne ISR fleet. Some limitations do exist. Surface maritime sensors are, in most cases, limited by distance to the horizon when conducting surface track operations. They remain exceedingly capable, however, in detecting and cataloging aerial targets. Subsurface maritime sensors can detect and track targets at extreme ranges if oceanographic conditions are favorable.

U.S. ISR systems produce a large quantity of data that must be converted into usable information. The PED (processing, exploitation, and dissemination) enterprise or “tail” aggregates and synthesizes this raw data into information that provides strategic, operational, and tactical intelligence to inform U.S. national security decisionmaking at levels from the president to a sergeant leading a squad on patrol. In many ways, PED is the limiting factor in ISR operations given its labor intensity. To give a sense of scale, 44 percent of the personnel required to support a single Predator or Reaper combat air patrol (CAP) is devoted to PED.⁵⁷⁸

Skilled intelligence analysts are a key part of the PED process, turning mountains of data into discrete, actionable intelligence. While automated systems may reduce the burden in the future, humans will remain an integral part of ISR analysis as they can combine multiple intelligence sources to build a comprehensive understanding of a given intelligence requirement.⁵⁷⁹

Each military service handles PED differently. The USAF relies upon the centralized Distributed Common Ground System (DCGS) with analysis activities conducted primarily from CONUS-based locations.⁵⁸⁰ The USA uses a more decentralized approach to PED activities as its ISR assets and PED formations are either organic to combat air or military intelligence brigades. The USMC’s ISR fleet is exclusively focused on tactical operations and integrated into the Air Combat Element. At present, the USN does not have a dedicated PED system, although one is under development to support the eventual deployment of the MQ-4C Triton.

Gaps

ISR platforms are among the most-stressed assets in DOD's inventory. Based on the current and planned state of ISR within PACOM, the United States should expect gaps with regards to capacity and capability. More fundamentally, changes will be needed in how the U.S. ISR system will function as compared to the past decade of conflict.

Globally, ISR capacity is insufficient to meet demand. For example, in March 2014 Africa Command (AFRICOM) Commander Gen. David Rodriguez told the Senate Armed Services Committee that only 11 percent of his ISR demand was being sourced. At an earlier hearing, CENTCOM Commander Gen. Lloyd Austin indicated that 85 percent of total U.S. ISR inventory was focused on the CENTCOM AOR. Despite this preponderance of assets, only 62 percent of CENTCOM's demand was sourced. Sourcing solely CENTCOM demand would require a 37 percent increase in the total ISR fleet—with no ISR provided to any other theater. At the same hearing, then-PACOM Commander Adm. Samuel Locklear stated that his ISR requirements were also under-resourced. Officers and officials throughout DOD do not expect ISR demand will ever be fully met given the insatiable appetite of commanders and civilian leaders for information. The United States may need to reconsider how it manages and allocates resources across the ISR enterprise. Such an effort is beyond the scope of this study.

Over the next 10 years, under peacetime conditions, the single-largest gap for U.S. ISR outside of the Korean Peninsula will be the availability of platforms with the range to operate effectively in the PACOM AOR. ISR assets deployed from current U.S. facilities in Guam or Northeast Asia will provide significantly less (approximately half as much) time-on-station than U.S. commanders and political leaders have grown accustomed to with similar platforms in the CENTCOM AOR. Further, as aging assets, such as the U.S. Navy's EP-3 signals reconnaissance aircraft, approach retirement, it will be important for DOD to replace the lost capabilities.

DOD is taking some mid- to long-term actions to counteract the tyranny of distance. The USN plans to add 66 MQ-4C Triton UAS to its ISR fleet over the next 20-plus years. If forward stationed in the region, Tritons would go a long way toward bridging the capacity gap as it relates to distance. However, IOC for the Triton is not slated until 2018.⁵⁸¹ In the short term, DOD could reallocate assets from other theaters of operation to the PACOM AOR. This last approach may have budget implications due to facility construction and would shift risk to other AORs. An additional option to mitigate the gap would be to enhance partnership with countries in the region to share collection or analysis, to include aligning mission timing and tracks to maximize ISR collection in high-interest regions.

China's investments in A2/AD capabilities create challenges for the current U.S. ISR fleet. China's increasingly advanced sensor network and growing anti-air, cyber, and EW capabilities provide the ability to detect, track, and, if necessary, engage most of the existing U.S. ISR fleet. In the event of conflict, the U.S. ISR fleet, as currently configured, would not provide the same level of awareness as it has in conflicts in Iraq or Afghanistan. As USAF Gen. G. Michael Hostage, while head of Air Combat Command, noted, "Predators and Reapers are useless in a contested environment."⁵⁸² This gap is further exacerbated by the unknown reliability of satellite-based C2 links for unmanned ISR assets when operating in an A2/AD environment. Advanced cyber and EW capabilities will also offer non-kinetic tools for disrupting the U.S. ISR fleet.

Accurate, timely ISR will be vital in any strikes against an A2/AD network with road mobile components. Therefore, a penetrating ISR platform, whether manned or unmanned, is a key investment needed to enable future warfighting success. Analysts assess that the USAF operates approximately 20 long-range stealthy ISR UAS.⁵⁸³ The USAF has also acknowledged the existence of a follow-on platform that commentators believe to be significantly larger, with greater stealth capability, and longer range. While the capabilities for either platform would presumably be designed for A2/AD environments and clandestine operations, it is unclear whether the systems that have been publically acknowledged are appropriately outfitted to survive against the most advanced adversary capabilities. In any case, small fleet size would constrain the number and types of missions flown.

Thus, increasing the number of stealthy ISR platforms with assured communication suites able to operate in A2/AD environments in times of conflict and conduct clandestine observations in peacetime will become increasingly important for PACOM. It is possible to bridge this gap in the near to mid-term by increasing investments in stealthy ISR platforms. However, such an increase is unlikely under current budget conditions. Without greater availability of long-range stealthy ISR assets and assured communications systems, U.S. forces operating in the Asia-Pacific will do so at considerably heightened risk.

An additional gap in ISR capability is the shortfall of the current PED system in terms of both available bandwidth for transmission and analytic capacity. Advances in miniaturization enable a steadily increasing number of sensors per airframe. This growth in sensor density, combined with the requirement for ISR platforms to provide data in real-time to analysts and decisionmakers, requires ever-expanding bandwidth. Open-source estimates for ARGUS-IS, for example, indicate that it captures approximately 400 GB per second of data.⁵⁸⁴ ARGUS-IS is the second-generation sensor in the Gorgon Stare increment 2 wide area sensor, one of the most advanced collections packages available to the United States.⁵⁸⁵ Even utilizing very high compression ratios and advanced onboard analytic algorithms, Gorgon Stare requires tremendous bandwidth that must be provided wirelessly and in contested environments.

While software development will ease bandwidth requirements and enable some degree of autonomous onboard analysis, the need for greater capacity in battlefield communications—especially communications relayed via space—will likely limit the availability and ubiquity of real-time ISR data in the Asia-Pacific. Should data collection outpace available bandwidth, as is likely, sensor data would not be disseminated from a platform until it returns from its mission, a return to an earlier operational paradigm for ISR operations that would significantly reduce a U.S. advantage.

Furthermore, the volume of data being disseminated from ISR platforms to analysts in the “tail” strains current capacity to review and analyze the information. To give a sense of scale, in 2013 the USAF predicted that the PED manpower needed to support UAS operations was over 9,900 personnel.⁵⁸⁶ Reports in 2014 suggested that the USN would reach a tipping point in 2016 where the data produced by intelligence systems would overwhelm analyst capacity to keep up with the tasks.⁵⁸⁷ As mentioned previously, autonomous technologies and machine learning will allow some of the burden to be shifted from human analysts. When sufficient communications infra-

structure is available, some of the intrinsic limitations of housing these technologies on-platform—such as high processing power and cooling requirements—are less of an issue, as they can be located off the collection platform in an intelligence center.

Conducting ISR in a contested airspace like that expected in an A2/AD environment is out of alignment with the U.S. paradigm of ISR operations over the past decade. Over the past 14 years of combat in Afghanistan and Iraq, the United States has operated with near impunity in the air domain against adversaries with little air or counter-air capability. As a result, the military has grown accustomed to having a significant battlespace awareness advantage over its adversaries. Over the same time period, China has made advances in counter-air and counter-space capabilities that could diminish the operational capability of U.S. space-based ISR capabilities, both airborne and space-borne.⁵⁸⁸ Barring a truly massive investment in both space and aerial ISR platforms optimized for non-permissive environments, U.S. commanders would operate with significantly less battlespace awareness than is currently the norm.

Recommendations

- DOD should develop a robust aerial ISR system able to operate in the most denied environments. This system should build off of and advance the existing lines of effort represented in LRS-B and UCLASS.
- DOD should steer investments into autonomous imagery exploitation systems for both aerial and space-based systems to improve the throughput of the PED system and optimize the utilization of increasingly scarce human analysts.
- The USN should develop a PED system with operational analytic centers attached to the fleet patrol wing level, to maximize the capabilities of the Triton. This should be augmented with strategic analytic centers attached to the USN's theater-level component commands.
- The USN and USAF PED systems should be interoperable, support operational and strategic commanders, and be compatible with systems operated by U.S. allies and partners. Joint manning with options for combined manning, where appropriate, should be an objective for Asia-Pacific PED architecture.
- DOD should coordinate plans for ISR missions with allies. It should share analysis work among allies in areas of mutual interest and concern, particularly the South and East China Seas.

CYBER

Cyber threats originating from the Asia-Pacific region targeting the United States and its allies have grown rapidly in complexity and intensity in recent years. The primary driver of this growth is the expanded use of cyber intrusions, exfiltration, and espionage by China and North Korea, who view cyber as an asymmetric alternative to countering U.S. military superiority in conventional warfare. Both countries are aggressively building cyber capabilities and manpower. China in particular has demonstrated improved ability and greater intent to disrupt U.S. military networks and systems, map U.S. networks, and steal sensitive technological information.⁵⁸⁹ North

Korea is actively seeking to leverage the capabilities and resources of other nations and third parties, including transnational criminal organizations, to conduct cyber intrusions and espionage against the United States and its allies and partners.⁵⁹⁰

The 2008 breach of classified U.S. military networks—code-named Buckshot Yankee—was a wake-up call for the Defense Department. At the time, it was the most significant cyber intrusion of U.S. military computers in history. It set into motion the creation of Cyber Command (CYBERCOM) and a range of efforts to improve DOD cyber defenses and capability to respond to cyber attacks.⁵⁹¹ Since then, DOD has made progress in improving cyber defenses, but it does not yet have the capability or capacity to conduct effective joint cyber operations.

Augmenting existing cyber capabilities and ensuring that this domain is seamlessly integrated into operational planning for both fires and protection will be key in maintaining U.S. advantages in precision strike and communications. In addition, the use of offensive cyber will be needed for unlocking adversary A2/AD networks. The power of cyber to enable and support other missions is very similar to that of EW. This confluence is not limited to effect; cyber and EW are increasingly being viewed on a continuum. To fully unlock the potential of operations in both domains and maximize their efficacy, they will have to be seamlessly integrated.

Gaps

Capability gaps and shortfalls for joint cyber operations fall into three categories: technology, processes, and cooperation with allies and partners. Because the Defense Department as a whole is in relatively early stages of developing full-spectrum cyber operations capabilities, these gaps and shortfalls are applicable to essentially all regional and functional joint commands.

Technology

Operationalizing cyber across the joint forces will require significant investment in technologies to enable military planners and operators to understand, plan, manage, and execute cyber operations in real-time and across dynamic network environments. Joint commands, including PACOM, and U.S. allies and partners in the Asia-Pacific region, lack a number of underlying systems, platforms, and tools for effective cyber operations, but the top three technical capability gaps are outlined below.

Situational Awareness. Presently, the military does not have adequate situational awareness of the cyber domain to identify and understand actual or potential threats to DOD networks. Nor does it have the necessary situational awareness to conduct effective reconnaissance for targeting of adversary nodes in cyberspace. Situational awareness should include platforms, sensors, and software to rapidly collect, fuse, analyze, and visualize data from a global network of sensors to deliver a reliable picture of blue, red, and gray systems, including their physical locations, vulnerabilities, and activities. This information should also be available in real-time with customizable interfaces to support different users' roles as network operators, mission commanders, and threat analysts. In building a common operating picture, cyber operations can enhance a range of capabilities discussed in this section. For example, ISR could be conducted "virtually" and reveal the physical location of vital nodes or sensors in a network.

Expendable and On-Demand Capabilities. A challenge for cyber operations is that the use of a capability may reveal its functionality and compromise future effectiveness and thus the ability to reuse the capability. Given the one-time use of many cyber tools, there is need to develop technologies that enable rapid generation of capabilities and reduce the cost of creating each individual capability. The current state-of-the-art is that cyber tools are developed to specific conditions and attributes about the target and surrounding network conditions, yet it is difficult to confirm whether reality conforms with expected conditions. Cyber tools should also be designed to operate and create effects within complex and dynamic network conditions, with few environmental dependencies. They should also be designed to allow operators to reconfigure and repurpose tools on-the-fly. If this vision can be achieved, commanders will be able to conceptualize cyber as a type of everyday munition rather than a silver bullet.

Modeling, Simulation, and Analysis. Predicting risk, battle damage, and the likelihood of success of using cyber tools is required if DOD is to conduct effective cyber operations. This requires systems to model, simulate, and assess the performance of cyber capabilities and analyze courses of action for both defensive and offensive operations. Systems should be capable of emulating adversary network conditions, and should enable military planners to simulate the plan against uncertain network parameters and active adversarial actions taken to thwart or degrade the operation. The assessment process should also measure the performance and effectiveness of cyber fires to deny, degrade, disrupt, destroy, or manipulate target systems.

Operations Planning Process

Joint Force Commanders (JFCs) must direct operations in cyberspace as in other domains of warfare. Despite the technical complexity of cyber operations, JFCs should direct cyber operations at the operational level using existing doctrine and existing joint operations planning and execution processes. The existing joint operations planning process that uses mission analysis to produce plans and the current joint targeting cycle can be used for cyber.⁵⁹³ As mentioned previously, these processes still need to be adapted to cyber operations, but entirely new processes are likely unnecessary.

Cooperation with Allies and Partners in the Asia-Pacific

DOD engages in a range of activities to improve cybersecurity and cyber operations capacity in the PACOM AOR. Australia, Japan, and South Korea are strong allies in the Asia-Pacific region with cyber capacities that can be leveraged to support U.S. defensive and offensive cyber objectives.⁵⁹⁴ Enhanced information sharing of threat indicators and cyber intelligence could significantly improve overall situational awareness of cyber threats in the region. To the maximum extent possible, this sharing should be standardized and automated. PACOM should also include a more robust role for key regional allies and partners in all training exercises where cyber is either the focus or an element of a broader exercise. Exercises should test information sharing to improve situational awareness and network defense, as well as joint collaboration in incident response and mitigation. As appropriate, these exercises should also practice leveraging tools, capabilities, infrastructure, and manpower in operational settings.

Recommendations

- Cyber operations should be a component in all wargames conducted by PACOM and its major subordinate commands in order to ensure that commanders have operational fluency with this vital technology.
- The Defense Department should fast-track development of a common operating picture for cyber operations that can be pushed forward to the operational and tactical levels. This information should be integrated into existing ISR frameworks in order to add another level of richness to commanders' understanding of both the physical and virtual battlespace.
- PACOM, in cooperation with CYBERCOM, should hold annual discussions with key regional allies and partners about cyber capabilities. Such discussions should include the ways in which ally and partner authorities may differ from U.S. authorities and the ways in which such differences may be leveraged in a contingency operation.

ELECTRONIC WARFARE

DOD breaks electronic warfare (EW) into three components: electronic attack, electronic protection, and EW support.⁵⁹⁵ This section focuses primarily on the electronic attack and EW support as they relate to finding, fixing, and disabling enemy capabilities reliant upon the electromagnetic spectrum.

EW systems are cross-domain, with the ability to degrade a wide array of adversary capabilities. EW systems are key capabilities in any counter-A2/AD operational concept. Recently, Deputy Secretary Work highlighted the importance of EW by creating an associated executive oversight body, the Electronic Warfare Programs Council. Deputy Secretary Work noted, "for relatively small investments [in EW] you get an extremely high potential payoff," but despite this, the U.S. lead in EW is "diminishing rapidly."⁵⁹⁶

EW capabilities will be vital to the successful implementation of concepts such as JAM-GC as it creates difficult problems for enemy IADS. The next generation of EW systems may be able to neutralize adversary sensor networks through non-kinetic means while manned platforms remain at standoff ranges. This transformative technology that should be prioritized as part of the DII.

Capabilities

The United States currently operates EW systems—permanently installed, modular, and disposable systems—from ground, airborne, and naval platforms. These capabilities are used principally either to suppress enemy air defense (SEAD) or to neutralize incoming munitions through non-kinetic means. While the USN has long emphasized EW capabilities, both the USA and USAF have let EW atrophy since the end of the Cold War.⁵⁹⁷

The USA's recent investments have primarily been cell phone jammers to counter remote triggers on IEDs in Iraq and Afghanistan. These USA EW systems would be less applicable in a near-peer conflict as modern communication systems are designed to be resistant to many forms of jamming. Put more simply, the technologies used to jam consumer cell phone signals will not be applicable to counter A2/AD networks with military-grade communications infrastructure.

Dedicated airborne EW platforms include the USMC's E/A-6B Prowler, USN's E/A-18G Growler, and the USAF's EC-130H Compass Call.

- USN is procuring the E/A-18G Growler as the replacement for the venerable E/A-6B Prowler, although the Growlers aircraft will continue to use legacy jamming equipment inherited from Prowlers. The USN will complete its acquisition of Growler airframes in 2017.⁵⁹⁸ However, full operational capability of these aircraft will not be reached until the Next Generation Jammer is fielded in the early 2020s.⁵⁹⁹ The Next Generation Jammer will be a major step forward with greater accuracy, power, and frequency response.
- The USMC will continue to fly the Prowler until it is replaced by the F-35 beginning in 2019.⁶⁰⁰
- The USAF operates the EC-130H Compass Call, a variant of the Hercules transport aircraft equipped with a sophisticated EW suite. Compass Call aircraft have supported combat operations in Afghanistan and Iraq. The USAF has indicated that it plans to reduce the fleet from 15 to 8 aircraft. The transfer of these aircraft to inactive status has caused some concern from outside advocates and Congress, given the relative paucity of EW assets.⁶⁰¹ That said, the Compass Call's utility in a near-peer conflict is unclear given that the Hercules platform is large, non-stealthy, relatively slow, and with little self-defense capability.

Beyond aircraft, the United States employs a decoy drone, the ADM-160B Miniature Air-Launched Decoy (MALD), for SEAD. This expendable munition has a 550-mile range, can loiter to locate targets, and is able to mimic the emissions signature of U.S. aircraft to confuse enemy systems.⁶⁰²

The USAF and USN have developed a stand-in—that is, penetrating—jammer variant of the AIM-160, the MALD-J. The MALD-J has the ability to increase the efficacy of airborne EW platforms given its range, persistence, and advanced data link. The MALD-J retains the spoofing capabilities of the earlier system, meaning that operators can toggle the system between decoy and jam in real time.⁶⁰³

In the SEAD mission, having a disposable EW munition that provides the launch platform a meaningful standoff range is critical. The standoff range provided by a jamming munition decreases the threat to pilots and potentially increases the number of aircraft that can be used for SEAD. This is an excellent example of how a high-end capability can be used by less advanced aircraft.

The United States relies upon one legacy shipborne defensive EW system, the SLQ-32, designed in the 1970s. This system is integrated into the vessel's combat weapons systems and offers radar emission threat detection, cueing for chaff systems, and, in some models, active jamming. The USN recognizes that this system, despite some upgrades, is woefully out of date. The Surface Electronic Warfare Improvement Program (SEWIP) is an effort to inject modern technologies into the SLQ-32 system. The Block II increment, with improved threat warning, and Block III increment, with new jammers, are both in testing.⁶⁰⁴ This technology injection will greatly increase the system's effectiveness, as it will provide USN vessels a non-kinetic option to attack and neutralize incoming radar-guided munitions.

It is important to note that the Active Electronically Scanned Array (AESA) radars currently fielded in F-22s, F-35s, E/A-18Gs, and being retrofitted to F/A-18s and F-15s have some level of EW

capability due to the extremely flexible nature and high output power of their transmitters.⁶⁰⁵ The intrinsic ability of AESA radars to carry out EW missions is not necessarily a replacement for dedicated platforms. The power generation and transmitters of a dedicated platform like the E/A-18G increase their effectiveness on a target, and the additional manpower allows them to more effectively manage the EW mission.

As noted in the cyber section, the emergence of cyberspace as a warfighting domain has profound implications for EW activities. Wireless communication technologies are susceptible not only to jamming but to exploitation by cyberattack. EW platforms will serve an important role in cyber conflicts by delivering network attack payloads to wireless or air-gapped networks. In this context, wireless includes any communication system that uses the electromagnetic spectrum to transmit information. The U.S. military and the U.S. intelligence community are working toward realizing the convergence of cyber and EW capabilities.

Gaps

There are clear and worrying gaps in EW. A major issue is that EW investments over the past decade have been biased toward lower-end capabilities to combat irregular threats. The United States currently lacks EW capacity and certain capabilities to counter the threat of advanced IADS. Further, the United States has not fully integrated electronic warfare in ways that complement and enhance existing and planned systems.

Of greatest concern is a large shortfall in dedicated EW airframes. Once the E/A-6B is retired from USMC service and the USAF reduces its fleet of EC-130Hs to 8 aircraft, there will only be 143 EW platforms between the USN and the USAF, 135 of these being carrier-based E/A-18Gs. Fifth-generation fighters such as the F-22 and F-35 have some organic EW capabilities in their AESA radars and advanced integrated weapons systems; however, they lack the broad coverage provided by platforms with dedicated EW subsystems.⁶⁰⁶

In light of this, the USN is considering purchasing additional E/A-18Gs to meet the expected demand for EW across the joint force.⁶⁰⁷ In addition, there has been speculation that the LRS-B program could include some EW capabilities. Whether this will be a dedicated complementary platform or a component of the basic bomber remains unclear.⁶⁰⁸ If the services take these steps, this gap may be mitigated in the mid-term (by the E/A-18G) and in the long term (by the LRS-B).

Another capacity gap is the lack of integration of EW payloads on unmanned platforms. Low-cost, unmanned systems equipped with jamming payloads could offer similar capabilities to the MALD-J with longer loiter times and potentially greater power output levels. The USAF's future UAS roadmap outlines such a system when discussing a new generation of small, disposable, air-launched unmanned systems.⁶⁰⁹ In addition, in a large-scale conflict, existing legacy systems such as the MQ-1 Predator could be used on a semi-disposable basis in an EW/decoy role to provide additional EW capabilities against the most capable IADS.

More robust solutions include an unmanned or optionally manned EW and ISR platform as part of the LRS-B program or integration of the Next Generation Jammer on UCLASS. Either approach would provide more robust EW capabilities to support the inherent yet limited EW systems on

fifth-generation platforms such as the F-35. Such solutions remain in the conceptual or development stages and may not bear fruit until the mid-2020s.

Another challenge is that the SLQ-32 Block III may be unable to deal with the most advanced threats despite the SEWIP program outlined above. The USN has several other programs underway to improve the EW components of its surface warfare systems. The most innovative of these is the Office of Naval Research's (ONR) Integrated Topside (InTop) effort. The goal of this research effort is to develop an open architecture of transmitters and software that fuse communications, radar, and EW capabilities. Some of the technology developed under the auspices of InTop has been folded into the SEWIP program.⁶¹⁰

The revolutionary part of InTop is the potential for a vessel to devote all of its available transmitters, including the main radar such as the next-generation AMDR, to the EW role. Adapting the AMDR to this role would require some modifications that are not currently planned, but are well within the theoretical capabilities of the design.⁶¹¹ Given the threat posed by advanced missile systems such as the DF-21D ASBM and YJ-18 ASCM, this investment in non-kinetic missile defense may be warranted.

Broadly speaking, the above gaps derive from the inability to project EW effects in a denied environment. At a systems level, this gap may be mitigated through increasing the autonomy of EW arrays and integrating them into a wide array of munitions. An example of such a technology is the Counter-Electronics High-Power Advanced Microwave Project (CHAMP), which places an extremely high-energy microwave weapon inside the airframe of the Joint Air-to-Surface Stand-off Missile Extended-Ranger (JASSM-ER).⁶¹² This EW system-to-munition pairing would give an aircraft a standoff range greater than that offered by the MALD-J: 620 miles for CHAMP versus 550 miles for MALD-J. CHAMP and similar systems could become key technologies in the DII.

More importantly, CHAMP is the next step beyond MALD-J as CHAMP destroys, not just disrupts, enemy sensor networks through non-kinetic means. Adding such a capability into a counter-A2/AD concept such as JAM-GC would allow enemy mobile sensor networks to be held at risk from long ranges without using scarce stealthy strike platforms. Autonomous EW munitions seeded into a strike salvo could target and neutralize enemy sensors as they come online. This would greatly complicate the salvo competition calculus for an adversary and, in turn, impose substantial costs on an adversary.⁶¹³

Recommendations

- The USAF should reemphasize the role of offensive EW in penetrating strike missions, to include ensuring sufficient stockpiling of MALD-J in the region and the prompt integration of these munitions with the F-35.
- CHAMP should be placed on an accelerated development track along with autonomous targeting subsystems for EW munitions to enable highly effective operations to be carried out in denied or degraded communications environments.
- The USN should explore ways of projecting EW effects ashore by integrating the EW munitions described above into VLS systems on surface and subsurface combatants.

NUCLEAR FORCES

No other portion of the globe hosts a more complex, dynamic, and potentially threatening set of nuclear challenges to U.S. interests than the Asia-Pacific region. While Russia remains the greatest existential nuclear threat to the United States, the Asia-Pacific region presents the highest risk of nuclear employment. PACOM's AOR includes three nuclear-armed states—India, China, and North Korea. Yet regional nuclear dynamics are not confined to those three states. Russia and Pakistan lie just outside the region and they help to drive nuclear competition, shape the nuclear balance, and contribute to the risk of nuclear escalation, use, and conflict throughout the region. All five countries possess widely varying nuclear postures, intentions, program maturities, and doctrines that leave open substantial risk of insecurity, miscalculation, mistrust, and human error.

Strategic Stability and Deterrence

China is the most opaque of the recognized nuclear weapons states. The United States seeks strategic stability with China but, unlike with Russia, has no track record of arms control or transparency to shape common perceptions of stability. Traditionally, Chinese restraint from nuclear sabre rattling, from coercive nuclear diplomacy, and from direct nuclear competition (as between the Soviet Union and the United States in the Cold War) has contributed to an overall atmosphere of nuclear stability with the United States. However, China is modernizing its nuclear fleet (to include an expanding sea-based leg), diversifying and hardening its nuclear posture, and managing its own complex strategic stability challenge—with Russia to its north, India to the south, and the United States to the east. Moreover, China's growing capabilities in space, cyber, and advanced missile systems further complicate the deterrence picture—calling into question the validity of a nuclear deterrence policy based solely on the nuclear balance. With capabilities and complexity increasing, confidence in strategic stability is likely to decline in the years ahead.

Theater Nuclear Balance and Risk of War

The risk of nuclear conflict runs high in the Asia-Pacific region. India and Pakistan coexist in a state of tenuous restraint. Perceiving an excessive risk from India's conventional superiority and its "Cold Start" military posture, Pakistan is further diversifying its nuclear arsenal in terms of delivery, yield, and concepts of operation to support a range of strategic and tactical objectives vis-à-vis India. Pakistani shifts in nuclear doctrine and capability increasingly appear to mirror Russian intentions to consider the early use of nuclear weapons to persuade a conventionally superior adversary to back off—in other words using nuclear escalation to deescalate a conventional conflict they would otherwise lose. India responds and reacts to Pakistan's rather public posturing through changes in posture and doctrine, many of which are already underway. The India-Pakistan nuclear dynamic will affect perceptions of the U.S. role in the region, the risks associated with nuclear use on a theater basis, and the speed with which a crisis could escalate on the subcontinent. Inevitably, these changes will cascade into the India-China nuclear dynamic, especially if the nuclear competition on the subcontinent begins to move India closer to nuclear parity with China.

Managing a Nuclear-Armed Rogue State

North Korea continues to expand and diversify its nuclear arsenal and associated delivery systems. North Korea's erratic leadership and history of provocative behavior raise the risk of nuclear intimidation, coercion, and use, while also undermining confidence in the efficacy of U.S. extended deterrence. Deterrence messaging to Pyongyang remains important, but the United States cannot be confident that signals will be received with the same meaning with which they were sent. Given North Korea's erratic and risk-tolerant behavior, U.S. and regional deterrence efforts focused on North Korea must be accompanied by effective counter-provocation and counter-escalation strategies. Coupled with its history of proliferating nuclear capabilities and missile systems, North Korea is a profoundly dangerous player in the regional nuclear landscape.

Extended Deterrence and Nuclear Security Guarantees

The U.S. legal and political commitments to extended deterrence lie at the foundation of the regional security architecture in the Asia-Pacific region. U.S. treaties provide assurances that the United States will come to allies' defense through military means should they come under attack by a foreign power. By extending the U.S. nuclear umbrella, the United States has assured allies that should they face a nuclear threat, the United States would be prepared to respond in kind on their behalf. As the nuclear shadow has grown over the region, the credibility of these assurances has come under strain for both Japan and South Korea. Simultaneously, North Korea's persistent development and expansion of nuclear and missile capabilities has made these assurances all the more important. A complicating factor is what appears to be North Korea's growing appetite for risk (e.g., the 2010 shelling of Yeonpyeong), which could be the result of increased confidence from possessing nuclear weapons.

For the United States, the stakes have risen with the increased risk of nuclear provocation or use by North Korea. If security conditions erode further, the nonproliferation regime weakens, or the crisis of confidence in U.S. security guarantees takes deeper hold, then political pressures within South Korea and Japan could make nuclear weapons capabilities more attractive to U.S. allies. Japan and South Korea both recognize the inherent dual-use nature of their civilian nuclear power programs. The recent negotiation of a nuclear cooperation agreement between Washington and Seoul managed to avoid approval of South Korean uranium enrichment and spent-fuel reprocessing, but the question may arise in the next decade, especially in light of the legitimization of Iran's uranium enrichment program by the Joint Comprehensive Plan of Action. In particular, South Korea looks to its neighbor Japan as a model of nuclear development. Japan is widely regarded as having achieved nuclear latency, as the only non-nuclear weapon state to possess both uranium enrichment and spent-fuel reprocessing capabilities. Although guided by a strong nuclear taboo, the tenacity with which Japan has pursued enrichment and reprocessing underscores the perceived strategic value of those capabilities.

Regional and Global Nuclear Proliferation Challenges

The Asia-Pacific's complex set of proliferation challenges reaches well beyond its perimeter. These challenges include North Korea's continued role as a leading global supplier of illicit WMD-related goods and materials, China's uneven implementation of proliferation-related financial and trade controls, and the enormous volume of maritime commerce that can help mask illegal behavior.

Capabilities

The United States maintains robust conventional and nuclear strike capabilities, supporting deterrence efforts and treaty commitments. The triad of air-, ground-, and sea-launched nuclear weapons supports U.S. nuclear forces. In addition, capabilities to monitor the testing of nuclear weapons, largely provided by the Comprehensive Test Ban Treaty Organization detection sites operating throughout Asia and the world, provide important detection capability. The overall mission, however, is highly dependent upon conventional presence in the region. The forces most important include missile defenses, conventional strike assets, naval presence for tracking and interdicting capabilities, and air and space assets critical for surveillance and monitoring.

Gaps

Detecting and Identifying Nuclear Acquisition, Development, Testing, and Employment

China, India, and North Korea are all expanding, modernizing, and diversifying their nuclear programs and associated delivery systems while at the same time managing complex deterrence dynamics on their borders, across their region, and vis-à-vis the United States. The United States has vital interests in understanding and monitoring the nuclear capabilities and postures of these countries; limiting nuclear competition; and enhancing strategic warning of potentially hostile, provocative, or destabilizing actions. The United States faces obstacles in this area: detecting and monitoring activities in covert, hardened, or deeply buried facilities; real-time monitoring of materials, weapons, and equipment in transit; and detection of low- or no-yield nuclear testing through seismic and air monitoring. Coupled with the challenges posed by mobile and dual-use delivery systems, U.S. warning windows could be very short. In order to overcome these obstacles, the United States requires persistent surveillance in denied areas and enhanced detection and monitoring of low- or no-yield nuclear testing. Enhanced verification technologies that can support transparency and confidence-building measures with the aim of improving stability and reducing miscalculation will also be required to ensure that international agreements and norms are upheld.

Reassuring Treaty Allies

In decades past, U.S. extended deterrence and nuclear guarantees in the PACOM AOR provided a robust assurance against a remote threat. Today, while this may still be the case for Australia, the tables have turned for Japan and South Korea. Japan and South Korea face a growing nuclear threat and weakening confidence in the extended deterrence relationship, especially given the concern that North Korea may be prone to miscalculation. This reality has prompted both Japan and South Korea to ask more detailed and complex questions about the extended deterrence relationship with regard to signaling, shared decisionmaking, and C2 dynamics.

In order to message effectively to potential aggressors and dissuade development of independent nuclear weapons-related capabilities, the United States must demonstrate the credibility of its commitment to its allies in visible and compelling ways. In recent years, the United States has developed an Extended Deterrence Dialogue with Japan, and an Extended Deterrence Policy Committee with South Korea, in an attempt to build confidence in each bilateral relationship and to promote a more sophisticated dialogue on this complex topic. Even so, significant capability gaps limit the U.S. ability to manage these extended deterrence relationships effectively. Today, the United States lacks a sufficient range of response options to signal, compel, and defeat the nuclear adversaries facing our allies, and by extension to inspire confidence in U.S. nuclear guarantees. Proportional and timely response lie at the heart of credible assurances and deterrence. In addition, it is unlikely that the United States would detect early development of a nuclear weapons program in Japan, given the high state of nuclear latency and the ease with which covert weaponization could occur. The probability of detection is slightly higher regarding South Korea, which has a lower level of nuclear latency.

The United States could improve its range of response options by improving detection methods to catch emerging nuclear capabilities; ensuring a credible and prompt conventional strike capability; building layered defenses to outpace growing missile threats; and developing a range of capabilities to enable nuclear materials, weapons, and equipment to be located, secured, dismantled, and removed from a conflict zone. Signaling could also be improved by investing in a diverse range of scalable and proportional nuclear and possibly non-nuclear options to demonstrate U.S. resolve in the face of nuclear aggression.

Ensuring Proliferation-Free Commerce and Detecting and Interdicting Illicit Activity

Interdicting WMD-related materials depends first on detecting a potentially illicit transaction or transfer with sufficient detail to enable a timely response. This is especially challenging with regard to North Korea given its extensive denial and deception tactics. When an illicit transaction or transfer is identified, the United States must have options to monitor, track, and prevent the transfer. The United States faces critical capability gaps in this area, including lack of timely and detailed actionable intelligence; challenges in tracking and identifying vessels of concern when visual monitoring is limited by weather or denial and deception tactics; and limited capabilities to impede, delay, or disrupt transactions in process without resorting to high-risk or high-impact boarding operations. All of those challenges increase when critical cargo moves by air or through national waters and territories. In addition, tracking, communicating, and potentially impeding vessels underway depends on the rapid availability of scarce U.S. naval assets for monitoring, surveillance, communications, and other actions. Often such vessels are not available to support interdiction operations in a timely manner, thus limiting U.S. options. Enhanced visibility into DPRK business practices and international activities will be required to identify and provide warning of illicit activity that has implications for global counter-proliferation efforts. The persistent surveillance required to identify nascent nuclear capabilities is also necessary for monitoring these activities under a range of weather conditions and at standoff distances. Lastly, the United States should consider expanding disablement or disruption capabilities in order to impede and/or halt the movement of illicit nuclear-related materials and technologies.

Recommendations

- Improve capabilities for detection, monitoring, and surveillance of nuclear weapons acquisition, development, testing, employment, or onward proliferation to expand warning and response times, especially on the Korean Peninsula.
- Ensure that the United States has scalable, proportional, nuclear and non-nuclear response options, complemented by robust missile defenses, to deescalate crises and counter nuclear aggression.
- Diversify the means and mechanisms—through policy, posture, and deployments—by which the United States can signal its resolve in the face of nuclear threats.
- Enhance capabilities to interdict proliferation-related activities to include improved low-visibility monitoring from standoff distances and development of disablement or disruption technologies to broaden response options.
- Improve capabilities to locate, secure, disable, or remove nuclear weapons in the face of instability or conflict.

MUNITIONS

With munitions in the PACOM AOR, the United States faces several demands:

- Acquiring large numbers of precision munitions for a ground war against North Korea.
- Acquiring adequate numbers of highly sophisticated munitions for an air and naval conflict with a peer competitor, such as China.
- Acquiring adequate inventories of anti-missile munitions because demands will be high in any conflict with a missile-armed adversary.
- Acquiring non-lethal munitions for other contingencies.

Capabilities

Munitions for a Conflict on the Korean Peninsula

A conflict in Korea would place a high demand on precision air-to-ground and ground-to-ground munitions. Deeply buried and heavily protected bunkers are the most demanding targets. Counter-air and counter-ship munitions would also be needed, though at lower levels. There would be significant demand for anti-missile munitions given North Korea's missile capabilities, both WMD and conventional.

Air-to-Ground and Ground-to-Ground Munitions. North Korea fields massive ground forces, as described earlier. Technologically most of this equipment is at best obsolescent, if not actually obsolete. Of North Korean tanks, 3,000 or so are of the T-55/T-62 generation⁶¹⁴—essentially half-a-century behind current U.S. tanks and severely overmatched, as seen when employed by Iraq against U.S. forces in the 1991 Persian Gulf War. However, the large numbers of North Korean soldiers, the difficult terrain, and the apparent fanaticism of North Korean troops mean that a ground war would be both intense and potentially prolonged. Such a war would require large

numbers of current precision weapons—TOW/Javelin for ground forces, JDAM/SDM for tactical aircraft, Hellfire/PKWS for helicopters, GMLRS/Excalibur for the artillery. Current global inventories are adequate, but PACOM desires to increase theater stocks so that munitions are readily available in wartime. This reduces demands on lift during early phases of a conflict when demands are great and assets are still being surged. However, this is also expensive because of the need to build secure storage facilities. Rapid repositioning of munitions from CONUS is possible, though with some risk if delays occur.

Munitions against Hard and Deeply Buried Targets. North Korea is renowned for its extensive bunker system. The United States has a wide variety of non-nuclear munitions designed to attack such targets: BLU-109s (1" steel casing with a large explosive warhead and delayed-action fuses), BLU-118s (with a thermobaric—fuel/air—explosive), BLU-113 Super Penetrators, and BLU-116 Advanced Unitary Penetrators. However, conventional munitions cannot destroy all such targets. Some are too strongly protected. Because these kinds of targets are also seen elsewhere in the world—in Iran, for example—and because the assets protected are highly valuable, work on refining this capability will need to continue. Additional, specialized capabilities will also need to be maintained to hold these targets at risk.

Anti-Ship Munitions. Most North Korean navy vessels are small patrol-size craft, which would be extremely vulnerable to modern munitions. More dangerous are North Korea's more than 70 submarines, which could hide in its difficult coastal areas, and its fast infiltration boats for special forces. The challenge here is ISR. Existing munitions and inventories can handle these threats if they can be located.

Anti-Air Munitions. Most North Korean aircraft are old—of the MIG 17/19/21 era—and can be handled by current inventories of existing munitions. UAS platforms have become widely available and provide a special challenge because of their generally small size. Although North Korean UAS capabilities are still limited, the United States counter-UAS capability is also limited because the United States deactivated most of its short-range air defenses at the end of the Cold War.

Munitions for a Conflict with a Peer Competitor

Peer competitors create an A2/AD environment that requires standoff munitions and sophisticated counter-measures.

Anti-Surface Warfare. The USN has a family of weapons including Harpoon, Standoff Land Attack Missile-Expanded Response (SLAM-ER), Joint Standoff Weapon, and the Mk-48 torpedo, as well as short-range weapons such as ship-launched Hellfire and Griffin missiles. The Long Range Anti-Ship Missile (LRASM) is planned to enter the fleet in 2019, which should meet PACOM's identified near-term need for a long-range sea- and air-launched anti-ship missile, though it may not be available in desired quantities for some time. Longer term, the Offensive Anti-Surface Warfare Weapon will provide additional capabilities. The Air Force has the Conventional Air Launched Cruise Missile (CALCM) and its replacements, JASSM and JASSM-ER. For both services, hypervelocity missiles provide a major potential increase in capabilities, but their development history has been uneven and it may take a while for them to be fielded.

Longer term, expanding ASuW capabilities to mobile land platforms, consistent with existing treaties on such munitions, would be a new capability with great potential. In peacetime, these units could be forward stationed at established bases on Okinawa, Guam, and Australia. In time of conflict, they could move to maritime choke points and to threatened littorals. Anti-ship missiles launched from land would severely constrain a potential adversary's freedom of movement at sea when faced with linked engagement zones in island chains or barriers. Mobility would enhance the launchers' survivability, so they could operate in A2/AD areas, increasing the difficulty for adversary ISR and targeting compared to a ship-only presence. All the technologies exist now. Although the United States has not had such a capability since World War II, many other nations do maintain this capability.⁶¹⁵ This capability might fit in the USA or USMC field artillery communities and, in a maritime A2/AD conflict, would have more relevance than traditional fires.

Antisubmarine Warfare. The United States developed and fielded highly sophisticated ASW munitions during the Cold War to counter the threat from the Soviet submarine fleet, and those capabilities have continued with procurement of the Mk-54 and Mk-48 torpedoes (although recent testing identified shortfalls in performance of the Mk-54). However, this is the one major mission area where the United States has no actual combat experience since World War II. Further, the United Kingdom's experience in the Falklands War indicates possible high usage of ASW munitions. This unusually high level of uncertainty creates risk. The United States has conducted ASW tests and exercises against representational targets borrowed from allies. Because of the high uncertainty and high stakes in this mission area, such tests and exercises are highly important.

Air-to-Air. AIM-9X and AIM-120D (AMRAAM-D), both currently in procurement, are designed to handle air threats in a sophisticated countermeasure environment. Inventories of these most advanced variants are still limited, though upgrades of earlier versions are also very effective. Proposed FY 2016 procurement quantities roughly doubled the FY 2015 amounts. In addition, there are large inventories of un-upgraded, earlier variants of both munitions, stored both in CONUS and overseas.

Missile Defense Munitions

North Korea's strategic rocket forces pose a severe threat, especially with WMD warheads. A peer competitor such as China would have large numbers of highly accurate and long-range missiles, conventional and nuclear, ballistic and cruise. All would put great demands on missile defense. The United States has four missile defense munitions in production:

- *SM-3 Block IB.* The SM-3 family provides missile defense capability on Aegis-equipped ships. Block IB is part of an evolutionary upgrade from Block I to (eventually) Block IIA and adds capabilities against medium-range missiles.
- *SM-6.* This naval missile provides extended-range interception of aircraft and ASCMs, over both sea and land. Recently it also demonstrated capability against SRBMs.
- *THAAD.* This land-based long-range "hit-to-kill" interceptor destroys ballistic missiles inside or outside the atmosphere.
- *PAC-3/MSE.* This land-based missile provides hit-to-kill, surface-to-air interception of tactical ballistic missiles, cruise missiles, and aircraft.

Collectively, these munitions have the needed capabilities but are not forward deployed in adequate numbers. Rapid resupply from stocks in CONUS would be needed. Additionally, these munitions would need to be sent rapidly to the right locations within theater at the outset of the conflict to protect U.S. bases, operations, and territory. Unlike with other precision munitions, DOD has not increased procurement quantities of missile defense munitions.

Non-Lethal Munitions for Other Contingencies

Non-lethal capabilities, including inventories of non-lethal munitions, can be extremely useful for crowd control and force protection. Although both missions are the responsibility of the host nation, situations can arise—in war, in disasters, or in postwar stabilization—in which U.S. forces are forced to take on those roles. Current capabilities of non-lethal weapons include counter-personnel and counter-materiel abilities. Training on these systems has increased with non-lethal weapons being used in exercises such as COBRA GOLD 2012. Looking forward, development of more sophisticated systems, such as an indirect fire munition, are being tested.⁶¹⁶

Such capabilities have obvious humanitarian value as they reduce injuries to civilians. They also serve an important political function by reducing friction with host governments and by maintaining support from the U.S. public, both of which may question the U.S. role if too many civilians are killed or injured.

Gaps

In many categories of munitions, the United States has large inventories of older versions. Ideally, DOD would also procure large numbers of the most modern munitions. However, resource reductions from the Budget Control Act and subsequent budget agreements have affected all modernization, including munitions. The USN, for example, had to delay procurement of 1,000 weapons in its recent five-year plan.⁶¹⁷ Further, DOD tends to fund platforms at the expense of munitions. Devising a viable munitions strategy is therefore challenging.

In a conflict with a peer competitor, capability is particularly important because munitions may require sophisticated features to be effective. To this end, Deputy Secretary of Defense Bob Work notes, “The first aspect of the Third Offset Strategy is to win a guided munitions salvo competition.”⁶¹⁸ Forward deploying advanced munitions in hardened facilities reduces risk—Guam is the highest priority because of missions expected to be conducted from there—but building these facilities is expensive.

DOD has made a significant commitment to stockpiling munitions, having greatly increased procurement quantities in the FY 2016 budget of anti-air and ground-attack munitions: AIM-9X, AIM-120D, SDB II, JASSM, and JDAM. It has slightly cut PATRIOT and THAAD missile procurement. Where shortfalls occur, rapid resupply from U.S. global inventories will be needed, but such action must be preplanned to be effective in a crisis. If global inventories of the most advanced munitions become depleted, then older versions would need to be used.

In a large conflict with a less sophisticated opponent like North Korea, legacy and shorter-ranged munitions will be more usable. Attention needs to be given to having enough air-to-ground munitions like JDAMs for the early phases of a conflict since this is the most critical period and the U.S. contribution will be mainly from the air.

A key risk will be the loss of legacy Dual-Purpose Improved Conventional Munitions (DPICM) on January 1, 2018. These legacy munitions have dud rates that are too high and by policy will no longer be used. This policy leaves a large hole in munitions inventories that will take many years to fill with improved munitions.

A key consideration is the slowness of the industrial base to respond to new demands. Most munitions have procurement lead times around 24 months. Therefore, unless a future conflict lasts years, the United States will fight with whatever it has—in munitions, spare parts, and platforms—at the beginning of the fight. In some areas production bottlenecks can be eased by detailed supplier analysis, as was done recently for the AIM-9X.

A final consideration is the need of allies. Allies are expected to provide their own munitions and logistics. The United States has no formal requirement to supply munitions to allies, and such needs should not be the basis for acquisition. However, the United States should have the mechanisms in place to provide such support if U.S. munitions stockpiles outlast those of U.S. allies or partners. Establishing this mechanism would likely require the United States to create greater local stockpiles of munitions expected to be in short supply.

Recommendations

- Forward deploy additional munitions to Guam, Japan, and Korea in hardened facilities.
- Continue acquisition of advanced munitions, at the PB 2016 level. Increase procurement of missile defense missiles until success of follow-on technologies is assured. Give PACOM priority on fielding of these new munitions. Resolve production bottlenecks where they constrain production rate.
- Include advanced munitions in the Third Offset strategy.
- Where there are shortages in forward-deployed munitions, plan to globally source munitions during conflicts, taking risks in other theaters, if necessary by relying on older versions.
- Develop mechanisms for emergency resupply of allies, if such becomes necessary.

STRATEGIC MOBILITY, READINESS, AND LOGISTICS

Capabilities: Strategic Mobility

Because PACOM covers 52 percent of the globe and U.S. forces in the PACOM AOR face the possibility of highly demanding conflicts with China or North Korea, strategic mobility is of paramount importance. DOD defines strategic mobility as “the capability to deploy and sustain military forces worldwide in support of national strategy.”⁶¹⁹ To accomplish this, DOD uses the Defense Transportation System (DTS). The system includes everything needed to move a unit “from fort to foxhole”—that is, from peacetime garrison to wartime location. Resources include aircraft, ships, barges, prepositioning, infrastructure—such as seaports, airports, railways, highways, pipeline pumping and terminal stations—and automated information systems to tie the system together, such as in-transit visibility (ITV) and traffic management. The system uses both military and commercial assets.

The commander of United States Transportation Command (TRANSCOM) oversees the system. TRANSCOM runs day-to-day operations and supports war planning, both deliberate and rapid.

The intercontinental element of strategic mobility has three major components:

- *Airlift*: Movement by long-range aircraft, which can be military or civilian. Airlift is fast but costly.
- *Sealift*: Movement by ship, classified into three pools of assets: U.S. government-owned, U.S. flag commercial, and foreign flag commercial. Sealift can move massive amounts of cargo and historically 95 percent of wartime cargo goes by sea. However, it is slow and typically takes at least 30 days to arrive.
- *Prepositioning* (both land, in warehouse complexes ashore, and maritime, afloat on cargo ships): Prepositioning places military equipment and supplies at or near the point of planned use to speed deployment of a force during initial phases of an operation. Prepositioning greatly reduces the amount of transportation needed during a crisis because only troops need to be transported, but operations require a permissive security environment and prepositioning may not be in the right location.

In PACOM, one Maritime Prepositioning Ship Squadron (3d) is customarily stationed in Guam with enough supplies to support a Marine Expeditionary Brigade (MEB), roughly 16,000–18,000 Marines, for 30 days. Other ships contain equipment and supplies for USA and USAF units. A second MPS squadron (2d) is customarily stationed at Diego Garcia in the Indian Ocean with similar capabilities. Ashore the USA has prepositioned equipment (APS-4) at Camp Carroll in South Korea, as well as at Yokohama and Camp Sagami, Japan. These contain both equipment configured in unit sets and sustainment supplies. PACOM and the military services have plans for ongoing upgrades of these prepositioned sets.

In light of the theater's size, many observers have expressed concerns that existing mobility capability is inadequate. Faster arrival times in crises reduce risk by deterring aggression before conflict begins, ceding less territory during a conflict, and concluding a conflict faster. Faster is clearly better.

However, the Defense Department argues that, based on its most recent strategic mobility study, the *Mobility Capabilities Assessment* (MCA), its overall strategic mobility capabilities are adequate to resolve conflicts and crises at an acceptable level of risk. The study's major findings were as follows:

In general, planned mobility capabilities (organic and commercial) support the objectives of the 2012 National Defense Strategy. . . . PB13 mobility forces do not materially constrain U.S. objectives associated with conducting simultaneous operations in different theaters, and have sufficient capabilities to concurrently support a heightened defense posture in and around the United States or support U.S. civil authorities in response to a large-scale attack or natural disaster. . . . While some scenarios did present certain aspects of the mobility portfolios assessed with challenges . . . none of these challenges would have precluded achievement of U.S. objectives within generally acceptable timeframes.⁶²⁰

In general, the lack of foreign infrastructure required to support major force deployments and the availability of forces to deploy remains the fundamental constraint when attempting to reduce deployment timelines. Procurement of additional airlift and sealift by themselves would have little impact on timelines.

DOD published the MCA in 2013 and based it on the 2012 National Defense Strategy and the (internal) Defense Planning Guidance for FY 2014–2018.⁶²¹ As a result of the study's findings, the USAF reaffirmed its decision to retire the oldest cargo aircraft (C-5As and C-130s). Air refueling was found to be adequate for current requirements, helped by planned procurement of new refueling aircraft (KC-46s). Excess capacity in sealift and civilian airlift aircraft provided additional risk mitigation. These results were consistent with DOD's 2010 *Mobility Requirements and Capabilities Study 2016*.⁶²² The Government Accountability Office did not review the MCA but had reviewed the earlier MCRS-16 study. GAO generally supported the study's findings but recommended that DOD clearly state risk assessments.⁶²³

Operational concepts developed since the publication of the MCA, including distributed and dispersal basing for air power, may increase the demands on strategic mobility assets including aerial refueling. These will need to be considered in the next strategic mobility analysis.

Gaps: Strategic Mobility

PACOM's 2015 posture statement notes, "PACOM does not have enough lift to satisfy all operational requirements."⁶²⁴ PACOM staff explained that plans accept risk because of timelines, due in part to reliance on reserve forces as early enablers. However, the risk was acceptable if the plans were executed as written.

Aerial refueling is critical to maintaining airpower in such a large theater. Long-term gaps will exist in aerial refueling— under some scenarios, according to MCRS-2016. The KC-46 tanker will start to mitigate gaps when it is delivered. However, operating in a non-permissive environment will place new strains on the tanker force. Tankers may have losses or may need to follow non-optimal routing. Further, tankers will be needed to support the flow of replacement aircraft to compensate for combat losses.

Shortfalls are also expected in Petroleum, Oil and Lubricants (POL) tankers (that is, tankers that carry refined products, not crude oil) and Roll On/Roll Off (RO/RO) ships. However, in the commercial world there are many such ships, which might be usable in a conflict.

A major uncertainty in a conflict with a peer competitor is the security of U.S. mobility networks. For 70 years, U.S. mobility assets have operated in a sanctuary. The MCA, like previous mobility assessments, included WMD effects but assumed that "[t]heater combat superiority (air, surface, and subsurface) has been achieved to the degree necessary to permit airlift and sealift operations." That may not be true in the future as opposing forces will have sophisticated submarines, long-range missiles, and potentially power-projection capabilities, perhaps disrupting the flow of mobility assets and causing some attrition.

Recommendations

- Execute currently planned programs—for the KC-46 tanker, for connectors, and for repositioning—in order to enhance the strategic mobility system.
- Conduct another strategic mobility study when the long-term budget situation becomes clear and the long-term force is set, or if the next strategic review (“QDR 2018”) establishes a substantially different strategy. In future mobility assessments, consider the effect of attacks on bases, ships, and aircraft and the needs of a more distributed wartime basing posture. There is wide recognition, in OSD, the services, the Joint Staff, and PACOM, that this is needed.
- Make plans for using commercial mobility assets to the maximum extent possible.

Capabilities: Readiness

DOD defines operational readiness as “The capability of a unit/formation, ship, weapon system, or equipment to perform the missions or functions for which it is organized or designed.” Sequestration in 2013, which required DOD to cut \$32 billion in six months, severely reduced readiness because cuts had to be made quickly, and readiness accounts are easy to adjust in the short term. DOD is rebuilding readiness slowly. In coping with sequestration cuts, the military services prioritized funding for the readiness of forward-deployed forces. However, that meant that they had to cut the readiness of CONUS forces more.⁶²⁶

Low readiness in CONUS units presents challenges for both warfighting and day-to-day operations. For warfighting, it means that forces will arrive in theater later than desired or that they will not have their full capabilities. Both increase risk and potential casualties. In day-to-day operations, the risk is in reduced presence. Because the services have endeavored to deploy forces only at high readiness, the limited amount of readiness funding allows deployment of fewer forces—air, naval, and ground—for allied engagement and crisis response.

There is no substitute for actually being present. As Adm. Jonathan Greenert, then-chief of naval operations, stated of the USN, “This is our mandate: to be where it matters, when it matters.”⁶²⁷ In the 1990s, the concept of “virtual presence” was proposed—that is, using the threat of distant but rapidly deployable air power to substitute for forward deployed forces. However, it became clear that, to U.S. allies, partners, and competitors, “virtual presence” was, in fact, absence.

Gaps: Readiness

After a decade of war, the services had become extremely skilled at counterinsurgency operations but had lost their edge in high-end conflicts. Full spectrum readiness is needed to counter threats in the Pacific. Planned funding in PB 2016 will rebuild readiness across DOD over time, but services will not achieve targeted levels until FY 2020, 2023 for the Air Force.⁶²⁸

Further, readiness faces two major future challenges: uncertain long-term funding and the decline of war (OCO) funding. Funding reductions would hit all accounts, but particularly readiness because these accounts can be changed quickly.

The risk with OCO funding is indirect. Although OCO funds mainly CENTCOM activities, it also funds many USN and SOCOM global day-to-day operations and logistics. For example, in FY 2016 OCO will fund 22 percent of overall USN-deployed ship steaming days and 20 percent of all ship depot maintenance. If this funding were to go away without replacement, the effects would be severe.

Capabilities: Logistics

The core logistic functions are deployment and distribution, supply, maintenance, logistic services, operational contract support (OCS), engineering, and health services.⁶²⁹ Most of these are long-standing functions that are well understood, even if not always sufficiently resourced. The considerations that affect readiness apply here also, since logistics is a major element of readiness.

Several logistic concerns deserve particular attention, however:

Operations in an A2/AD Environment: Although in recent conflicts there has been some threat from missiles and hit-and-run insurgent attacks, the large logistic bases and long supply lines have generally operated in sanctuary. As noted with strategic mobility, operating in an A2/AD environment will be very different. China particularly will have the ability to strike at long range and attack logistics activities on the ocean, in the air, and on the ground.

Operational Contract Support (OCS): OCS has received much attention in the last decade as contractors have become a permanent part of U.S. force structure alongside active forces, reserves, and government civilians. As a result of contractor scandals during operations in Iraq and Afghanistan, DOD developed new processes and structures to ensure that contracting operations were both rapidly executed and fair to the government. These processes and structures need to continue in peacetime lest abuses arise in the next conflict.

Ally and Partner Needs: Combined operations with allies (connected to the United States through a formal treaty) and coalition partners (joined for a particular operation) are a continuing feature of contemporary operations. International partners have been present in all recent operations, both for operational and political reasons, and that will continue. Allies and partners frequently need transportation and logistical support because, other than the United States, few countries—beyond the United Kingdom and France—have any capability for global deployment. Rather, foreign forces are designed for national or regional operations. Therefore, the United States needs to sustain the mechanisms and legal authorities to provide this support.

U.S. Army Executive Agency: The USA provides certain joint capabilities as the Defense Department's executive agent—for example, handling port operations and long-haul trucking. The USA has expressed concern about the burden that these responsibilities put on its diminishing manpower. These capabilities are needed for an effective joint force and cannot be ignored. If the USA cannot execute some missions, then contractors will need to conduct them.

Supply Distribution. The large size of the theater and the new operational concepts that emphasize dispersal put unusual pressure on supply distribution during conflict. In particular, the ability to move fuel to distributed facilities and forward bases is a concern. Aircraft and ships use fuel in immense quantities, especially during conflicts when sortie rates surge. Any interruption in the flow of fuel would have immediate adverse effects on wartime operations.

Gaps: Logistics

Theater-wide A2/AD threats may require defensive activities in the Western Pacific that were last planned for during the Cold War, for example, the convoying of logistics ships, the hardening of logistical hubs, and the prepositioning of rapid-repair capabilities.

The analysis in this study makes it clear that operational logistical demands in PACOM and elsewhere will continue to be high even as resources are constrained. Traditionally the United States has provided most of these capabilities through government means, both military and civilian. The exception has been strategic mobility where sustainment operations—by air and sea—have frequently, and successfully, used commercial assets.

One gap is the delivery of fuel and supplies to forward bases. To save money, the USN proposed putting two fast combat support ships (T-AOE) into reserve status, one of which would be assigned to PACOM. The T-AOEs are the USN's most capable support ships for providing fuel, ammunition, and supplies to the fleet at sea, although they are also more expensive to operate than some oilers and dry cargo ships. Shifting the PACOM-assigned T-AOE from active to reserve status would delay its deployment when needed because of the time required to activate it and move it forward. Keeping the ship in active status would reduce this risk.

During the Cold War, the United States relied heavily on NATO and allied militaries to provide logistical support. This was the preferred course of action since these forces were already in place, were under direct government control, and did not put peacetime demands on the United States. However, this was possible because NATO allies were wealthy, well-armed, and highly organized. Such support is unlikely to be available in future conflicts in the Asia-Pacific region because most regional allies will be hard pressed to support even their own forces in a conflict.

Increasingly, the military has relied on contractors, both U.S. and local, to provide logistical services. Contractors successfully took over many logistical operations in Iraq and Afghanistan. However, financial scandals and lax government management of contracts undermined popular support and wasted money. Although government assets have advantages for control and responsiveness, there will be no choice in the future but to continue and perhaps even expand the use of contractors. The hard-learned lessons from recent conflicts therefore need to be retained. These lessons include the need for clear contract specifications, competition where feasible, vetting of potential contractors, and aggressive auditing. Above all, use of contractors needs to be sensitive to local customs, procedures, and politics as well as the second- and third-tier effects. U.S. contracting demands can overwhelm fragile local economies. In various instructions and directives, PACOM has put in place a solid foundation for the future use of operational contractor support.

Contractors can come from the United States, in effect deploying with U.S. forces, to provide expertise, technical support, and services. Contractors can also be local. Local contractors leverage the immense commercial infrastructure that exists abroad, and the region has a large population of mature companies that are accustomed to operating over long lines of communication. For example, U.S. allies and partners have over 100 refineries and dozens of petroleum product tankers that the military could potentially use in a conflict, thereby reducing the need to rely on military assets that haul petroleum products from the mainland to overseas bases.

The great advantage of operational contractors, whether U.S. or local, is that unlike military forces, which must be maintained continuously, contractors cost essentially nothing in peacetime. In wartime, contractors hire the needed personnel with existing skills and leverage the available commercial infrastructure. Training and preparation needs are few. When the operational requirement ends, the personnel can be released or the contracts ended.

Contracts and contractors, like reservists, need time to get in place. Therefore, DOD should have readily available contract mechanisms, deployable contract oversight teams, and standing operating procedures for smooth integration of contractors and contract support into military operations. The United States developed many of these mechanisms through hard experience over the last 15 years, and they need to be maintained.

PACOM staff pointed to the Civil Reserve Air Fleet (CRAF) and the Logistics Civil Augmentation Program (LOGCAP) as examples of such standing contract mechanisms. Military OPLANs are now required to have an Annex W: Contract Support Integration Plan. However, these are reported to be underdeveloped.⁶³⁰

The large role played by contractors in performing logistics services for DOD creates a potential vulnerability of computer networks that manage the contracts, monitor the production, and delivery of goods throughout DOD's logistics enterprise. Vulnerabilities to the cyber network—particularly that of some of DOD's commercial partners—highlights the potential risks of DOD in a contingency.

A final gap is in the security of logistics communications. As noted earlier in this section, operational requirements of DOD necessitate the management and distribution of a wide range of supply items, especially fuel. These efforts are currently managed through a combination of military assets and contracted service-providers. Recent incidents involving cyber attacks against firms holding DOD logistics contracts highlight the risks of possible adversaries seeking to gain information from, or to disrupt U.S. usage of, cyber networks that enable much of the Department's logistics capability.⁶³¹

Recommendations

- Maintain high readiness in deployed forces even if the readiness of non-deployed forces declines.
- Develop and maintain capabilities for rapidly deploying and then managing large numbers of operational support contractors.
- Plan to use operational support contractors if there are shortfalls in the U.S. Army's Executive Agency capabilities.
- Plan also on using local commercial assets to the maximum extent possible, especially for fuel, to support distributed operations during conflicts.
- Maintain the Pacific T-AOE in active status.
- Protect logistics communications networks, including those of private-sector partners. Assess overall vulnerabilities to the system, and where necessary, shift logistics information systems to classified networks.

Capabilities: Humanitarian Assistance and Disaster Relief

Policymakers regularly turn to the U.S. military to provide logistics, lift, and other capabilities during humanitarian crises created by natural and man-made disasters.⁶³² Over the last 20 years 40 percent of global HA/DR events have occurred in the Asia-Pacific region and in 2014 over half of the world's 226 natural disasters occurred in the Asia-Pacific region, from tsunamis and catastrophic river basin floods to earthquakes and cyclones.⁶³³ Such disasters show the urgent need for expanded cooperation on HA/DR.

The United States conducts multiple HA/DR operations each year, with the scale, scope, and speed of each operation varying greatly. Recently, the U.S. military conducted major HA/DR operations in response to the 2010 Pakistan monsoon floods; the 2010 Haiti earthquake; the 2011 earthquake, tsunami, and nuclear disaster in Japan; the 2013 hurricane Haiyan/Yolanda in the Philippines; and the 2014 West Africa Ebola virus outbreak.

Demands on U.S. forces can be large and time urgent. The 2010 Haitian earthquake involved the rapid deployment of over 22,000 military personnel—7,000 ground troops, 300 fixed-wing and rotary-wing aircraft, and 22 USN ships including an aircraft carrier and two amphibious assault ships—for relief operations lasting almost five months.⁶³⁴ The relief efforts in Japan in 2011 peaked at 24,000 military personnel, 24 USN ships including two aircraft carriers and an amphibious assault ship, and 189 aircraft, with operations lasting about two months.⁶³⁵

While HA/DR efforts are not the primary mission for which U.S. forces train, they nevertheless offer the opportunity for close cooperation with various foreign militaries, some of which might not always operate closely with the U.S. military. HA/DR peacetime exercises improve response in an emergency while also developing military-to-military linkages in a non-threatening way.

Gaps: Humanitarian Assistance and Disaster Relief

Planning and budgeting for HA/DR operations is difficult given that humanitarian crises—particularly those caused by natural disasters—are generally rapid-onset and unpredictable while the specific requirements of each mission vary greatly. Further, many countries with HA/DR triggering events lack experience and coordinating mechanisms for working with U.S. forces. The most serious gap, however, is the difficulty in constructing whole-of-government trust and expertise with affected states.

Recommendations

- Stockpile HA/DR supplies, as feasible. Countries within the region—with U.S. assistance through DOD's Overseas Humanitarian, Disaster, and Civic Aid (OHDACA) or other authorities—could establish additional pre-positioned stockpiles of critical supplies.
- Exercise the HA/DR mission with regional partners and allies and broaden multinational exercises to include interagency and nongovernmental partners.⁶³⁶
- Deepen whole-of-government HA/DR expertise across the Asia-Pacific region.

THEATER SECURITY COOPERATION

As noted earlier, security cooperation is central to the U.S. rebalance to the Asia-Pacific region. It encompasses “all Department of Defense interactions with foreign defense establishments to build defense relationships.”⁶³⁷ Around the world, U.S. security cooperation efforts aim to strengthen U.S. bilateral and multilateral security partnerships and deepen working relationships with emerging powers, including China.⁶³⁸ By developing partner nations’ capabilities; building interoperability; and securing peacetime and contingency access to critical air, land, and sea nodes, theater security cooperation enhances the national security interests of the United States, its allies, and its partners. Security cooperation efforts can include training and equipment, joint exercises and exchanges, and advice to security-related officials. U.S. security cooperation activities with individual nations within the PACOM AOR were covered on a country-by-country basis earlier in this report. This section instead focuses on overarching priorities for, capability gaps in, and challenges to the security cooperation enterprise.

Priorities

In support of the U.S. rebalance, PACOM pursues interoperability and information sharing with allies and partners to cooperatively address regional challenges when there are common interests and where such cooperation can produce mutual benefits. These activities include both U.S. treaty allies and non-allied partners in the region.

A major initiative announced by Secretary Carter in June 2015 is the Maritime Security Initiative (MSI). An effort to bring resources and focus to enhancing regional maritime capabilities, from maritime domain awareness, to personnel and assets capable of interdicting criminal actors, to more complex naval operations, MSI could be an important tool for the United States (through DOD) to expand targeted capabilities and capacity for allies and partner countries in the region. Enthusiasm for MSI’s success must be tempered with a realistic understanding that creating a new capability is not achieved simply by providing a new piece of equipment. Enduring capability improvement will only be accomplished if the partner nations take in, and then sustain with their own resources, the training required to undertake the full mission, and to plan for and sustain an asset over its realistic lifetime. In addition, the success of MSI will depend on sustained funding commitments from the Congress.

As Japan implements the updated Guidelines for Defense Cooperation with the United States, USFJ continues to build a strong relationship with the Japanese Joint Staff to improve interoperability and information sharing through training, exercises, and bilateral planning. The United States also encourages greater Japanese trilateral engagement with South Korea and Australia. Japan plans to procure several platforms to enhance interoperability with the United States, such as the F-35 Lightning II, MV-22 Osprey, and Global Hawk UAS, as well as upgrading existing Aegis-equipped destroyers with the latest BMD capability and constructing two additional Aegis-equipped destroyers (for a total of eight BMD-capable platforms).⁶³⁹

The United States and South Korea intend to modernize the alliance capabilities required to address future threats from North Korea. In 2014, PACOM officials identified C4ISR as a top priority

for security cooperation with South Korea. PACOM's increased emphasis on C4ISR has helped to solidify support for Seoul's purchase of Global Hawks, enabling South Korea to better monitor security threats on the Korean Peninsula.⁶⁴⁰

The U.S.-Australia alliance has grown stronger with the ongoing implementation of the Force Posture Initiatives announced by President Obama and Prime Minister Gillard in November 2011.⁶⁴¹ These efforts will enhance training and exercise opportunities and increase bilateral collaboration in counterterrorism, space, cyber, IAMD, and regional capacity building. Australia plans to procure a range of platforms that will increase interoperability with the United States, including the F-35 Lightning II, P-8 Poseidon, C-17 Globemaster III, EA-18G Growler, Global Hawk UAS, and MH-60R helicopter. To enable synchronization and integration with the United States, Australia provides a general officer and a senior executive to PACOM HQ, as well as another general officer to USARPAC.⁶⁴² In fact, since 2013, an Australian major general has served as USARPAC's deputy command general (operations), highlighting the close military-to-military relationship between the two nations.

In the Philippines, the EDCA provides expanded opportunities to conduct theater security cooperation activities and supports the AFP as it shifts focus from internal security to external defense. PACOM officials have noted that after years of U.S.-Philippines cooperation, the allies have met original training and advising objectives to address terrorist organizations in the Philippines (e.g., ASG, JI). JSOTF-P—created to counter violent extremists in the Philippines—will therefore stand down. Having demonstrated an improved ability to handle domestic threats, with the assistance of a small PACOM contingent to work with planning and leadership staffs, AFP will assume this important counterterrorism mission.⁶⁴³

The annual COBRA GOLD exercise cosponsored by the United States and Thailand is PACOM's signature, multilateral warfighting training event. However, the May 2014 coup d'état in Thailand and resulting military junta caused the United States to significantly limit the scope of the 2015 COBRA GOLD exercise, which focused on humanitarian assistance activities rather than on more sensitive combat and crisis operations. Prospects for future security cooperation with Thailand will depend in large part on the return to democratic leadership.

As mentioned, U.S. security cooperation extends beyond those nations with which the United States has signed security treaties. For example, the U.S.-India security cooperation relationship continues to deepen, as reflected by the 69 major combined exercises in the last five years. India also participates in multilateral exercises, such as the Malabar Exercise series and RIMPAC, demonstrating its commitment to providing regional security. U.S.-India defense trade has increased over the last three years, including procurement of C-17, C-130, and P-8I aircraft.⁶⁴⁴

Security cooperation with Indonesia, Malaysia, Singapore, and Brunei has grown stronger. In 2014, Indonesia opened a Peace and Security Center to train regional partners in peacekeeping operations. U.S.-Indonesia defense sales have expanded to include AH-64E Apache helicopters and F-16 aircraft. Since 2010, Malaysia has increasingly participated in multilateral exercises, such as RIMPAC and COBRA GOLD; welcomed increasing numbers of U.S. naval ship visits that encourage engagement with the Royal Malaysian Navy; participated in jungle warfare training

with the United States; and contributed to counterpiracy efforts in the Gulf of Aden, the Horn of Africa, the Indian Ocean, and closer to home.⁶⁴⁵ The 2005 U.S.-Singapore Strategic Framework Agreement allows the U.S. military to access Singaporean facilities; operate resupply vessels from Singapore; use a naval base, ship repair facility, and airfield there; rotate U.S. fighters through Singapore; and maintain a logistical command unit.⁶⁴⁶

Also of note is recent security cooperation with Vietnam. In the 1990s, most cooperation reflected “legacy” issues from the Vietnam War era, such as locating remains of missing U.S. service members. More recently, deepening security relations have included a robust IMET program, high-level “Defense Policy Dialogue” meetings, joint naval engagements (involving noncombat training), peacekeeping and SAR training exercises, and relaxation of export control regulations to allow sales of non-lethal defense items to Vietnam.⁶⁴⁷

Elsewhere in the region, the United States has worked closely with many Pacific Island nations to help them secure their interests. U.S. capacity building, often done in concert with Australia, New Zealand, and others, has helped Pacific Island states to protect themselves against both state-based and nonstate risks.

Beyond the above-mentioned activities, PACOM has also sought to engage China on issues of common interest. Notably, through a partnership with the United States Internal Revenue Service, PACOM has used DOD counter narcotics authorities to provide anti-money laundering training to Chinese personnel involved in counterdrug efforts.⁶⁴⁸ While DOD looks to collaborate with China on areas of mutual interest, it also recognizes the security instability caused by Chinese assertiveness. To that end, in May 2015, Defense Secretary Ash Carter announced his intent to launch a Southeast Asia Maritime Security Initiative.⁶⁴⁹ China is thus both a recipient of security cooperation and a potential competitor driving some U.S. regional security cooperation efforts.

Capabilities

As discussed above, U.S. security cooperation with countries in the Asia-Pacific takes many forms. Activities range from classroom-based courses at U.S. military educational institutions to live-fire training exercises with allies to train for existing OPLANs. In between, security cooperation encompasses sales of and training on military systems; joint training and operations that expand awareness and understanding of other countries’ militaries and cultures; and communication and interoperability exercises that improve cooperation across a range of activities, from unplanned encounters at sea to side-by-side HA/DR operations.

U.S. armed forces remain the training and engagement partner of choice for countries throughout the PACOM AOR. Security cooperation activities are funded by a range of sources within the U.S. government. Much security cooperation is funded out of service training and operational budgets. Other elements, such as foreign military financing (FMF) and IMET, are funded by the Department of State but largely executed by DOD. Still other authorities are wholly controlled by DOD, but are focused on specific missions, such as counterterrorism, counternarcotics, or training for peacekeeping.⁶⁵⁰

Since 2001, the United States has expanded security cooperation authorities but has done so largely through the lens of counterterrorism, which is an important though increasingly niche element of U.S. defense cooperation in Asia. At present, only the authorization for the Global Security Contingency Fund includes priority capability areas for PACOM such as maritime security. Going forward, the Departments of State and Defense should consider whether priority focus on PACOM merits creating new security cooperation authorities that seek to build partner military capabilities important for achieving U.S. objectives in the Asia-Pacific.

Gaps

In support of shared interests and objectives across the Asia-Pacific region, five capability areas and two organizational shortfalls merit increased U.S., ally, and partner attention and investment:

Information and Intelligence Sharing. The MH-370 disaster and ongoing challenges in the South and East China Seas demonstrate the need for a regional capability to monitor shared air and maritime areas. Through multilateral conferences and military-to-military contacts, the United States could expand existing initiatives to build a shared air and maritime domain awareness architecture.⁶⁵¹

Maritime Security. Countries within the region increasingly recognize the importance of maritime sensors and platforms to track threats from sea robbery and piracy, illicit trade, transnational crime, and security instability caused by Chinese assertiveness. For example, in the mid-2000s, the United States helped to prevent illicit trafficking within the Strait of Malacca by providing maritime-domain awareness radars to Indonesia and Malaysia. More recently, the United States agreed to sell eight Apache AH-64E attack helicopters and associated Longbow radars to Indonesia, in part to help counter sea robbery and piracy and to enhance maritime security. Some hardware is otherwise unaffordable for small allies and partners, which invest in smaller vessels and coastal patrol craft. Multiple partners might also consider joint procurement programs for increased quality, quantity, and interoperability.⁶⁵²

Undersea Warfare. As noted in the naval forces section, Chinese and North Korean advances in submarines, combined with the increased development of undersea capabilities by others throughout the Asia-Pacific, highlight the need for investing in undersea warfare. Increasing training and exercises and working together to acquire and field platforms would benefit the United States and its allies and partners. Japan's potential cooperation on Australia's future submarine holds promise for deeper regional collaboration.

Missile Defense. As noted in the missile defense section, ballistic and cruise missiles are proliferating, so regional allies and partners will need to bolster their missile defense. The cost of kinetic interceptors is high and only affordable to wealthier states, but these interceptors provide the only near-term capability against this immediate threat. Because some interceptors are more expensive than the missiles they are designed to strike, innovative approaches, such as rail guns and directed energy, may be required.⁶⁵⁴ As these technologies mature, the United States should make them available to allies and partners.

Cyber Security. Regional allies and partners recognize the importance of investing in cyber security. However, many regional efforts are under-resourced and lack common rules and norms for

regulating cyber capabilities. Multinational training and exercises for cyber contingencies help develop common approaches and standards, increase cyber-defense throughout the region, and in some cases enable operational concepts and plans for assuring cyber access in Asia.⁶⁵⁵

Defining End States. The first organizational shortfall hindering U.S. security cooperation efforts in the Asia-Pacific is that, despite the increased emphasis on building partnership capacity, there has been little definition of what the capability end states of partners and allies should be—only that there should be “more” or “improved” capability and capacity. Without having an interagency-agreed target to plan, budget, and work toward, the United States and its allies and partners may misdirect resources and fail to meet strategic objectives. Efforts that build long-term relationships have greater value than those that produce short-term training improvements. PACOM should work closely with its components to prioritize ally and partner capabilities needing U.S. support, and within each country, to define specific milestones and end states before committing to funding and authorities.

Security Cooperation Synchronization. The second organizational shortfall is that gaps in communication and synchronization between PACOM and its components can impair integration of plans and resource decisions. For example, proposals for logistical and base upgrades for U.S., ally, and partner use have not been coordinated between PACOM and individual services before being submitted for OSD and Joint Staff review. Aggregating, rather than synthesizing, component plans and requirements often results in duplicative resource requests in DOD’s PPBE process, leading planners and programmers to question the validity of requirements and requests. This slows down and confuses the process, and as a result, PACOM and its service components may not receive the resources they require on the timeline they would like. Greater prioritization, de-confliction, and synchronization across PACOM components would enable DOD to respond to requirements in the Asia-Pacific in a more timely and productive manner.

Recommendations

- In order to focus investments, assist regional allies and partners with the development of desired end-states for their military capabilities.
- Ensure objectives in the Theater Security Cooperation Plan are appropriate for a combatant command, rather than government-wide objectives and are within the area of responsibility of the military services or defense ministries in the partner nation. Further, consider the partner nation capacity to adopt new initiatives, from personnel, materiel, and financial perspective, and prioritize objectives accordingly.
- Invest in ally and partner capabilities in the priority areas of information and intelligence sharing, maritime security, undersea warfare, missile defense, and cyber security.
- Prioritize and synchronize PACOM and service component security cooperation priorities and lines of effort.



An aerial photograph of the Arctic region, showing the dark, rugged terrain of the continents and islands surrounding the central Arctic Ocean. A white circle is drawn around the Arctic Ocean, highlighting the area of focus for the document. The text is centered over the lower half of the image.

6 | ARCTIC AMBITIONS AND THE U.S.
NAVY'S ARCTIC ROADMAP

UNDERSTANDING THE ARCTIC: A RAPIDLY CHANGING REGION

This section sets forth the CSIS study team's assessment of nations' ambitions for the Arctic and of the U.S. Navy's Arctic Roadmap. In establishing the requirement for this assessment as part of the independent review of the Defense Department's rebalance efforts, Congress acknowledged the important and growing role of the Arctic as a region of both promise and challenge in the security realm.

The Arctic is a rapidly thawing ocean and the Arctic region is currently warming twice as fast as anywhere else on Earth. Since 1980, the Arctic has lost 40 percent of its sea ice cover and 70 percent of its ice volume, and the Intergovernmental Panel on Climate Change (IPCC) estimates that the Arctic could be free of summer ice between 2050 and 2100. Currently, about 34 percent of the world's coastlines are covered in permafrost, but as these buffer zones disappear, coastal erosion accelerates as does onshore permafrost thaw, threatening critical infrastructure and coastal communities. Since the start of the industrial revolution, rising carbon dioxide levels have led to a 26 percent increase in the acidity of the Arctic Ocean, which has a detrimental impact on marine life.

These profound environmental changes have a significant impact on the daily lives of the 4 million people who reside in the Arctic, including 40 different indigenous groups, as well as a highly varied biodiversity consisting of approximately 4,000 species of plants, mammals, birds, and fish. Diminishing sea ice and longer ice-free periods are affecting the migratory patterns of fish stocks, as well as the hunting and fishing periods for the thousands of people who depend on the Arctic for their living. These environmental changes will not be limited to the Arctic but will also have a profound global impact due to sea level rise and an increase in approximately 40 percent of global greenhouse gas emissions due to methane release.⁶⁵⁶

An increasingly ice-free Arctic also offers considerable economic development opportunities. From vast natural and mineral resources to potential economically viable shipping routes, Arctic and non-Arctic states are becoming increasingly interested and invested in exploring and developing the Arctic's rich resources. According to the United States Geological Survey, the Arctic holds 13 percent of the world's undiscovered oil resources (90 billion barrels of oil) and 30 percent of the world's undiscovered gas resources (1,669 trillion cubic feet of natural gas and 44 billion barrels of natural gas liquids).⁶⁵⁷ An estimated 84 percent of these resources are located in offshore areas.⁶⁵⁸ It is also estimated that the Arctic may supply 25 percent of the global demand for rare earth elements with a value of \$1.5–2.0 trillion. In addition to the vast energy and mineral resources in the Arctic, the region also contains some of the world's richest fishing grounds, with some annual catches valued at roughly \$2 billion.⁶⁵⁹ Although there are currently no fishing stocks in the Central Arctic Ocean, in July 2015 the five Arctic littoral states agreed preemptively to ban commercial fishing in the Central Arctic Ocean until there is additional scientific data available and additional international mechanisms are in place.⁶⁶⁰

Longer ice-free periods in the Arctic will likely increase commercial shipping and tourism in the Arctic. According to the USCG, 400 ships traversed the Bering Strait in 2011, compared to 245 ships in 2008, and it is expected that the increase in activity will continue. In 2013, 71 large ships were able

to navigate the Northern Sea Route (NSR)⁶⁶¹ and the Russian Ministry of Transport estimated that the volume of cargo transportation along the NSR will reach 40 million tons by 2020 and 70 million tons by 2030.⁶²² However, in 2014, there were only 53 transits of the Northern Sea Route due to a drop in global energy and commodity prices as well as sanctions imposed against Russia.⁶⁶³

FIGURE 14: Arctic Ambitions and the U.S. Navy’s Arctic Roadmap



The United Nations Convention on the Law of the Sea (UNCLOS) is the overarching international legal framework that governs the Arctic. While some territorial disputes have been resolved bilaterally, such as the 2010 Norwegian-Russian Delimitation Treaty, several disputed claims remain,

most notably the Lomonosov Ridge, which crosses through the geographic North Pole. Canada, Denmark, and Russia all contest the Lomonosov Ridge and claim that it is an extension of their respective continental shelves. Both Canada and Denmark have submitted evidence to the UN Commission on the Limits of the Continental Shelf, with Russia submitting an updated claim in August 2015 that would expand its territory by roughly 463,000 square miles.⁶⁶⁴ There are also ongoing disputes concerning the legal status of both the Northern Sea Route (NSR) and the Northwest Passage. Russia considers the NSR an internal passage, and therefore subject to fees and Russia's permission to transit the route; however, the majority of the international community considers it to be an international passage.

PACOM'S CHANGING ARCTIC RESPONSIBILITIES

In 2011, the chairman of the Joint Chiefs of Staff issued a new Unified Command Plan (UCP) that redrew Arctic areas of responsibility. Under the previous plan, three COCOMs—European Command (EUCOM), Northern Command (NORTHCOM), and PACOM—had operational responsibilities in the Arctic. NORTHCOM's AOR stretched from the middle of the Bering Strait to roughly the middle of Greenland; EUCOM's AOR went from the middle of Greenland to the Russian Severnaya Zemlya islands north of Siberia; and PACOM's AOR stretched from the Severnaya Zemlya islands to the middle of the Bering Sea. Under the 2011 UCP, the AOR map was redrawn and DOD noted, "responsibility for the Arctic region is now shared between USEUCOM and USNORTHCOM rather than USEUCOM, USNORTHCOM and USPACOM as directed in previous UCPs."⁶⁶⁵ PACOM is now responsible for the Russian Pacific littoral and the extreme western approaches to the Bering Strait but nothing further north, while NORTHCOM is solely responsible for Alaska.⁶⁶⁶ The UCP gives EUCOM overall operational responsibility and gives NORTHCOM the role of advocating on behalf of Arctic capabilities.

In 2009, NORTHCOM and the USCG signed an MOU to enhance coordination and cooperation in the Arctic between Joint Task Force Alaska (JTF-AK) and the USCG's District 17. The agreement "signals a common understanding between commanders for heightened emphasis on alignment of the two organizations in support of a unified approach to the security and defense of Alaska."⁶⁶⁷ NORTHCOM and USCG issued a 2012 joint White Paper that identified ways to increase U.S. Arctic capabilities in infrastructure, communications, and maritime domain awareness.⁶⁶⁸ The USCG's District 17 based in Juneau, Anchorage, and Kodiak has a significant role in providing safety, stewardship, and security in U.S. Arctic waters. District 17 in Alaska consists of roughly 2,000 active duty personnel, 52 boats, 15 cutters, and 17 aircraft.⁶⁶⁹ In July 2015, USCG personnel from the Coast Guard Research and Development Center, in cooperation with the National Oceanic and Atmospheric Administration, conducted research aboard the *CGC Healy* on unmanned aerial systems.⁶⁷⁰ Since 2007, the USCG has conducted annual Arctic Shield exercises to test operations in the Bering Strait, Alaska's North Slope, and the Chukchi and Beaufort Seas.

The 2011 UCP significantly diminished PACOM's operational role in the Arctic. As former PACOM commander Adm. Samuel Locklear noted, PACOM's responsibility "basically stops as you enter the Arctic Circle in the north."⁶⁷¹ Today, most of PACOM's Arctic responsibility is related to the de-

fense of Alaska, which involves numerous joint and coordinating command structures between PACOM, NORTHCOM, and National Guard subordinate units across all four military services. Alaskan defense also involves cooperation and coordination with Canadian forces. Until 2014, PACOM maintained joint command over Alaskan Command (ALCOM) with NORTHCOM, when, at the recommendation of both the ALCOM and PACOM commanders, DOD shifted command of ALCOM entirely to NORTHCOM.

Although Alaska now falls under NORTHCOM, PACOM maintains several subordinate units there under USARPAC and PACAF. U.S. Army Alaska (USARAK) includes the Northern Warfare Training Center (NWTC), the U.S. Army's cold weather training site. USARAK is located at Joint Base Elmendorf-Richardson in Alaska and provides training for PACOM units, units of USARAK, and other units globally. PACOM also maintains an air defense presence in Alaska through the 11th Air Force. Like USARAK, the 11th Air Force works jointly with other commands, including ALCOM and the North American Aerospace Defense Command (NORAD), within AK-JOA. The 11th Air Force maintains a presence at JBER and at Eielson AFB. PACOM also conducts the biennial exercise Northern Edge, "Alaska's premier joint training exercise designed to practice operations, techniques and procedures, and enhance interoperability among the services."⁶⁷²

PACOM's Alaskan commands participate in emergency rescue-and-recovery missions within the Pacific AOR, and could be called upon to support search-and-rescue operations above the Arctic Circle. Working with NORTHCOM units, civilian organizations, and Canadian forces, PACOM responds to emergency situations, both civil and military, in the Arctic. In particular, as the U.S. military's primary cold weather and Arctic fighting force, units from USARAK may be called upon to operate in other regions of the Arctic should a SAR or oil spill occur.

It is unclear what the impact of anticipated U.S. Army reductions in Alaska will be on PACOM's Arctic capabilities. In July 2015, the U.S. Army announced that it is planning to draw down 2,600 soldiers from the 4/25 airborne unit at Joint Base Elmendorf-Richardson, which is the only airborne Arctic brigade in the U.S. Army.⁶⁷³ Alaskan Sen. Dan Sullivan has called the decision "a strategic blunder" at a time when Russia is increasing its military presence in the Arctic and he has sought the development of additional U.S. icebreakers as well as an increase in the U.S. Navy presence in Alaska.⁶⁷⁴ Gen. Mark Milley, the U.S. Army's chief of staff-designate, stated during his confirmation hearings that any cuts to USARAK should wait until the DOD completes a full operational plan for the Arctic, stating "an OPLAN first, reduction of forces second, if still required."⁶⁷⁵ This proposed U.S. Army reduction may complicate the development of a strategic plan for defending U.S. national security interests in the Arctic as has been proposed in the draft National Defense Authorization Act for 2016.

RUSSIA'S STRATEGIC INTERESTS IN THE ARCTIC

With over 50 percent of the total Arctic coastline, which extends nearly the entire northern coast of Eurasia, the Russian Arctic is a strategic region that accounts for 14 percent of Russia's GDP and 22 percent of its exports. It is also home to Russia's strategic nuclear fleet.⁶⁷⁶ Russia's interests in the Arctic have been largely driven by the promise of valuable hydrocarbon and mineral

resources as well as developing the NSR as a modern shipping route. As Russian Prime Minister Dmitry Medvedev has stated, "Our first and main task is to turn the Arctic into a resource base for Russia in the 21st century."⁶⁷⁷

In order to secure these important economic resources as well as to protect and project its sovereignty, the Kremlin has sought to reestablish its military presence in the Arctic, particularly along the Northern Sea Route. Although most of the current vessel traffic is to the western section of the Russian Arctic coast, between Murmansk and Dudinka as well as along the Norwegian coast and the Barents Sea, forecasts predict that transportation of oil from Russian ports on the Barents Sea could increase by 50 percent by 2020.⁶⁷⁸ Once the Yamal Peninsula begins production of liquefied natural gas (LNG), domestic freight could grow up to 50 million tons by 2020.⁶⁷⁹ Although the eastern part of the Russian Arctic sees much less vessel traffic, more LNG carriers from Yamal to Asian markets will transit the narrow Bering Strait.

In 2014, President Putin announced the creation of a new strategic command for the Arctic zone—the Northern Fleet-United Strategic Command (OSK "Sever")—which will have the status of a military district and consist of Russia's Northern Fleet, as well as units from other military branches. In addition to this new strategic command, the Kremlin has also announced that roughly 50 military airfields will be repaired and modernized by 2020,⁶⁸⁰ and 10 search and rescue stations are to be constructed along the Northern Sea Route.⁶⁸¹ The first renovated and reopened military base is located in Alakurtti, just 30 miles from the Finnish border, and in January 2015, the first Russian infantry brigade troops arrived, with an estimated 3,000 soldiers to be stationed at Alakurtti.⁶⁸² The 200th Independent Motorized Infantry Brigade is stationed in Pechenga on the Kola Peninsula, just over 5 miles from the Russian-Norwegian border. Russia is also restoring several of its Arctic aerodromes, including the Rogachyov airfield on Novaya Zemlya. In 2012 the Russian Ministry of Defense announced that a group of interceptor MiG-31s would be deployed there.⁶⁸³

Russia has intensified its military exercise and training schedule in the Arctic, to include large, unannounced exercises, in order to demonstrate its range of capabilities in and beyond the region. The largest post-Soviet exercise in the Arctic took place in September 2014 when Russia's Far East Military District conducted its Vostok 2014 exercise, which involved over 100,000 personnel and thousands of pieces of military hardware.⁶⁸⁴ Vostok 2014 was designed to test the readiness of Russia's Far East forces, including command and control, rapid mobilization, combined operations, and the use of both conventional and unconventional arms. However, some analysts believe the exercise was intended as a show of strength in response to China's growing military strength, as well as its increasing commercial presence in Russia's Far East and the Arctic.⁶⁸⁵

In March 2015, Russia conducted a large-scale, snap military exercise that involved more than 45,000 Russian troops, 15 submarines, and 41 warships, and called the Northern Fleet to "full alert and combat readiness."⁶⁸⁶ According to Russian Defense Minister Gen. Sergey Shoigu, "The main task of the [combat readiness drill] is to assess the armed forces from the Northern Fleet's capabilities in fulfilling tasks in providing military security of the Russian Federation in the Arctic region. New challenges and threats of military security demand the further heightening of mil-

itary capabilities of the armed forces and special attention will be paid to the state of the newly formed strategic merging [of forces] in the North.”⁶⁸⁷

Moscow has announced it would place its most advanced anti-aircraft missiles, S-400s, on the Kola Peninsula. Russia has also been testing and modernizing its strategic nuclear capabilities in the Arctic, including three completed *Borei*-class ballistic submarines and a successful test launch of an intercontinental ballistic Bulava missile in 2014.⁶⁸⁸ More recently, the Russian navy’s nuclear units conducted exercises in the international waters beneath the North Pole. These recent and intensified exercises and deployment of additional military capabilities are a demonstration of Russia’s increasing presence in the Arctic, as well as the expansion of its A2/AD capabilities there.

INCREASED PRESENCE OF ASIAN COUNTRIES IN THE ARCTIC

As the Arctic increasingly becomes a blue-water ocean and economic resources and shipping routes become more accessible, non-Arctic states have taken a more active diplomatic, scientific, and economic role in the region and are expressing their interest to explore, study, and potentially benefit from the Arctic’s resources. While the vast portion of the Arctic’s offshore energy resources fall within the five coastal states’ 200-nautical-mile Exclusive Economic Zones, the currently ice-covered international waters of the Central Arctic Ocean will likely be subject to greater commercial and human activity as the ice continues to recede.

The Arctic Council—an intergovernmental forum consisting of eight Arctic states (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States) and several indigenous representatives—was created in 1996 to focus on Arctic environmental protection and sustainable development. The Council added five Asian countries—China, South Korea, Japan, Singapore, and India—as permanent observer states in 2013, recognizing the growing interest and involvement of Asian countries in the Arctic.

China

China is not an Arctic nation but considers itself to be a “near-Arctic” state. China sees itself as an Arctic stakeholder that should actively participate in Arctic governance (e.g., as a signatory to the 1920 Spitsbergen Treaty, a permanent observer to the Arctic Council, a member of the UN Convention on the Law of the Sea, and as a member of the International Maritime Organization). China is also interested in the potential use of Arctic shipping routes, particularly a future Trans-Polar route across the North Pole, as well as resource exploration and the ability to enter new Arctic markets and participate in new investments. The Central Arctic Ocean is of particular interest to China as it relates to fisheries management, energy exploration, and shipping. As China moves toward an integrated regional model of economic development which includes the “One Road, One Belt” for Central Asia, greater Sino-Russian energy cooperation (such as the China-Russia East Route natural gas pipeline), and potentially the development of a Pacific-Arctic-Atlantic transportation route, one Chinese Arctic expert recently noted that “The Arctic brings Beijing and Washington closer together.”⁶⁸⁹ Despite these many interests, Beijing has yet to produce a formal government Arctic policy or white paper.

First and foremost, China is concerned about the adverse impact of Arctic climate change on its own country, ranging from sea level rise to increased storm severity and prevalence of droughts and floods, all of which have the potential to exacerbate China's food, water, and ecological insecurity. Chinese officials and experts also remain concerned about the potential for strategic competition and militarization in the Arctic. For the foreseeable future, China will focus on Arctic environmental science diplomacy. According to former Chinese Foreign Minister Yang Jiechi, "scientific cooperation is the basis for Arctic cooperation."⁶⁹⁰ China's Polar Research Institute in Shanghai was founded in 1989, and its scientists and representatives participate regularly in the Arctic Science Committee, the International Polar Year project, and the Arctic Science Summit week. China has become an increasingly active member of the Arctic science community, as evidenced by its scientific research station on Svalbard, the construction of an aurora observatory in Iceland, and a recent request to open an Arctic research facility in Canada's Northwest Territories. With an annual polar research budget of roughly \$60 million (which includes activities in Antarctica) and with the construction of its second, non-nuclear icebreaker underway, China has undertaken six scientific expeditions to the Arctic between 1999 and 2015. It is interesting to note that in 2012, the Chinese icebreaker *Xuelong* (Snow Dragon) traversed the Northern Sea Route on its way to the Chinese research station on Svalbard,⁶⁹¹ yet on its return trip, the *Xuelong* sailed into the international waters of the Central Arctic Ocean, underscoring China's continued interest in the Central Arctic's international waters.

While China's involvement in the Arctic has primarily been in a scientific and research capacity, it has begun to expand its economic involvement in the European and Eurasian Russian Arctic. In 2013, China signed an FTA with Iceland, the first FTA signed between China and a European country (although not a member of the European Union). Also in 2013, China's Ocean Shipping Group (COSCO) sent the first container ship, the *Yong Sheng*, through the Northern Sea Route in order to test the viability of the route for container traffic.⁶⁹² China has shown great interest in investing in Arctic mineral resources, particularly in Greenland. In 2011, a Beijing-based entrepreneur sought to develop a large portion of northern Iceland, reportedly as a luxury hotel and eco golf course, but this deal was rejected by the foreign minister.⁶⁹³ China has also invested in Greenland through the Chinese-owned London Mining Company to mine rare earth minerals. Since 2009, two private Chinese mining companies from Jiangxi Province have invested in mineral prospecting projects in Greenland.⁶⁹⁴

Recently, China's Arctic presence took a new form. In September 2015, a group of five Chinese naval vessels consisting of three surface combatants, an amphibious ship, and a supply ship were observed operating in the Bering Sea, transiting U.S. territorial waters near Alaska, and passing within about 12 nautical miles of the Aleutian Islands following a joint Russian-Chinese military exercise. According to the Pentagon, it was the first time the U.S. military has seen Chinese naval activity in the Arctic region.⁶⁹⁵ While the vessels did not violate international law, the incident reflects a growing Chinese ambition to establish itself as a player in the Arctic region. As polar ice levels continue to recede, China is showing a growing interest in the Northern Sea Route as a means of transporting goods between Asia and the Europe.

Due to sanctions on Russia, Moscow has increasingly looked to Beijing as an alternative to U.S. and European energy companies and financial markets in order to develop and export Russian energy resources in the Arctic. In early 2015, for the first time, a Russian official announced that the Kremlin was considering allowing Chinese investors to own more than 50 percent stakes in Russia's strategic oil and gas fields.⁶⁹⁶ In 2014, President Xi Jinping and President Vladimir Putin signed a \$400 billion, 30-year energy deal for the delivery of 38 billion cubic meters of natural gas to China starting in 2018.⁶⁹⁷ Russia's Yamal liquefied natural gas project is the centerpiece of its current Arctic gas projects. In June 2013, Russia's largest private natural gas producer, Novatek, signed a deal to supply 3 million tons of LNG per year to China from Russia's Yamal LNG project. The project also envisions constructing 15 icebreaking LNG vessels, each with a 170,000-cubic-meter capacity, with non-Russian shipping companies expected to take part in the project, including Japanese operator Mitsui OSK Lines and China's first LNG tanker operator, China LNG Shipping Holdings.⁶⁹⁸ The ships will be the first ice-class LNG carriers with the ability to break 5 feet of ice at 5 knots, thus enabling the fleet to operate in the Northern Sea Route without full-time icebreaker assistance. It is anticipated that the first vessel will be developed by February 2016 and that this icebreaker tanker fleet will supply gas to Asian markets in the summer months, which would increase vessel traffic in the narrow Bering Strait. China is also poised to benefit from Russia's northern oil fields once the construction of the 435-mile Kuyumba-Taishet pipeline in Eastern Siberia is completed. The \$3.6 billion pipeline is expected to transport 15 million tons of oil per year from Russia's northern oil fields to China.⁶⁹⁹

Japan

Japan became an Arctic actor as early as 1925 when Japan became one of 14 signatories to the Spitsbergen Treaty, which recognizes Norway's sovereignty over the Svalbard archipelago in the Arctic, but grants hunting and fishing rights to the treaty's contracting parties. Japan has also been actively engaged in scientific research at both Poles, conducting polar research in both the Arctic and Antarctic since 1957. In 1990, Japan formally joined the International Arctic Science Committee (IASC) and established the Centre for Arctic Research at the National Institute of Polar Research (NIPR).⁷⁰⁰ Japan hosted Arctic Science Summit Week in April 2015 where participants from 27 countries discussed the role of Arctic science in society, future science priorities in the Arctic, and new strategies to promote international cooperation in the Arctic.⁷⁰¹ Japan has also been engaged with the Arctic Council's Scientific Cooperation Task Force, which is working toward an agreement to enhance scientific research cooperation in the Arctic.

Diplomatically, Japan has started taking steps toward Arctic policy development, including the creation of an Arctic Task Force in 2010.⁷⁰² A 2012 report recommended that Japan produce a white paper on its Arctic policy.⁷⁰³ The Japanese government has also established an inter-ministerial committee on the Arctic and created a permanent Arctic representative in 2013.⁷⁰⁴ The Arctic region is also included in Japan's Basic Plan for Ocean Policy in 2013.⁷⁰⁵ According to the Basic Plan, Japan will conduct scientific research in the Arctic related to the impact of climate change, both on a regional and global level, as well as the potential viability of the Northern Sea Route and the Northwest Passage, including the development of a stable marine trans-

port system and navigational technology. The Japanese government has begun exploring the use of the Northern Sea Route as well as the possibility of creating a new icebreaker.⁷⁰⁶

Japan has relatively modest interests in the Arctic, with the exception of activities related to the environment and climate change, but its private sector continues to express interest in pursuing more economic opportunities, particularly for energy development.⁷⁰⁷ In 2014, a joint Japanese-Chinese business venture announced a new Arctic route to the Yamal LNG facility located in Russia's Arctic region.⁷⁰⁸ However, such near-term business ventures will likely face serious hurdles due to Japan's participation in sanctions against Russia.

South Korea

Similar to Japan, South Korea's polar activity has primarily centered on science and research. South Korea is also a signatory to the 1920 Spitsbergen Treaty and operates a research station in Svalbard, Norway.⁷⁰⁹ Between 1993 and 1995, South Korea began its engagement in the Arctic with a preliminary scientific study on the Arctic environment and climate, and became a member of the IASC in 2002. In 2012, former president Lee Myung-Bak visited Greenland and Norway as a demonstration of South Korea's commitment to green growth. During President Lee's visit to Norway, the two countries signed two agreements related to developing cooperation on "green" shipping technology.⁷¹⁰ South Korea became a permanent observer to the Arctic Council in May 2013.

Prior to South Korea becoming a permanent observer, however, Seoul identified the Arctic as an area of growing importance and emerging opportunity, particularly related to energy security and diversification, building ice-strengthened ships and oil platforms, and potentially utilizing the NSR. It is estimated that South Korea could save roughly \$1 billion annually in transportation costs if the government replaced 10 percent of its oil imports from the Middle East with Arctic oil.⁷¹¹ In order to achieve this diversification and become less dependent on Middle Eastern oil, the Korean government provides incentives to companies that import oil from other regions. In 2012, South Korea received three ships carrying hydrocarbon products from the Arctic, with the first South Korean ship making the journey in 2013.⁷¹² The state-owned Korea Gas Company (KOGAS) has expressed interest in commercial exploration above the Arctic Circle, although the company has only taken preliminary steps at this point.⁷¹³ The potential economic benefits of utilizing the NSR have largely driven South Korea's interest in the Arctic, particularly given that roughly 99 percent of South Korea's trade volume is handled via shipping and Northern Europe is one of South Korea's largest trade partners.⁷¹⁴ To promote the future use of the NSR, the Korean government is providing incentives, including discounts for port usage, to shipping companies. The increased commercial activity in the Arctic has also benefited South Korean shipbuilding companies, including Hyundai Heavy Industries, Samsung Heavy Industries, and Daewoo Shipbuilding and Marine Engineering (DSME), which are some of the world's top producers of ice-breakers and ice-hardened ships. In 2014, DSME won a \$300 million contract from Sovcomflot, Russia's state-owned shipping company, to construct an ice-capable LNG carrier, the first of 16 LNG carriers that DSME plans to build.⁷¹⁵

In December 2013, South Korea became the first non-Arctic state to issue an Arctic policy plan. The Pan-Government Arctic Development Plan outlines South Korea's Arctic policy goals, in-

cluding building Arctic partnerships, enhancing scientific research, and developing new industry through economic involvement. The document also highlights what South Korea considers to be the four strategic challenges in the Arctic: strengthening international cooperation, enhancing scientific and research efforts, developing Arctic-related businesses and economic activity, and establishing an institutional basis.⁷¹⁶

Singapore

Singapore's primary interests in the Arctic center on environmental concerns related to sea level rise and economic opportunities to further develop its maritime infrastructure and industry should the Northern Sea Route become economically viable. As a low-lying island nation, Singapore could face major ramifications from sea level rises due to the diminishing Arctic ice. The government has taken a serious look at mitigating the effects of climate change in the Arctic and has started working closely with Arctic nations on the issue.⁷¹⁷

Singapore is heavily reliant on seaborne trade. Merchandise trade was 252.1 percent of Singapore's GDP in 2014.⁷¹⁸ The port of Singapore is the second largest in the world, is a vital stop along the Europe-East Asia trade route, and in 2012 its marine industry generated nearly \$12 billion in revenue.⁷¹⁹ Unlike some of the other Asian states involved in the Arctic, Singapore is less interested in accessing the region's natural resources than in developing and selling sophisticated maritime technologies, particularly drilling platforms.⁷²⁰ In 2008, Keppel Singmarine, a shipbuilding company, built two icebreakers for the Russian energy company Lukoil—the first ice-class vessels built in Asia.⁷²¹ Keppel Singmarine also constructed an ice-class floating storage and offloading (FSO) vessel and four ice-class rescue vessels for Lukoil.⁷²²

As a member of the International Maritime Organization (IMO), Singapore has been active in global governance regimes for ocean management and maritime safety and stewardship, particularly in the development of a mandatory Polar Code. As a key player in the negotiations that produced the 1982 UNCLOS agreement, Singapore is a strong advocate for freedom of navigation, maintaining that the high seas are international waters and therefore require enhanced cooperation between littoral and user states in order to ensure the safe and sustainable use of the oceans and waterways.⁷²³ Singapore has also reached out to indigenous communities, setting up exchanges with community leaders and establishing educational opportunities for indigenous students.⁷²⁴ While Singapore has not yet articulated an official Arctic policy, Singapore appointed a special envoy for Arctic affairs in 2012, and has participated in several Arctic Council working groups.⁷²⁵

THE U.S. NAVY ARCTIC ROADMAP

The U.S. Navy's updated Arctic Roadmap for the period 2014 to 2030 outlines the U.S. Navy's responsibilities in the Arctic and provides guidance for future Arctic operations and contingencies. The Roadmap specifies the strategic objectives of the U.S. Navy in the Arctic as follows: ensuring U.S. Arctic sovereignty and providing homeland defense; providing ready naval forces to respond to crises and contingencies; preserving freedom of the seas; and promoting partnerships within the U.S. government and with international allies and partners.⁷²⁶ The Arctic Roadmap emphasize-

es the need to gain better environmental understanding of the changing nature of Arctic sea ice volume and the extent to which it affects the Arctic's economic development.

When the U.S. Navy released the updated Roadmap in February 2014, it did not foresee the dramatic changes to Northern Europe's security environment following Russia's illegal annexation of Crimea and military intervention in eastern Ukraine. The U.S. Navy's assessment that the Arctic will remain a "low threat security environment" and that the Arctic region is "unlikely [to see] state-on-state conflict" resulted in the conclusion that the U.S. Navy's "existing posture remains appropriate" in the Arctic. These assessments are now out-of-date in light of renewed tensions with Russia.

In the Arctic, Russian submarine activity in the North Atlantic—Greenland, Iceland, United Kingdom (GIUK) gap—and military modernization of the Russian Northern Fleet have increased, and the Russians have established a new command structure. Further, it is likely that the narrow Bering Strait—for which PACOM is partly responsible—will become a future strategic choke point as more trans-Polar shipping and LNG carriers traverse the narrow strait.⁷²⁷

The Arctic Roadmap notes that the U.S. Navy's "surface and air forces have limited operational experience in the Arctic" and that the U.S. Navy needs to periodically evaluate preparedness for operations and conduct training exercises.⁷²⁸ The Roadmap appropriately highlights the need to improve Arctic domain awareness, but these plans, similar to the U.S. Navy's plans to train additional naval personnel in Arctic operations, suggest that the U.S. Navy will analyze the question rather than take concrete action with accompanied budget resources. If the U.S. Navy wishes to "provide ready forces for current operations and contingency responses" in the Arctic, it will need to operationalize its thinking much earlier than its Roadmap suggests.

LACK OF U.S. ICEBREAKING CAPABILITIES AND FUTURE U.S. CHALLENGES

Although the United States is the largest maritime power in the world, it maintains only two functional icebreakers:

- The heavy-ice breaker *Polar Star*, commissioned in 1976, whose service was recently extended for approximately 10 years, and is primarily responsible for resupplying the McMurdo Antarctic Research Station; and
- The medium-strengthened icebreaker *Healy*, commissioned in 2000 and used mostly for scientific research. The United States has a third heavy icebreaker, the *Polar Sea*, which is currently in dry-dock in disrepair.

With such a small fleet, the U.S. must either rely on other nations to augment its current capabilities or accept the risk of not being able to respond to national emergencies in the Arctic.

The U.S. Coast Guard has been relentless in its call for additional U.S. icebreaking capabilities. Both the U.S. Coast Guard, in its Arctic Strategy published in May 2013, and Department of Homeland Security, in its June 2013 Mission Need Statement (MNS), have expressed the need to develop greater icebreaking capabilities to include an additional three heavy-ice and three medium-ice

breakers with an estimated cost of \$3.2 billion. It is projected to take 10 years and cost approximately \$1 billion for the United States to construct a single icebreaker. Executing such a program would be a challenge for the Coast Guard, whose entire budget for FY 2016 is \$9.96 billion. The Navy's shipbuilding budget is much larger, \$16 billion, but stretched to construct the required fleet size and facing large demands when the *Ohio* Submarine Replacement Program moves into production. The Congressional Research Service, the Congressional Budget Office, and others have criticized it for being underfunded even without the addition of a major icebreaker program.⁷²⁹

Thus far, the Coast Guard received \$7 million in FY 2013, and \$2 million in FY 2014 to assess what the design and construction of a U.S. new polar icebreaker would entail. President Obama recently announced that the U.S. government would advance by two years the identification of funding for a new icebreaker. Yet, even in a best-case scenario, if adequate funding were identified, a design were produced, and a contract were let by 2020, the United States would be unable to add an icebreaker into its inventory until the late 2020s.

The critical lack of U.S. icebreaking capacity became acute in December 2011 when icebreaking capabilities were needed to ensure an emergency fuel shipment reached Nome, Alaska. A Russian ice-strengthened fuel tanker was leased to carry the fuel but the vessel required icebreaking services. The *Healy* was originally scheduled to be in Antarctica but its voyage was delayed, allowing the *Healy* to guide the Russian fuel tanker. Had the *Healy* not been in the region, Nome would not have received a life-saving fuel shipment. The United States has leased foreign icebreakers to resupply the McMurdo station, such as the Swedish owned *Oden*, but it had to be returned in 2013 due to severe ice conditions in the Baltic Sea that year.

With over 50 percent of the total Arctic coastline, the Russian Federation maintains the world's largest fleet of nuclear and non-nuclear icebreakers, totaling 40 icebreakers (19 publicly owned and 21 privately owned), plus six under construction and a further five planned.⁷³⁰ Six in the fleet are heavy icebreakers, all publicly owned and nuclear powered, of which four are currently operational. Another 19 are medium-strengthened icebreakers (seven publicly owned and 12 privately owned), while 15 are light icebreakers (six government owned and nine privately owned).⁷³¹

POLICY RECOMMENDATIONS FOR THE ARCTIC

Reassess the Navy's Arctic Roadmap

The USN should undertake a comprehensive assessment to understand what recent Russian military changes in the Arctic mean. The reassessment should include a review of the USN's submarine posture in the Arctic and North Atlantic, particularly in the GIUK gap, as well as in the Pacific. The current Roadmap suggests that the Navy will develop its Arctic CONOPs in the first quarter of FY 2018. In light of Russia's current aggressive behavior, the Navy should advance this time schedule to FY 2016.

The United States should also consider recapitalization of its ice-breaking capability based on an examination of a wide range of options, from the existing design and build approach, to domestic construction of foreign designs, to leasing of foreign-built ships.

Specify PACOM's Role in the Arctic

Although the changes to the 2011 UCP eliminated much of PACOM's Arctic responsibilities, it did not eliminate them entirely. Therefore, PACOM should conduct an internal assessment of its Arctic capabilities and responses as they align with the Defense Department's 2013 Arctic strategy to "ensure security, support safety, and promote defense cooperation, and prepare to respond to a wide range of challenges and contingencies—operating in conjunction with other nations when possible, and independently if necessary—in order to maintain stability in the region."⁷³²

For example, with PACOM so focused on the Far East, many officials may not be fully aware that USARAK reports to PACOM (through U.S. Army Pacific), that USARAK's Northern Warfare Training Center (NWTC) is the U.S. Army's primary cold-weather training facility, and that USARAK has Arctic-trained forces, including the only air mobile brigade in the PACOM AOR. These forces could be called upon to operate in other regions of the Arctic should the need arise, for example, for a search-and-rescue operation or for an oil spill occurring above the Arctic Circle.

Promoting PACOM defense cooperation with other Asian countries in the Arctic, particularly for cold-weather training, could also be a fruitful area of cooperation. Despite a potential cut of 2,600 soldiers from Alaska's JBER, USARAK has the potential to be a center of excellence in cooperation with other Arctic nations. The USCG has proposed a vessel-traffic management scheme for the U.S. side of the Bering Strait,⁷³³ but it is not clear how PACOM would engage in this initiative, as opposed to NORTHCOM's and EUCOM's role in the Bering Strait region in support of the U.S. Coast Guard. PACOM should undertake a detailed assessment of its role in the Arctic as it relates to the Bering Strait and clarify its operational role during a massive rescue operation (MRO) or oil-spill response in the Arctic in anticipation of increased LNG tanker traffic in route to Asia from the Yamal LNG project.⁷³⁴ Government-wide emergency response exercises should be designed for the Bering Strait in the 2015–2016 period.





7 | RECOMMENDATIONS FOR
SUSTAINING THE REBALANCE

The U.S. rebalance to the Asia-Pacific is critical to security and prosperity throughout the region and across the globe. As the United States looks to an ascending Asia, leaders in Washington will have to manage a diverse set of challenges that includes China's rise, North Korea's belligerence, Russia's Pacific and Arctic ambitions, and other historical tensions over territorial claims, as well as risks associated with terrorism and humanitarian disasters. Developing a strategy to protect U.S. interests against these risks poses a serious test for U.S. leaders, but Washington retains fundamental advantages. U.S. allies and partners in the Asia-Pacific are strong supporters of the rules-based regional and international order. Moreover, leaders throughout the region remain interested in working with the United States, each other, and regional organizations to sustain Asian security and prosperity. If anything, polling shows that most regional states want more leadership, initiative, and engagement from Washington, not less.

The United States has done much to strengthen its position in the Asia-Pacific since President Obama came into office, but more must be done to implement and sustain the rebalance. This report has identified progress and remaining challenges in all three pillars of the defense rebalance to Asia: U.S. military posture, ally and partner capabilities and defense cooperation, and U.S. capabilities. The preceding sections included recommendations for closing remaining gaps in the U.S. ability to secure its interests in the region through the next 10 years. To fully implement the recommendations of this study requires resources at a level above the president's budget. The rebalance to the Asia-Pacific will therefore require the Congress to forge a long-term bipartisan agreement to fund defense at the higher levels for which there is a broad consensus.

The CSIS study team categorizes its highest-priority recommendations as falling into four broad areas:

- Aligning Asia strategy within the U.S. government and with allies and partners;
- Strengthening ally and partner capability, capacity, resilience, and interoperability;
- Sustaining and expanding U.S. military presence; and
- Accelerating development of innovative capabilities and concepts.

To give policymakers an approximate sense of the scale of specific initiatives—and to aid in prioritization and synchronization—the initiatives below are categorized as falling into one of three broad cost categories: high (over \$1 billion in additional annual costs above the president's FY 2016 budget during the five-year period); medium (\$10 million to \$1 billion in additional annual costs); and low (under \$10 million in additional annual costs). These categories consider only U.S. fiscal costs, not political costs or expected costs to allies and partners. Accomplishing the initiatives discussed here will require sufficient resources and a continued commitment to the rebalance by senior leaders in the U.S. government over a period of years. Many of these proposals are unlikely to be adopted during the current administration's remaining time in office, given the level of effort and resources needed to make them a reality. Nevertheless, although the political and monetary costs of these initiatives might be substantial, so too would be the benefits.

1. ALIGN ASIA STRATEGY WITHIN THE U.S. GOVERNMENT AND WITH ALLIES AND PARTNERS

Although the Obama administration issued a series of speeches and documents on the rebalance, the authors found that there remains no central U.S. government document that describes the rebalance strategy and its associated elements. In interviews with leaders throughout the Department of Defense, in various U.S. agencies, on Capitol Hill, and across the Asia-Pacific, the study team heard consistent confusion about the rebalance strategy and concern about its implementation. Indeed, a 2014 study by CSIS found that language used to describe the rebalance has changed substantially since its announcement in 2011.⁷³⁵ Addressing this confusion will require that the executive branch develop and then articulate a clear and coherent strategy and discuss that strategy with Congress as well as with allies and partners across the world. The steps below would increase strategic alignment within the U.S. government and with allies and partners.

1.1 | Prepare an Asia-Pacific Strategic Report

In the early 1990s, the George H. W. Bush administration released two East Asia Strategy Initiative reports, which were followed by the Clinton administration's East Asia Strategic Report (often called the Nye Initiative), setting forth U.S. security strategy toward the Asia-Pacific. These reports made clear the importance of U.S. regional presence, and explained Washington's strategy, for both internal and external audiences.

Today, a new strategic report is needed for the Asia-Pacific region. Although the Department of Defense issued an August 2015 Asia-Pacific Maritime Security Strategy, this defense-focused and maritime-specific strategy cannot compensate for the lack of an overall whole-of-government strategy. The 2016 National Defense Authorization Act contains language requiring that the president develop an overall strategy to promote U.S. interests in the region. As part of this report, the National Security Council should develop a principals-level regional strategy to deter coercion and the use of force, to reassure allies and partners, and to engage potential competitors throughout the region. Given the need to develop and execute a whole-of-government approach, this strategy should be among the first documents released by an incoming administration in 2017.

Estimated cost: low.

1.2 | Increase Administration Outreach to Congress

The Obama administration has not quelled congressional concern about the execution of the rebalance, despite making important progress in a number of areas. Congressional leaders on both sides of the aisle remain worried about implementation of the rebalance, particularly efforts to counter Chinese coercion in the South China Sea. Presently, congressional focus is fractured along committee lines and lacks coherence. On the positive side, there is a new group of members in both houses who have demonstrated interest in sustained focus on the region.

The United States has made significant progress on Asia-Pacific initiatives when the administration and Congress have cooperated, as was the case with the creation and announcement of the Southeast Asia Maritime Security Initiative. The administration should reach out to leaders of

both parties to ensure support needed for major Asia-Pacific initiatives. Congress, in turn, should establish an “Asia-Pacific Observer Group” in each chamber. These groups could consult and advise U.S. officials on Asia-Pacific issues as well as monitor progress and report to the Congress on relevant matters. An observer group is a well-developed method to generate institutional focus and coherence, most successful when fully bipartisan, and traditionally used to monitor complex arms control negotiations.

Finally, the secretary of defense should establish a mechanism by February 2016 to brief presidential candidates and their senior advisers on critical Asia intelligence developments and policy initiatives to improve the prospects for maintaining the rebalance’s momentum during the transition to the next administration.

Estimated cost: low.

1.3 | Ensure Alignment between Strategy and Resources

As the United States seeks to rebalance to the Asia-Pacific, the Defense Department must ensure that strategy and resources are aligned. Strategy-resource alignment is necessary due to the gap that has opened between the stated goals of strategy, including new demands in the Middle East and Europe, and the resources available. The 2015 budget deal averted the near-term crisis but not the long-term strategy-resource mismatch.

In preparation for the next strategic review, therefore, the Defense Department should develop a set of classified strategic alternatives that it can provide to the next administration. These strategic alternatives should provide a range of illustrative tradeoffs including various ends, ways, and means combinations and should explicitly consider different resource levels. The alternatives should consider program tradeoffs and efficiencies to make headroom for new initiatives.

In conducting the strategic review, the Defense Department should take advantage of the revised statutory language for the Quadrennial Defense Review, which allows senior leaders to examine resources as part of their review process. Congress, in turn, should begin now to enact defense reforms that can move scarce funding from lower-priority programs to higher priority, especially from overhead to operating forces. These actions would also clearly set a baseline for the next administration to assess how it can implement the rebalance amid other priorities without adopting unrealistic assumptions about future savings. If the gap between strategy and resources is too great, the administration can argue credibly that additional resources are necessary to achieve desired ends.

Estimated cost: low.

1.4 | Better Coordinate U.S. Strategy with Allies and Partners

Leaders in Washington frequently discuss the need for combined efforts to meet shared challenges, but leaders in foreign capitals too often feel left out of U.S. decisionmaking. During interviews with officials in foreign capitals, CSIS scholars consistently encountered concerns about long-term U.S. strategic choices, and the conclusions underlying those decisions, particularly with respect to China.

To address these concerns, administration officials should reenergize efforts to engage their counterparts among allies and partners on comprehensive assumptions, assessments, and strategy toward China. As a starting point, U.S. officials should work with allies and partners to examine deterrence and escalation dynamics in “gray zone” conflicts, and jointly develop whole-of-government policies to address coercive behavior. The U.S. PACOM Commander should enhance its efforts to advocate for greater resources for its AOR, prioritizing those military capabilities of allies and partners that best align with U.S. security interests. Additionally, the United States should establish a contact group among key allies and partners to discuss China policy on a more regular basis.

Estimated cost: low.

1.5 | Expand Confidence Building, and Crisis Management with China

The CSIS team observed that tensions between Washington and Beijing have been growing, due in large part to China’s increasingly coercive behavior in maritime disputes and disruptive cyber activity. Constructive Sino-American relations are important to regional security and prosperity, but cannot come at the cost of U.S. interests or those of allies or partners. Leaders in Washington and Beijing have taken steps to improve ties, as evidenced by recent agreements on air-to-air safety and crisis communications and cybersecurity. Nevertheless, full implementation of existing agreements and additional efforts to forge new crisis-management mechanisms will be required.

Potential initiatives could include deepening U.S.-China dialogues—such as the Asia-Pacific Security Dialogue—to include more direct discussion of regional strategies and perspectives on difficult issues, such as North Korea, the South China Sea, and space. In addition, the United States could encourage China to adopt bilateral confidence-building measures with U.S. allies and partners, such as Japan and the Philippines. To avoid potential maritime clashes, Washington and Beijing should act on their tentative agreement to pursue adaptation of the Code for Unplanned Encounters at Sea to coast guard vessels. Crisis-management mechanisms are also needed at the political level, to ensure that those crises that occur do not escalate through miscalculation. Confidence-building measures could help to build trust, but, if Chinese coercion continues apace, U.S. leaders may have to condition some military coordination, such as involvement in RIMPAC, on adherence to international rules and norms.

Estimated cost: low.

2 | STRENGTHEN ALLY AND PARTNER CAPABILITY, CAPACITY, RESILIENCE, AND INTEROPERABILITY

The United States needs robust allies and partners across the Asia-Pacific, but the authors found growing concern that security challenges are outpacing the capabilities of regional states. Many allies and partners are struggling to mitigate security risks, particularly those having to do with maritime disputes in the South China Sea and East China Sea. The United States seeks and benefits from the success of all states throughout the region, so building ally and partner security capability and capacity is in the U.S. interest. Working together more closely, through coordination of strategic approaches and greater interoperability, is an important step in this direction. Strengthening regional security capability, capacity, resilience, and interoperability requires a differentiated strategy that works with highly capable militaries like Japan, Australia, India, South Korea, and Singapore while also assisting states in Southeast Asia struggling to meet basic defense needs.

2.1 | Pursue Federated Approaches with Highly Capable Regional Allies

For decades, the United States has worked on a largely bilateral basis with its allies, but today new challenges require new approaches. Although the United States has long emphasized the desirability of working with allies to meet pressing security challenges, it has not achieved deep integration of defense industries and capabilities. Meanwhile, with the United States and its allies hitting defense spending limits and the cost of developing and fielding systems increasing rapidly, working together is of paramount importance. A “federated” approach that includes forward-thinking strategies for how to develop and share capabilities and capacity can knit together the United States and its key allies. By sharing development of federated systems, training, logistical support, concept development, and potentially some operational missions, the United States, Japan, Australia, and South Korea could draw closer to one another.

For example, the allies’ strength in undersea warfare is an important edge amidst the maturing anti-access/area denial capacities in the Asia-Pacific region. Leveraging expertise in submarine design and operations could increase each ally’s capabilities while also improving interoperability among them. Other areas of cooperation could include missile defense, maritime domain awareness, cybersecurity, and ISR, amphibious operations, and intelligence sharing. The PACOM commander should identify a prioritized list of capabilities in which a federated approach could enhance warfighting capabilities. In pursuing these and other federated defense initiatives, allied officials must work with their respective civilian and military leaders, legislatures, and defense industries. These types of federated approaches to security are necessary if the United States and its allies are to meet shared challenges.

Estimated cost: low.

2.2 | Build Maritime Security Capacity in Southeast Asia

The greatest shortfall among allies and partners in Southeast Asia, both in capability and capacity, is in maritime security. Tensions are growing over disputed claims in the East and South China Seas, but many smaller states lack the sensors or patrol craft required to monitor their maritime

approaches. Helping allies and partners develop, deploy, maintain, and operate maritime systems is vital to their ability to provide for their own security. In particular, the United States will need to work with highly advanced militaries, such as those of Japan, South Korea, Australia, and India, to help provide critical platforms, enabling systems, training, and maintenance capabilities.

The Pacific Command should bring these states together on a regular basis to harmonize their respective capacity-building efforts in Southeast Asia. Pacific Command should also work with the Office of the Secretary of Defense and the Department of State to develop a maritime security joint regional campaign plan that takes these contributions into account and aligns U.S. Foreign Military Sales, training and exercises, and other mechanisms with allies and partners.

Whole-of-government engagement will be necessary to address maritime security needs that fall outside traditional areas of military expertise. For example, financial support might be provided by the Japanese Bank for International Cooperation (JBIC), which can fund development efforts in the security realm. Additional U.S. funding will also be needed, as only \$50 million has been appropriated for the Southeast Asia Maritime Security Initiative (a small sum when compared to spending on European and Middle Eastern reassurance), with future funding yet to be determined.

Estimated cost: low for coordinating capacity building; medium for additional activities, depending on the scale of U.S. commitment.

2.3 | Form a Standing U.S. Joint Task Force for the Western Pacific

Maritime security challenges within the Asia-Pacific are more complicated today than ever before, highlighting the need for clear U.S. command and control relationships. If a conflict were to occur today in the First Island Chain, the Pacific Command would likely establish a joint task force to centralize command and control responsibilities. However, experience shows that arrangements of this sort are most effective when established before a conflict and exercised on a regular basis. The risks associated with major combat operations in the Asia-Pacific theater place a premium on preexisting command relationships. This function was once served by Joint Task Force 519, which was prepared and trained to respond to a crisis in Northeast Asia but has since been dissolved. Interviews with numerous military and civilian leaders suggest that a standing Joint Task Force for Maritime Security is still needed to exercise operational command in future contingencies.

The Pacific Command has made great strides in recent years, but its political-military responsibilities could hamper effective operational command in a high-intensity conflict. The Defense Department should study whether Pacific Fleet, 7th Fleet, III MEF, or U.S. Forces Japan would be best suited to lead a Joint Task Force, balancing the desire for a forward command element, the physical requirements of each location, and the expertise of various commanders and staff. Preliminary analysis suggests that the commander of the U.S. Pacific Fleet might be well positioned to exercise operational command and control, but that there could also be operational advantages and deterrence and reassurance benefits to deploying the Joint Task Force within the first island chain. Therefore, Pacific Fleet might serve as a Joint Task Force lead with 7th Fleet acting as a potential forward headquarters location during a crisis.

A critical component of such a task force would be frequent training and exercises, and development of strong relationships with allies and partners. Some allies might also contribute officers to serve on the staff of the Joint Task Force, thereby ensuring close coordination with regional partners.

Estimated cost: low to medium, depending on the degree of “dual hatting” of existing staff.

2.4 | Encourage Japan to Establish a Joint Operations Command

As the world’s third-largest economy, Japan is a critical U.S. ally from a political, economic, and security standpoint. Prime Minister Abe’s desire to play a more proactive role in international affairs creates the opportunity to further strengthen the alliance, by addressing the need for improved alliance command structures. Although the allies recently agreed to establish an Alliance Coordination Mechanism, it lacks the command and control elements necessary for a rapid combined and joint response to potential crises or conflicts. The authors encountered concern in both Tokyo and Washington that the command and control arrangements are not sufficient for the type of complex, high-intensity warfare that the allies must be prepared to conduct.

To address this requirement, the United States should offer expertise and suggest establishment of a joint operational command, similar to the Australian Joint Operations Command. U.S. personnel could be integrated into this command, if deemed appropriate by the government of Japan. This would improve alliance interoperability, and Japanese officers could serve in similar positions in a U.S. Joint Task Force for the Western Pacific. Such an arrangement would separate the command and control functions from the chief of defense functions, which is critical to effective operational responses.

Estimated cost: low.

2.5 | Deepen Whole-of-Government Humanitarian Assistance and Disaster Relief Expertise

Sitting on the ring of fire, the Asia-Pacific region faces the world’s highest risk of natural disaster, and the most geographically concentrated population on Earth. In just the last decade, earthquakes, tsunamis, and typhoons have brought serious damage to nearly all states in the region. Too often, regional militaries have struggled to meet this shared challenge. The U.S. Agency for International Development has a strong existing capability for emergency response, as do U.S. and international nongovernmental organizations. The military also has an important role to play in developing regional capability, capacity, and interoperability and establishing regional stock-piles of supplies enables effective humanitarian relief missions.

To expand whole-of-government cooperation on disaster response, the Pacific Command should host a global conference to bring civilian organizations with disaster response expertise together with Asian military representatives. The Pacific Command could also establish an emergency response portal to act as a repository for capabilities and contacts, both for the regional governments and nongovernmental organizations. In addition, training and exercising for humanitarian assistance and disaster relief missions, and practicing interoperability between foreign forces before a crisis occurs, also increases the speed and effectiveness of operations. Exercises should include whole-of-government engagement, creating institutional connections and individual trust before a crisis occurs.

Estimated cost: low.

3 | SUSTAIN AND EXPAND U.S. MILITARY PRESENCE

The authors encountered concern both in Washington and in foreign capitals about the sustainability of U.S. military presence throughout the region. Forward-stationed U.S. forces are one of the most important ways to signal U.S. political commitment to the region. The political and military value of forward presence from both permanently stationed and temporarily deployed forces is enormous. U.S. military presence serves as a stabilizing force in the region, helping to deter conflict on the Korean Peninsula and manage crises from the South China Sea through the Indian Ocean. Forward presence provides opportunities for partnership, interoperating, training, and exercising with allies and partners that U.S.-based forces cannot support.

The goodwill and the capabilities of the United States are on display each time U.S. forces contribute to humanitarian assistance and disaster relief missions. Operating together on a daily basis helps the United States build partner capacity and prove it is an enduring partner. Over time, these efforts contribute to security throughout the Asia-Pacific region. Moreover, for permanently stationed forces, the financial expense of housing U.S. military personnel and families in Asia can be higher than housing them in the United States, but the costs are often offset by substantial support from host nations. Nevertheless, facing a growing anti-access/area denial threat, U.S. bases and forward-deployed forces are increasingly under risk.

The authors identified initiatives to address capability gaps and capacity shortfalls in 10 areas: base realignment, surface fleet presence, undersea warfare, amphibious warfare, air supremacy, missile defense, ground force mission sets, logistics, munitions, and intelligence, surveillance, and reconnaissance. Forward presence, including forces deployed, is central to U.S. strategy in the Asia-Pacific and strengthening U.S. military posture in these areas will require a sustained commitment and additional resources.

3.1 | Continue Implementing and Resourcing Key Posture Initiatives

Strengthening U.S. posture in the Asia-Pacific will require continued efforts to minimize the cost of forward presence while maximizing forward-deployed capability and political sustainability. Ongoing initiatives to realign U.S. forces in Japan, South Korea, and Guam are vital to these efforts, as are posture initiatives in Australia, the Philippines, and elsewhere.

- **Japan:** U.S. presence in Okinawa is a strategic necessity given growing regional security challenges. Shifting from the Futenma Air Station to the Futenma Replacement Facility in Henoko is critical to this realignment, as is continuing to work closely with Tokyo to address host-nation concerns. Political dynamics in Okinawa have changed substantially in recent years and local government efforts to halt construction could further complicate a realignment 20 years in the making. Nevertheless, the study team reaffirms the conclusion from the 2012 study that moving forward with the Futenma Replacement Facility remains the best option for the United States and Japan. Although U.S. bases on Okinawa impact on the local population, the governments have carefully designed land returns and realignment efforts to minimize this impact while maintaining capabilities required for deterrence and reassurance. As necessary, the allies should consider adjusting operations or accelerating return of facilities under the Special Action Committee on Okinawa.

- **South Korea:** Realignment of army facilities in South Korea will make for a more sustainable and less vulnerable posture on the Korean Peninsula. The shift to rotational deployment of units to South Korea has ensured that elements arrive well trained, but concerns remain about the combat readiness of newly arrived forces in terms of familiarization with terrain, logistics, and South Korean counterparts. The Defense Department should examine lessons from operations in Iraq and Afghanistan that might mitigate these problems; for example, phased initial sub-unit deployments or integration of South Korean elements into U.S.-based training.
- **Australia:** Accelerate implementation of the air element of the U.S. posture initiative in Australia, including aircraft rotations and implementation of necessary infrastructure enhancements together with the government of Australia.
- **Guam:** Bases outside the First Island Chain are also vital, as these facilities are less vulnerable to attack. Guam is sovereign U.S. territory and provides a reliable base that is well located geographically for rapid responses to crises in both Northeast and Southeast Asia. Recent cooperation between the U.S. military and the Guam government has proven highly effective. The United States should continue to fund military construction in Guam to enable force realignment and to increase installation resilience. Efforts in the Commonwealth of the Northern Mariana Islands are also important for effective training and airfield diversification.

Beyond Japan, South Korea, and Guam, initiatives designed to expand access to facilities in Australia and the Philippines will help to diversify U.S. posture and increase combined training and exercise opportunities. U.S. allies already offset some of the costs of forward stationing, with Japan and South Korea providing nearly \$2 billion and \$900 million in yearly funding, respectively. The administration and Congress should work together to ensure that these posture initiatives receive continued political and financial support.

Estimated cost: high, but most already budgeted.

3.2 | Increase Surface Fleet Presence

China's growing assertiveness and its increasingly capable air, naval, and missile forces reinforce the need for additional surface force presence, especially that of carrier strike groups. The United States already has an aircraft carrier permanently stationed in Japan at Yokosuka Naval Base, but potential warfighting scenarios may require rapid deployment of additional surface forces, including carrier strike groups and surface action groups. Many of these assets are often deployed elsewhere, particularly to manage security concerns in the Middle East. Adding more small combatants, such as Littoral Combat Ships, helps to address some presence requirements. Yet, a larger demonstration of U.S. will and capability is necessary for deterrence and reassurance purposes.

In the near term, the United States should continue to develop a network of access agreements and facilities to ensure the ability to maneuver throughout the expanse of the Asia-Pacific region in times of crisis. For the longer term, the navy should examine the steps needed to move a second carrier (to include the associated strike group, air wing, and personnel) west of the international date line. One possible location would be Yokosuka, Japan.

The study team notes such a decision would require analysis of tradeoffs between the advantages of timely response to contingencies and the risks inherent in stationing more U.S. assets inside increasingly contested areas of the Western Pacific. Nevertheless, forward stationing an additional carrier would serve as a clear signal of U.S. commitment to the Asia-Pacific, strengthening deterrence and reassuring regional allies and partners. Forward stationing another West Coast carrier to Asia would also increase the overall carrier presence not only in the Asia-Pacific but in Europe and the Middle East as well. This increased efficiency is vital to maximize the effectiveness of existing platforms. Moreover, there is a unique political opportunity to shift a carrier forward in 2019, because the U.S. fleet is scheduled to add the USS Gerald R. Ford, which will deploy to California and would therefore permit movement of an older carrier forward without decrementing homeported U.S. carriers.

Estimated cost: high.

3.3 | Improve Undersea Capacity

While surface combatants contribute essential capabilities to expected operational requirements and send a strong signal of U.S. commitment, the greatest U.S. combat edge is in the undersea domain. U.S. nuclear attack and guided-missile submarines are the most capable in the world, and are likely to remain so for the foreseeable future. These assets are in high demand, so increasing their time-on-station is critical if the United States is to make the most use of its undersea advantage.

In the near term, the U.S. Navy could station an additional two Los Angeles-class nuclear attack submarines in Guam, making a total of six. Guam's location makes it ideal because transit times are relatively short to Northeast Asia, Southeast Asia, and throughout the western and southern Pacific. In the long term, the U.S. Navy should also consider homeporting several Virginia-class submarines in the Indian Ocean region. Locations to consider should include HMAS Stirling near Perth and Diego Garcia. Stationing submarines in the Indian Ocean would require significant investments in port facilities and host nation agreement. Yet, it would give the United States the ability to quickly pivot forces from the Indian Ocean to the Pacific, as well as provide the ability to monitor critical chokepoints such as the Sunda and Lombok Straits. Moreover, U.S. submarines based in the Indian Ocean could improve interoperability with Australia's Future Submarines and help create a southern maintenance and resupply location for U.S. Navy vessels.

Estimated cost: medium for shifting two additional submarines to Guam; medium for stationing two submarines in the Indian Ocean, depending on host-nation support and construction requirements.

3.4 | Deploy Additional Amphibious and Other Lift

Many likely missions, particularly in Southeast Asia, require a rapidly deployable force capable of conducting operations ranging from humanitarian relief to operating in contested maritime environments. U.S. Marines supply a critical capability in both regards, but they require substantial lift capacity. Particularly with the U.S. Marine Corps deployment to Darwin, inter- and intra-theater lift needs are substantial.

In the near term, the U.S. Navy could shift an amphibious assault ship from the West Coast to Guam to increase lift capacity and homeport an additional High Speed Vessel in Guam. In the medium term, the entire 10th Amphibious Ready Group should be moved from San Diego to Japan—likely Sasebo. Together, these would provide readily available intra-theater lift for U.S. Marines operating in Asian littorals, to include locations within Southeast Asia, and also increase the ease and decrease the cost of regional training and exercises.

In the long term, the navy and marines would ideally add an 11th Amphibious Ready Group to the Pacific, adding capacity to this already-stressed force. Much of the necessary infrastructure already exists at Naval Base Guam for such a force, although additional housing and port facilities would be required. Alternatively, the United States might work with Australia and Japan to share some operational amphibious lift and maneuver capacity, increasing allied interoperability while minimizing costs.

Estimated cost: medium for shifting an amphibious assault ship to Guam or adding additional high-speed vessels; medium to high for shifting an amphibious ready group to Guam, depending on the amount of additional construction needed; high for adding an additional amphibious ready group to the force; low for sharing amphibious lift with Australia and Japan.

3.5 | Continue Diversifying Air Operating Locations

The U.S. Air Force relies on a small number of main operating bases in East Asia, most notably Kadena Air Base in Okinawa, Kunsan Air Base and Osan Air Base in South Korea, and Andersen Air Force Base in Guam. These facilities have become increasingly vulnerable to attack, particularly from cruise and ballistic missiles. If these bases were disabled early in a conflict, the U.S. Air Force would struggle to generate combat power. Further, vulnerability is destabilizing. Pacific Air Forces has been developing alternate basing concepts, including a greater reliance on diversification using ally and partner facilities and more austere bases, potentially including civilian airfields.

The Departments of State and Defense should continue to work with the Philippines, Australia, and others to access, and where appropriate develop, additional facilities that could be used to deepen partnership. Operating from a range of airfields also provides greater strategic depth. Clustering bases could ease the logistical burden of operating multiple facilities while still complicating potential adversaries' targeting choices. If combined with aircraft shelters to defend against submunitions, and with concealment and deception, dispersal would greatly complicate an adversary's targeting challenge. In addition, capabilities for airfield construction and repair, and for exploiting shorter, expeditionary airfields need to be expanded and new technologies pursued.

To respond rapidly to this dynamic environment, the U.S. Air Force should create a more flexible Air Tasking Order process capable of responding rapidly to dynamic and diversified operations. The United States will have to increase its efforts to overcome political and budgetary obstacles, including in U.S. territories like the Commonwealth of the Northern Mariana Islands (CNMI), in order to develop a robust and diversified basing posture across the Asia-Pacific.

Estimated cost: medium for developing CNMI divert airfields; medium to high for developing facilities in the Philippines and Australia, depending on how much new infrastructure is constructed.

3.6 | Bolster Regional Missile Defenses

China, North Korea, and Russia all continue to develop their long-range missile capabilities, increasing the missile risk to forward-deployed U.S. forces, as well as to the U.S. homeland. Mitigating these risks requires the ability to intercept cruise and ballistic missiles, likely in large numbers. In the near and mid term this requires additional investments in missile inventories. DOD should assess whether any additional firing units are needed beyond those already planned.

Additional posture changes can help as well. In particular, the United States can work to link missile defense systems together, as it has attempted to do with systems operated by Japan and South Korea. Developing integrated air and missile defenses will be vital to defend critical operating locations. In the near term, two posture initiatives are worthy of consideration. First, the United States should work with South Korea to deploy U.S. Terminal High Altitude Area Defense assets to the peninsula, helping to defend against ballistic missiles. Second, the United States should improve cruise missile defenses on Guam, using either PAC-3 or in the future the Indirect Fire Protection Capability integrated air and missile defense systems.

Estimated cost: low for deploying existing Terminal High Altitude Area Defense assets to South Korea; low for deploying existing PAC-3 systems to Guam; medium for procuring Indirect Fire Protection Capability systems, for additional PATRIOT personnel, or for additional THAAD or PATRIOT missiles and firing units.

3.7 | Advance and Adapt the U.S. Army's Regionally Aligned Forces Concept

The U.S. Army conceived of the regionally aligned forces approach to the Pacific at a time when the Department of Defense believed that global demands would abate after Iraq and Afghanistan. Unfortunately, worldwide demand for U.S. Army forces, especially headquarters units that provide command and control as well as key enablers, is greater than anticipated and is likely to remain high for the foreseeable future.

The U.S. Army should revise its Regionally Aligned Forces concept and its Pacific Pathways deployments because unit integrity and the availability of forces will make the routine deployment of brigade-level formations difficult to sustain beyond those required to support deterrence and crisis response on the Korean Peninsula. Employing smaller units—at the company, battalion, or brigade headquarters level—could improve the effectiveness of regional deployments, including of missile-defense deployments, while reducing resource requirements.

Such an approach would better leverage National Guard and Army Reserve Forces. In particular, the National Guard's State Partnership Program should be expanded in Asia and viewed as a key component of Regionally Aligned Forces. There are currently 69 State Partnership Programs of which 22 are with EUCOM and 22 with SOUTHCOM; only 8 are with PACOM. While state governments have a central role in determining these partnerships, the Department of Defense should encourage a rebalance to Asia that reflects the growing economic and cultural ties of the United States with the region.

Estimated cost: low to medium, depending on the cost differential between current large unit deployments in Asia and a greater number of small unit deployments drawing from the total force.

3.8 | Address Logistical Challenges

Underlying the U.S. military's ability to project power is its logistics capacity. Logistics in the Pacific Command area of responsibility are particularly challenging because of the long distances involved and the needs of new operating concepts—such as getting fuel to more distributed and austere locations during times of conflict—and the rising A2/AD threat, which means that logistical operations will no longer be conducted in sanctuary.

In a time of declining budgets, logistical needs may not draw much public attention, but they are no less important. Some of these logistics challenges can be met internally. One near-term need is the continued service of a dedicated T-AOE supply ship, which is scheduled to leave active service for cost savings next year. In the mid to long term, acquiring additional combat logistics force assets and deploying them to the Pacific will also be necessary.

Some logistics challenges can leverage civilian and commercial assets. Civilian contractors have become a permanent part of U.S. force structure, especially for logistics, and they need to be rapidly deployable. In addition, the United States should leverage the immense capabilities of the commercial assets available from allies and partners. These capabilities already exist, operate every day, and could reduce the U.S. military's peacetime footprint. Ensuring this is done correctly will require proper oversight and management controls by the operational command, government contracting organizations, and military staffs.

Further, DOD must reexamine its logistics communication system and identify means to better secure unclassified networks, and where necessary make greater use of classified networks for logistics planning and execution. Finally, and importantly, logistics planning—including analyses for strategic mobility and aerial refueling—will need to account for attrition and interdiction inherent to a combat environment.

Estimated cost: low for leveraging partner and allied commercial assets; medium for maintaining the deployment of a T-AOE ship in the Pacific Command area of responsibility; high for additional combat logistics force assets.

3.9 | Stockpile Critical Precision Munitions

Demand for munitions in the Asia-Pacific is high, given the potential for large-scale and high-intensity conflicts. The ability to "fight tonight" requires that U.S. forces have munitions in theater to meet this demand. U.S. forces do have access to a large number of munitions-storage facilities, from Okinawa to South Korea to Guam. Yet, most of these facilities are nearing their capacity and stockpiles for many precision munitions are still lacking in forward areas. As a result, munitions would have to be moved forward rapidly during a conflict, increasing the risk that delays could affect current plans. Moreover, acquisition of additional munitions is necessary to meet the large number of potential air and surface targets required by a high-intensity conflict.

DOD should sustain its recently increased investments in this area in order to expand stockpiles of high-demand, low-inventory munitions, for example air-to-air munitions such as the AIM-120D

and anti-surface munitions such as the Joint Air-to-Surface Standoff Missile-Extended Range. Where necessary, DOD should clear production bottlenecks. Once acquired, the U.S. military should increase the forward stockpiles of needed munitions—on land or at sea through maritime prepositioning—particularly JDAMs in Korea and long-range guided missiles for Guam and Japan. Estimated cost: medium for creating additional storage facilities at Guam; medium to high for increasing production of certain precision munitions (though much is already in the budget).

3.10. Enhance ISR Coverage in PACOM through Partnership with Allies

All combatant commands increased ISR capabilities. Both operators and planners acknowledge that ISR demand will always outpace available supply. However, ongoing operational requirements in CENTCOM and EUCOM continue to tax an ISR force already in high demand. Increased PRC gray zone challenges, combined with growing ally and partner concern, suggest the need for greater ISR throughout PACOM.

We recommend, consistent with recommendation 2.1, that the United States co-develop ISR platforms and analysis tools with allies. Further, it should develop with allies cooperative and aligned ISR plans to maximize collection effectiveness. Finally, it should conduct combined operations and analysis of ISR missions in the South China Sea and East China Sea with regional treaty allies.

Estimated cost: low.

4 | ACCELERATE DEVELOPMENT OF INNOVATIVE CAPABILITIES AND CONCEPTS

The United States must update existing concepts and capabilities to ensure that the future force is capable of deterring and prevailing in potential conflicts. China's development of anti-access/area-denial capabilities aims to restrict U.S., ally, and partner freedom of maneuver. To overcome this challenge, the United States is developing new concepts of operation and next-generation capabilities. However, the security environment is highly dynamic and will require a culture of adaptability, a willingness to try new approaches and risk failure through experimentation, and the ability to move rapidly from concept to acquisition.

In developing these capabilities, the United States needs to accept some level of uncertainty and hedge by developing capabilities that address a wide range of emerging challenges. Resource constraints will limit the degree to which the Defense Department can plan for all outcomes, so collaboration with international partners and the commercial sector will be vital. In particular, the authors identified capability gaps in two types of areas. First are those capabilities required to offset an emerging risk to U.S. forces, such as the growing ballistic missile risk to U.S. ships and forward bases. Second are those capabilities that the United States could develop to provide an asymmetric counter to potential regional competitors. Both will be needed for the U.S. military to retain a resilient forward presence and the ability to project combat power in the Asia-Pacific, despite competitors' efforts to constrain U.S. leaders by increasing the risk to U.S. forces.

4.1 | Institutionalize a Culture of Experimentation

The operational experience of the U.S. armed forces, their leadership skills, and their spirit of innovation are arguably the greatest U.S. advantages over any potential adversary. Where recent experience is lacking, gaming and other analytic tools, professional military education, and experimentation and exercises can assist in testing alternative concepts and new technologies. Recent efforts to revitalize wargaming are an important step. Effective red teaming is critical to success and findings need to be captured and acted upon.

The Defense Department should launch an annual competition of "blue teams" consisting of nominees drawn from professional military education institutions against a "red team" drawn from within and beyond the U.S. intelligence community. The first such annual competition should focus on overcoming challenges imposed by China's military investments and advances, such as operating in information-denied environments. The secretary of defense could provide citations to the members of the most successful blue team.

In-the-field experimentation is even more vital than gaming. The use of interactive equipment and a dedicated opposing force has revolutionized tactical training in all the services, but the same needs to be done at the operational and strategic levels. The Department of Defense should develop an 18-month roadmap for improving the institutional underpinnings of joint concept development and experimentation, including an experiment and concept fund to resource the most innovative service and combatant commander field experiment, concept development, or gaming ideas.

Estimated cost: medium.

4.2 | Encourage Rapid Platform Evolution

Cutting-edge technologies are emerging faster than current military acquisition cycles can incorporate or counter them. Some observers argue that the future will be “small, smart, and many.” If true, then the customary practice of long-lifespan, relatively static platforms with occasional capability upgrades will not provide the United States the capabilities it will need in the future.

Programs with modular or interchangeable subsystems must be studied and expanded. The insertion of new sensor capabilities on the MQ-9 Reaper, including the GORGON STARE and VADER systems, showcases how relatively basic modular platforms can make possible high-end capabilities. Another example of repurposing existing capabilities is the development of electronic warfare packages that fit within the fuselage of a wing-mounted missile, enabling a local air commander to rapidly reconfigure for electronic warfare capability, even without dedicated electronic warfare airframes. The Defense Department must find ways to incorporate a greater degree of upgradability and even disposability into its operational concepts and acquisition processes. Certain platforms should endure while others should have short experimental lifetimes to best adopt rapidly emerging technology at a lower cost.

Estimated cost: medium to high, depending on the systems adopted.

4.3 | Develop Advanced Long-Range Missiles

The United States retains a substantial advantage in the technological sophistication of its major military platforms, but the missiles they carry often lack the range needed to operate against adversaries with anti-access/area denial capabilities designed to prevent U.S. forces from closing within striking distance. Long range will be important for effective employment of anti-ship, anti-surface, and anti-air missiles, as well as for the survivability of their launch platforms. Such munitions are especially important payloads for new platforms, such as the F-35, the Long Range Strike Bomber, and the Littoral Combat Ship. U.S. missiles need not only have long ranges but also advanced terminal guidance and high-speed maneuverability to defeat potential countermeasures. Although many investments are already underway, the administration and the Congress should provide these advanced long-range missiles with continued budgetary support.

Estimated cost: high, but some already in budget.

4.4 | Fund Innovative Missile Defense Concepts

The United States relies on missile defenses to protect forward bases and forward-deployed forces. With missile ranges increasing and the cost of missile defenses rising more rapidly than the missiles themselves, it is vital that the United States develop cheaper alternatives to offset the growing missile risk.

Three options are particularly promising: railgun, directed-energy, and upgraded conventional powder guns. Railguns have the benefit of high rates of fire and the ability to fire at air, missile, and land targets over great distances. Directed-energy defenses are attractive for their large magazine depth, dependent primarily on energy-storage capacity. Conventional powder guns are already deployed throughout the region in large numbers, so the ability to repurpose them would

likely save money and require less technological risk than using more innovative and untested technologies. Given the importance of missile defenses for forward bases and deployed forces, all three capabilities should be pursued and prioritized.

Estimated cost: medium for research, development, test, and evaluation; high for procurement and fielding.

4.5 | Field Additional Air Combat Systems

The United States has a small number of aging bombers, most of which are unsuited for non-permissive environments. Adversary advances in stealth-detecting radars may also reduce the benefits of current stealth platforms, and increase the cost of future stealth systems. Developing a fleet of next-generation aircraft with the right combination of capabilities—long-range, manned and unmanned operation, and stealthy and non-stealthy characteristics—will be critical to prevailing in a major conflict against a peer competitor.

The Long Range Strike Bomber is one important investment, but there are others. Unmanned systems, both carrier-launched and ground-launched, will be vital for executing distributed operations and reducing vulnerability. Maritime platforms, such as the Unmanned Carrier-Launched Surveillance and Strike system, will require the ability to penetrate through advanced air-defense systems to conduct both surveillance and strike missions at great distances from U.S. carrier strike groups. Many of these technologies will be expensive, but they make use of critical U.S. advantages in stealth technology and integration of unmanned systems into operational units. A more rapid and dynamic ATO process, as recommended in recommendation 3.5, is needed to get maximum effect from these advanced strike and reconnaissance capabilities.

Estimated cost: high, but much already in the budget.

4.6 | Exploit the U.S. Undersea Advantage

Perhaps the foremost U.S. asymmetric advantage is in the undersea domain, where the United States retains a substantial technological lead over potential competitors. Nevertheless, continued investment in undersea capabilities is necessary to prevent competitors from catching up. The United States will also need to rely more on its undersea edge as its dominance erodes in other domains. Developing new undersea platforms, especially unmanned underwater vehicles, will help extend the U.S. advantage.

Increasing the number of U.S. nuclear attack and guided-missile submarines in the Asia-Pacific would also be helpful, but increasing their payload is particularly important. The Virginia Payload Module will replace a badly needed capability to approach covertly and strike large numbers of targets from underwater when the Ohio-class guided-missile submarines retire. The U.S. Navy's current plan is to include Virginia Payload Modules in every other submarine starting in 2019. If this plan holds, the large majority of those boats should be sent to the Pacific, where the demand is highest for undersea payload.

Estimated cost: high.

4.7 | Augment Space, Cyber, and Electronic Warfare Capabilities

The U.S. military remains highly dependent on capabilities in space, cyberspace, and across the electronic spectrum, for command, control, communications, computers, intelligence, surveillance, and reconnaissance. Potential adversaries are aware that weakness in these areas could severely limit the operational effectiveness of U.S. conventional forces in a conflict and will contest these domains in the future.

As a result, the United States should ensure it has robust defenses in these domains, the ability to respond to aggression by an adversary, and alternative mechanisms for providing the needed capability. For space, at a minimum this means hardening terrestrial and satellite-based communication systems against jamming, hosting payloads on foreign satellites, and developing non-space backup mechanisms for capabilities that are currently space-based. For electronic warfare, this means enhancing EW capabilities to ensure U.S. forces can operate in a battlespace saturated with adversary jamming devices and advanced radars. For cyberspace, this means continuing to invest in both offensive and defensive cyber capabilities, particularly combat mission teams, is important.

Estimated cost: high for hardening communication systems; medium to high for increasing electronic warfare investments; medium for shifting toward hosted payloads; medium for bolstering cyber mission forces.

The initiatives outlined above would help to ensure that the United States maintains the ability to protect its interests in the Asia-Pacific while offsetting growing security risks. Safeguarding regional security and prosperity will require that the United States engage states throughout the Asia-Pacific, deter potential adversaries, and reassure allies and partners. As the U.S. Pacific Command looks ahead to 2025, the number and severity of the region's security risks are likely to expand, but the United States has the tools and, with bipartisan cooperation, can have the resources to meet these challenges.





APPENDICES

APPENDIX A:

NATIONAL DEFENSE AUTHORIZATION ACT OF 2015—SECTION 1059

This appendix lists the congressional tasking and the corresponding sections of this report.

2015 NDAA - SECTION 1059

Review Of United States Military Strategy And The Force Posture Of Allies And Partners In The United States Pacific Command Area Of Responsibility

(a) INDEPENDENT REVIEW—

(1) IN GENERAL—The Secretary of Defense shall commission an independent review of the United States Asia-Pacific rebalance, with a focus on issues expected to be critical during the ten-year period beginning on the date of the enactment of this Act, including the national security interests and military strategy of the United States in the Asia-Pacific region.

(2) CONDUCT OF REVIEW—The review conducted pursuant to paragraph (1) shall be conducted by an independent organization that has—

- (A) recognized credentials and expertise in national security and military affairs; and
- (B) access to policy experts throughout the United States and from the Asia-Pacific region.

(3) ELEMENTS—The review conducted pursuant to paragraph (1) shall include the following elements:

- (A) An assessment of the risks to United States national security interests in the United States Pacific Command area of responsibility during the ten-year period beginning on the date of the enactment of this Act as a result of changes in the security environment.
- (B) An assessment of the current and planned United States force posture adjustments and the impact of such adjustments on the strategy to rebalance to the Asia-Pacific region.
- (C) An assessment of the current and planned force posture and adjustments of United States allies and partners in the region and the impact of such adjustments on the strategy to rebalance to the Asia-Pacific region.
- (D) An evaluation of the key capability gaps and shortfalls of the United States and its allies and partners in the Asia-Pacific region, including undersea warfare (including submarines), naval and maritime, ballistic missile defense, cyber, munitions, and intelligence, surveillance, and reconnaissance capabilities.
- (E) An analysis of the willingness and capacity of allies, partners, and regional organizations to contribute to the security and stability of the Asia-Pacific region, including potential required adjustments to United States military strategy based on that analysis.

(F) An appraisal of the Arctic ambitions of actors in the Asia-Pacific region in the context of current and projected capabilities, including an analysis of the adequacy and relevance of the Arctic Roadmap prepared by the Navy.

(G) An evaluation of theater security cooperation efforts of the United States Pacific Command in the context of current and projected threats, and desired capabilities and priorities of the United States and its allies and partners.

(H) The views of noted policy leaders and regional experts, including military commanders, in the Asia-Pacific region.

(b) REPORT—

(1) SUBMISSION TO THE SECRETARY OF DEFENSE—Not later than 180 days after the date of the enactment of this Act, the independent organization that conducted the review pursuant to subsection (a)(1) shall submit to the Secretary of Defense a report containing the findings of the review. The report shall be submitted in classified form, but may contain an unclassified annex.

(2) SUBMISSION TO CONGRESS—Not later than 90 days after the date of receipt of the report required by paragraph (1), the Secretary of Defense shall submit to the congressional defense committees the report, together with any comments on the report that the Secretary considers appropriate.

APPENDIX B: 2012 STUDY RECOMMENDATIONS

RECOMMENDATION 1: Better align engagement strategy under PACOM and across DOD, including improved integration of PACOM with its component commands, between PACOM and Service Force Providers, and among PACOM, Office of the Secretary of Defense (OSD), the Joint Staff, and the interagency process

Identify desired roles, missions, and capabilities for key allies and partners and prioritize these goals in planning for bilateral, trilateral, and multilateral training and exercises. Focus in particular on bridging capabilities and trilateral U.S.-Japan-ROK interoperability with South Korea; jointness, BMD, amphibious, and ASW capabilities with Japan; and maritime domain awareness, counterterrorism, and HA/DR with the Philippines and other partners across the South and Southeast Asia littoral. Broader multilateral exercises and engagement should also be sustained to integrate additional partners and China to the greatest extent possible.

Utilize Darwin, Australia, Tinian, CNMI, and JPARC and capabilities such as JMPRC (“National Training Center in a Box”) to encourage operationally relevant training and exercises with allies and partners.

Protect exercise budgets in the face of future reductions; shaping is not possible if U.S. forces cannot interact more robustly with their counterparts.

Enhance engagement opportunities with ground force counterparts, particularly with the PLA, by designating the USARPAC commander as a four-star component command.

Take advantage of current and planned reductions in Operation Enduring Freedom force deployment levels that make available active duty Army, Army National Guard, and Army Reserve components with significant capability and experience. These units should be made available for use in PACOM engagement activities, including expansion of PAT teams, supplemental forces to engage in partner training and exercises, etc.

Transition U.S. Army I Corps into a PACOM-aligned Joint Task Force, bringing with it corps-level planning capability, access to regionally aligned forces in CONUS for theater rotations of up to one year (primarily in Korea), and some of the experienced forces noted above.

Refine and replenish prepositioned stocks in theater and draw on post-OEF retrograde equipment and supplies to augment availability in PACOM AOR.

RECOMMENDATION 2: Implement the April 27, 2012, U.S.-Japan SCC Agreement, with caveats

Sustain commitments to construction of FRF at Henoko while continuing to examine alternative courses of action in order to mitigate risks. Of the potential alternatives examined in Section 3, utilizing the second runway at Naha airfield was assessed as most promising against this report's evaluation criteria. Other alternatives such as Iejima should also be examined as future possibilities. However, none of these alternatives is any more promising than current plans at Henoko, and abandoning current agreements would be counterproductive geo-strategically and operationally without high promise of success elsewhere. Nevertheless, alternatives should continually be explored in light of executability challenges at Henoko, political risks associated with continued use of MCAS Futenma, and operational risks (dispersal requirements) in contingency scenarios.

Move forward with funding necessary for the development of training ranges at Tinian Island and other CNMI locations. Work with the government of Japan to leverage Japanese funding commitments in order to realize early joint-bilateral training opportunities. Expedite the Environmental Impact Statement (EIS) process by determining that prior Records of Decision are programmatic decisions and by evaluating proposed updates against those records. In many cases, this could lead to a Finding of No Impact and no need for a Supplemental EIS.

Implement the Distributed Laydown Plan but ensure it is incremental, prioritized, and affordable with reversible milestones; require annual reporting on these milestones to Congress.

Prioritize improvements on Guam, focusing on roads and infrastructure improvements such as pipeline protection that would be mission essential even if fewer Marines move to Guam from Okinawa. These improvements will necessarily include some limited MILCON funding outside of the wire of DOD facilities.

RECOMMENDATION 3: Implement U.S.-ROK Strategic Alliance 2015, with caveats

Track progress toward and adjust schedules for OPCON transition and CFC dissolution via demonstrated achievement of scheduled actions and command and control arrangements (including possible mutually agreed to changes in supported-supporting relationships) and major changes in threat and conditions.

Examine the option of replacing current U.S. ground combat units in Korea with rotations of trained and ready mechanized infantry, field artillery and aviation (including previously moved squadrons) brigades (with 8th Army, 2ID, and 210 Artillery Brigade headquarters permanently forward). Review should include the impact on readiness in Korea, personnel turbulence (in Korea and worldwide), the overall cost, U.S.-ROK alliance relations and combat capability, and the overall effect on deterrence against provocations and aggression.

Adjust but continue consolidation under the YRP/LPP agreements; revise the agreements to properly accommodate specific left-behind units, such as the artillery brigade.

RECOMMENDATION 4: Add additional capabilities to the PACOM AOR

Station one or more additional SSNs in Guam to provide a critical advantage in an A2AD environment.

Deploy an additional ARG and enablers (e.g., LCAC) to the Pacific theater to provide necessary lift for the distributed MAGTFs to support the full spectrum of U.S. planning. There is currently insufficient ARG coverage for Marines in the Pacific, particularly when compared with assets available for CENTCOM, and this gap in the “rebalancing” of forces is striking.

Increase movement assets in the Pacific theater, specifically roll-on/roll-off ships and aerial tankers.

Increase critical munitions stockpiles, particularly in South Korea.

Replenish and upgrade prepositioned equipment and supplies, particularly in Korea.

Expand the use and deployment of UDP Marines to develop and refine expeditionary defense tactics, doctrine, and capability in conjunction with JSDF and ROK forces for the First Island Chain and the West Sea Islands and across the region for broader capability.

Deploy THAAD and PAC-3 assets to Guam, Kadena AB, Japan, and possibly Korea.

Increase runway repair capability across PACOM, particularly at Guam and Kadena.

Disperse tanker aircraft rather than expend funds on hardening, especially in Guam; additionally, expand operational dispersal across Southeast Asia.

Increase U.S. Air Force Contingency Response Group (CRG) capability across PACOM and provide additional assets to the CRG at Andersen AFB, Guam.

Construct and upgrade fuel pipeline at Andersen AFB in Guam.

RECOMMENDATION 5: Examine possible force posture and basing efficiencies

Consolidate F-16 squadrons among Misawa, Kunsan, and Eielson bases to create full 24-primary assigned aircraft squadrons. In the case of Misawa, ongoing use of the base by U.S. and JASDF forces and units would keep the base open for future uses and dispersal actions, though government of Japan objections to removing permanently deployed F-16s from Misawa must be considered.

Over the years, forces deployed to Korea have grown apart from the current force structure. As a result, some units assigned to USFK serve less useful purposes. A careful review of USFK deployed forces would yield some small reductions, which could leave the force structure or could be replaced by more useful units, either on a permanent or rotational basis.

APPENDIX C: DEALING WITH A CHANGED FISCAL ENVIRONMENT

The fiscal environment has changed substantially since CSIS's previous report, *U.S. Force Posture Strategy in the Asia Pacific Region: An Independent Assessment*, in 2012. The passage of the Budget Control Act of 2011 (BCA) cut \$487 billion from defense over 10 years. Since then, successive budget crises have made further cuts.

The October 2015 budget deal was an important step forward. It set DOD resources close to the President's Budget level that both the president and, the Congress agreed was needed. Nevertheless, the deal covered only two years (FY 2016 and FY 2017) and sequestration will remain a threat in FY 2018 and beyond.

Long term the budget environment remains uncertain. Continuing growth in entitlements and internal DOD cost growth will further squeeze defense budgets. On the other hand, a political consensus is building that puts a floor under defense spending and opposes further cuts.

Picking a single fiscal level, especially a high level, would simplify the problem of implementing recommendations but, with the great fiscal uncertainty, would not be credible or helpful for decisionmakers if the fiscal future came out differently. Therefore, to acknowledge the high level of fiscal uncertainty, this study proposes three possible fiscal futures for the period through 2025: a level above the FY 2016 President's Budget (PB), a level equal to the PB, and a level reduced from the PB. The study then determines which recommendations should be implemented at the different budget levels.

A Changed Fiscal Environment

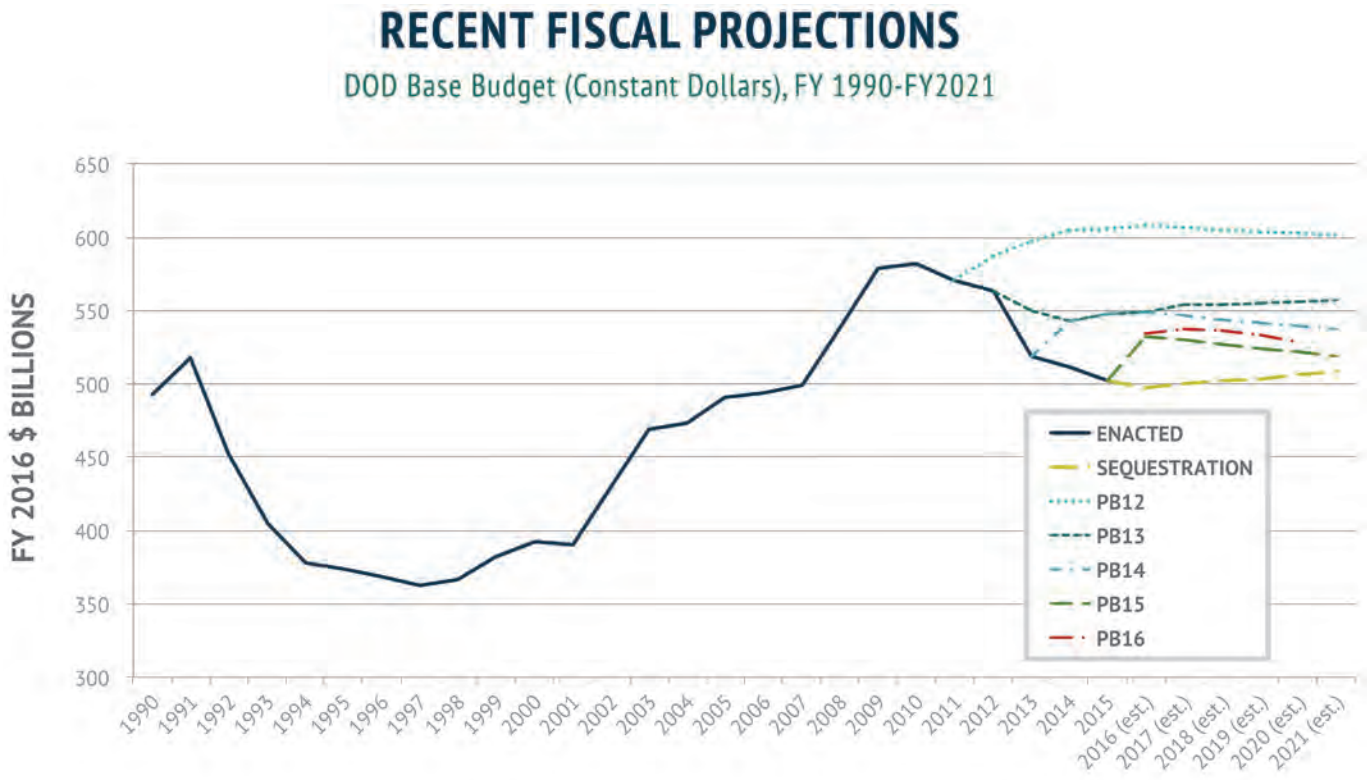
Where We Are Today

Figure 16 shows defense budget plans in FY 2012 (the level Secretary Gates labeled as needed for the strategy), in FY 2016 after the budget agreement, and under sequestration/BCA caps. The large cut required by the Budget Control Act is clear, as is the effect of sequestration if imposed.

Implications for the Asia-Pacific Rebalance

This long-term budget uncertainty creates a difficult environment for the rebalance. In the near term, and possibly for the five-year period, budget caps and internal cost growth are likely to squeeze even current Asia-Pacific activities. (CSIS describes internal cost growth in its 2012 study, *Building the Affordable 2021 Military*: "The aggregate impact of growth (above inflation) in the cost of personnel, health care, operations and maintenance (O&M), and acquisition results in a defense dollar that 'buys' less and less capability.") These budget constraints will require rigorous prioritization of otherwise desirable activities. Additions to programs or launching new initiatives will require finding offsets elsewhere.

FIGURE 15: Recent Fiscal Projections DOD Base Budget (constant dollars, billions), FY 2006–2021



It will also be difficult to move resources from elsewhere in the DOD budget. Budget caps constrain in all activities (modernization, technology development, readiness, and sustaining the AVF). Asking these activities to make cuts to fund rebalance activities may not be possible.

Approaches to an Uncertain Budget Future

This study, therefore, takes a resource-informed approach to strategy. It lays out a strategy and proposed policies but notes the costs of the study's recommendations. A further element is the recognition of different possible fiscal futures.

Making prioritizations and tradeoffs in order to fund higher-priority efforts is difficult because it involves choosing among desirable activities and goals. The fact that one activity is prioritized over another does not mean that the lower-priority one is unimportant, only that choices must be made in a resource-constrained environment.

Different Fiscal Futures

DOD's record in making accurate fiscal predictions is poor. In this, DOD is likely no better or worse than outside experts.

Practitioners and behavioral scientists have shown the reason for this failure. Humans vastly overestimate their ability to control events, to overcome biases, and to think creatively.⁷³⁷ Experts, because of their deep technical knowledge, are particularly susceptible to the illusion that they

can see into the future.⁷³⁸ Richard Danzig, former secretary of the navy, provided the bottom line: “The number and diversity of variables that influence the national security environment confound [long-range] forecasting.”⁷³⁹

Recognizing this unhappy history and difficult environment, this study proposes three possible fiscal futures for the period through 2025: a level above the PB, a level equal to the PB, and a level below the PB. These three fiscal futures are not forecasts but illustrate the range of likely outcomes and thus allow thinking about how DOD might implement the rebalance in different futures.

It is clear that robust funding is needed to implement this study’s proposed strategy. The strategy cannot be implemented at a level reduced from the PB. Too many critical activities would be cut. Even at the President’s Budget level, decisionmakers will need to make some tough tradeoffs.

TABLE 5: DOD Base Discretionary Budget (“051”) in Then-Year Dollars (billions)*

TY\$B	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Above PB	496	529	533	579	592	605	618	634	649	663	678
At PB	496	529	533	556	564	570	581	593	605	617	629
Below PB	496	529	533	541	550	560	572	584	597	610	623

*Includes estimates for the impact of the 2015 budget deal. (Actual amount for FY 2017 depends on how OCO funding evolves and will likely be the equivalent of a higher level.)

Implementation of Recommendations at Different Budget Levels

The recommendations in Section 7 laid out the full set of desirable actions, which collectively have a high additional cost. Here the study suggests which could be implemented at particular budget levels, the highest priorities being implemented even when resources are constrained.

This study did not undertake precise cost estimates for the recommendations but did make rough estimates (high/medium/low, as noted in Section 7) to give a sense of relative impact and to allow prioritization. The illustrative priorities below include only recommendations with medium or high costs. Those with low costs (under \$10 million per year) are assumed to be achievable at any budget level. In making this illustrative prioritization, This appendix seeks to preserve those initiatives with highest payoff for the cost and with potentially transformational capabilities.

A level above the PB. Few experts expect increases above the President’s Budget in the near term (although a few have recommended higher budgets). The last two budget deals have set levels between the PB and sequestration. However, much could happen over a 10-year period. This budget level assumes a return to the FY 2013 planned level of funding, which included the initial cuts of the Budget Control Act but not subsequent cuts. This level would permit substantial program increases compared with current plans and likely allow implementation of all the recommended changes.

Align Asia strategy within the U.S. government and with allies and partners:

- All recommendations in this area are low cost and achievable.

Strengthen ally and partner capability, capacity, resilience, and interoperability:

- Form a joint task force for maritime security;
- Fund maritime security capacity building;
- Develop regional HA/DR expertise.

Sustain and expand U.S. military presence in the Asia-Pacific:

- Continue funding key posture initiatives (Japan, Korea, the Philippines, and Australia);
- Increase naval presence (forward stationing a second carrier);
- Improve undersea capacity (forward stationing additional submarines in Guam and, if possible, in Australia);
- Deploy additional amphibious lift (shift the 10th ARG from San Diego to Guam, construct an 11th ARG);
- Diversify air operating locations;
- Bolster regional missile defenses (link national systems; field additional THAAD batteries; deploy THAAD to Korea; deploy PATRIOT to Guam);
- Address logistical checkpoints (keep a T-AOE in PACOM service);
- Stockpile critical precision munitions (in Guam, South Korea, and Japan).

Accelerate development of innovative capabilities and concepts:

- Institutionalize a culture of experimentation;
- Encourage platform evolution;
- Develop advanced long-range missiles;
- Fund innovative missile defense concepts (railguns, directed energy, and improved conventional powder guns);
- Field additional air combat systems (such as LRS-B and UCLASS);
- Exploit U.S. undersea advantage (develop UUVs and VPM; station submarines with VPM forward);
- Augment space, cyber, and EW capabilities (harden satellites; host payloads on foreign satellites; increase EW capabilities; and invest in offensive and defensive cyber capabilities).

Budget level equal to the PB. The PB for DOD projects programs out five years, to FY 2020, in the FYDP. OMB projects appropriations out a further five years, to FY 2025. The administration has stated that this level is the minimum needed to sustain the current strategy, in PACOM and globally. Senior military commanders have been particularly emphatic on this point. This level allows execution of current plans but would require tradeoffs for new initiatives.

Illustrative recommendations for implementation include:

- Fund maritime security capacity building;
- Develop regional HA/DR expertise;
- Continue funding key posture initiatives;
- Improve undersea capacity;
- Develop advanced long-range missiles;
- Fund innovative missile-defense concepts;
- Augment space, cyber, and EW capabilities;
- Bolster regional missile defenses (link national systems; deploy THAAD to Korea; deploy PATRIOT to Guam).

Illustrative recommendations to consider but with offsets to make them affordable:

- Bolster regional missile defenses (field additional THAAD batteries) by trading off other U.S. Army force structure;
- Diversify air operating locations, but limit near-term construction to bare base facilities; postpone fully developed facilities.

Budget level below the PB. For FY 2016 most experts believe that the outcome will be somewhere between sequestration and the PB, using one of several possible mechanisms.⁷⁴⁰ Extending that outcome to the 10-year period would cut several hundred billion dollars more out of the defense budget, the exact amount depending on the nature of the agreement. For purposes of illustration, this reduced level is half way between the PB and sequestration level. This level would require substantial cuts to existing activities and severely limit new initiatives.

Illustrative recommendations for implementation include:

- Fund maritime security capacity building;
- Develop regional HA/DR expertise;
- Continue funding key posture initiatives;
- Augment space, cyber, and EW capabilities.

Illustrative recommendations to consider but with offsets to make them affordable:

- Develop advanced long-range missiles, but at reduced procurement quantities and with stretched schedules;
- Improve undersea capacity, offsetting with reductions in other undersea programs;
- Bolster regional missile defenses (field additional THAAD batteries) by trading off other U.S. Army force structure;
- Diversify air operating locations, but limit near-term construction to bare base facilities, postpone developed facilities;

- Fund innovative missile defense concepts, by trading off some kinetic missile defense development.

Mechanisms for aligning strategy and resources. In theory, DOD's Planning, Programming, Budgeting and Execution System (PPBES) continuously realigns strategy and resources. In practice, this is difficult to do year-to-year. Instead, the system focuses on rebalancing accounts within the existing strategy in response to changes in resources, the security environment, political direction, and program outcomes. Major realignments are generally done during the Quadrennial Defense Reviews (QDRs)¹ or, less frequently, in response to major changes to the security environment. Such was the Comprehensive Review of 2012, which made major changes to account for passage of the Budget Control Act and its cut of \$487 billion over 10 years.

The current administration can implement many of this study's recommendations as part of the annual rebalancing of DOD resources. Major realignment of strategy and resources will likely be delayed to the 2017 QDR/SDR. This effort will begin when a new administration takes office in January 2017 and will report out by law on March 1, 2018. This QDR/SDR will be an especially good opportunity because of changed statutory language. Previously, the statutory language (10 USC 118) required that the QDR be unconstrained by resources. This made it difficult for DOD to talk candidly about strategy-resource tradeoffs. A change in the FY 2015 authorization bill allows more latitude, directing that the budget and strategy be aligned.

¹ The 2015 National Defense Authorization Act renamed the QDR to the Strategic Defense Review (SDR) and modified the statutory language about what the review had to do.

APPENDIX D: SELECT CSIS STUDY TEAM RECOMMENDATIONS, IN BRIEF

Air Superiority and Global Strike

- Invest in high-capability platforms, including unmanned systems, for the most difficult missions.
- Invest in next-generation optionally manned systems for both air superiority and strike. Successful development and utilization of unmanned platforms will require significant concept development, and openness to non-traditional modes of force employment, both of which have experienced institutional opposition to date.
- Adopt and institutionalize lessons from combat missions in Iraq and Afghanistan to establish procedures for a more dynamic and resilient ATO process in theaters subject to rapid change and enemy countermeasures.
- Investigate developing conformal drop tanks for the F-35. Although technically challenging, this capability would have great value in PACOM given existing U.S. posture, the distances in theater, and the relatively short range of the F-35.

Naval and Maritime Forces

- Amphibious lift should be expanded and deployed forward to meet increased demands for theater-wide engagement and crisis response.
- The USN should, to the greatest degree possible, accelerate the development of UUVs to improve operational efficacy in the littoral areas of the Western Pacific. These vessels can also serve as a powerful monitoring network, akin to a twenty-first-century sound surveillance.
- The USN should also accelerate development of unmanned aerial systems and ensure they complement the F-35 in ways that improve the lethality and capacity of both systems. Payload, range, and counter-A2/AD abilities should be prioritized, though not necessarily in the same platform.
- The navy should examine the steps needed to forward station an additional carrier in the Pacific, including the associated air wing and escort ships.

Ground Forces

- The U.S. Army should use smaller units for the Regionally Aligned Forces concept, to maintain the unit integrity that is highly beneficial to forging lasting relationships between U.S. forces and partner nations. The use of smaller units can help ease the strain of RAF on the total force, particularly by expanding the use of the Reserve Component.

- Currently the National Guard conducts exercises with eight countries in the Asia-Pacific region, out of a total of 70 programs in the State Partnership Program. The National Guard brings “all of government” connections at the state level, and provides excellent insight into civil-military relations. The National Guard should expand the State Partnership Program to increase the number of partnerships in the Asia-Pacific region.
- DOD should pursue development of a training range in the Commonwealth of the Northern Mariana Islands on Pagan to support III MEF requirements for amphibious training and maneuver ashore. As a backup, DOD should begin exploration of training facilities in the Compact States.
- PACOM should periodically use all training areas abroad to which it has access.
- The USA should reassess Pacific Pathways’ costs and benefits, and include a detailed manning and equipping breakdown if the program is continued. In addition, PACOM, the Joint Staff, and the Department should ensure close coordination between the USA and USMC to improve readiness and security cooperation through a joint approach.

Special Operations Forces

- Continue prioritizing SOF missions to accommodate PERSTEMPO constraints.
- Continue efforts to develop solutions—technical or doctrinal—for long-range air and maritime insertion/extraction missions and for fire support in highly contested A2/AD environments.

Missile Defense

- Continue upgrades to THAAD and PATRIOT to meet evolving threats.
- Continue rapid development of efficient and cheap missile defenses across the kill chain, to include directed energy and railguns for fleet and point missile defense, as well as boost phase intercept.
- Deploy THAAD capabilities to South Korea.
- Assess whether increased threats and deployments require procurement of all nine planned THAAD batteries, per the USA requirement, to meet global demands or any additional PATRIOT units.
- More actively address the full IAMD challenge for all U.S. forces in region, not merely ballistic missiles.
- Continue and improve the complexity of regional missile defense exercises, and actively improve interoperability and information sharing between and among allies and partners.

Space

- Create greater resiliency in space-based assets through the hardening of payloads, deployment of jam-resistant communication systems, and diversification of host platforms to include non-military and non-U.S. satellites.

- Fund the development of alternatives to space-based capability, through non-space-based, but complementary, capabilities such as aerial layer mesh networking and advanced inertial PNT for operations in the most stressing A2/AD environments.

Intelligence, Surveillance, and Reconnaissance

- DOD should develop a robust aerial ISR system able to operate in the most denied environments. This system should build off of and advance the existing lines of effort represented in LRS-B and UCLASS.
- DOD should steer investments into autonomous imagery exploitation systems for both aerial and space-based systems to improve the throughput of the PED system and optimize the utilization of increasingly scarce human analysts.
- The USN should develop a PED (processing, exploitation, and dissemination) system with operational analytic centers attached to the fleet patrol wing level, to maximize the capabilities of the Triton. This should be augmented with strategic analytic centers attached to the USN's theater-level component commands.
- The USN and USAF PED systems should be interoperable, support operational and strategic commanders, and be compatible with systems operated by U.S. allies and partners. Joint manning with options for combined manning, where appropriate, should be an objective for Asia-Pacific PED architecture.
- DOD should coordinate plans for ISR missions with allies. It should share analysis work among allies in areas of mutual interest and concern, particularly the South and East China Seas.

Cyber

- Cyber operations should be a component in all wargames conducted by PACOM and its major subordinate commands in order to ensure that commanders have operational fluency with this vital technology.
- The Defense Department should fast-track development of a common operating picture for cyber operations that can be pushed forward to the operational and tactical levels. This information should be integrated into existing ISR frameworks in order to add another level of richness to commanders' understanding of both the physical and virtual battlespace.
- PACOM, in cooperation with CYBERCOM, should hold annual discussions with key regional allies and partners about cyber capabilities. Such discussions should include the ways in which ally and partner authorities may differ from U.S. authorities and the ways in which such differences may be leveraged in a contingency operation.

Electronic Warfare

- The USAF should reemphasize the role of offensive EW in penetrating strike missions, to include ensuring sufficient stockpiling of MALD-J in the region and the prompt integration of these munitions with the F-35.

- CHAMP should be placed on an accelerated development track along with autonomous targeting subsystems for EW munitions to enable highly effective operations to be carried out in denied or degraded communications environments.
- The USN should explore ways of projecting EW effects ashore by integrating the EW munitions described above into VLS systems on surface and subsurface combatants.

Nuclear Forces

- Improve capabilities for detection, monitoring, and surveillance of nuclear weapons acquisition, development, testing, employment, or onward proliferation to expand warning and response times, especially on the Korean Peninsula.
- Ensure that the United States has scalable, proportional nuclear and non-nuclear response options, complemented by robust missile defenses, to deescalate crises and counter nuclear aggression.
- Diversify the means and mechanisms—through policy, posture, and deployments—by which the United States can signal its resolve in the face of nuclear threats.
- Enhance capabilities to interdict proliferation-related activities to include improved low-visibility monitoring from standoff distances and development of disablement or disruption technologies to broaden response options.
- Improve capabilities to locate, secure, disable, or remove nuclear weapons in the face of instability or conflict.

Munitions

- Forward deploy additional munitions to Guam, Japan, and Korea in hardened facilities.
- Continue acquisition of advanced munitions, at the PB 2016 level. Increase procurement of missile defense missiles until success of follow-on technologies is assured. Give PACOM priority on fielding of these new munitions. Resolve production bottlenecks where they constrain production rates.
- Include advanced munitions in the Third Offset strategy.
- Where there are shortages in forward-deployed munitions, plan to globally source munitions during conflicts, taking risks in other theaters, if necessary by relying there on older versions.
- Develop mechanisms for emergency resupply of allies, if such becomes necessary.

Strategic Mobility, Readiness, and Logistics

- Execute currently planned programs—for the KC-46 tanker, for connectors, and for prepositioning—in order to enhance the strategic mobility system.
- Conduct another strategic mobility study when the long-term budget situation becomes clear and the long-term force is set, or if the next strategic review (“QDR 2018”) establishes a substantially different strategy. In future mobility assessments, consider the effect of attacks on bases, ships, and aircraft and the needs of a more distributed wartime basing

posture. There is wide recognition, in OSD, the services, the Joint Staff, and PACOM, that this is needed.

- Make plans for using commercial mobility assets to the maximum extent possible.
- Maintain high readiness in deployed forces even if the readiness of non-deployed forces declines. Develop and maintain capabilities for rapidly deploying and then managing large numbers of operational support contractors.
- Plan to use operational support contractors if there are shortfalls in the U.S. Army's Executive Agency capabilities and allied forces cannot provide the needed support
- Plan also on using local commercial assets to the maximum extent possible, especially for fuel, to support distributed operations during conflicts.
- Maintain the Pacific T-AOE in active status.
- DOD should better secure logistics communications networks, including those of private-sector partners. It should assess overall vulnerabilities to the system, and where necessary, shift logistics information systems to classified networks.
- Stockpile HA/DR supplies, as feasible. Countries within the region—with U.S. assistance through DOD's Overseas Humanitarian, Disaster, and Civic Aid (OHDACA) or other authorities—could establish additional pre-positioned stockpiles of critical supplies and broaden multinational exercises to include interagency and nongovernmental partners.
- Exercise the HA/DR mission with regional partners and allies.
- Deepen whole-of-government HA/DR expertise across the Asia-Pacific region.

Theater Security Cooperation

- In order to focus investments, assist regional allies and partners with the development of desired end-states for their military capabilities.
- Ensure objectives in the Theater Security Cooperation Plan are appropriate for a combatant command, rather than government-wide objectives, and are within the area of responsibility of the military services or defense ministries in the partner nation. Further, consider the partner-nation capacity to adopt new initiatives, from personnel, materiel, and financial perspectives, and prioritize objectives accordingly.
- Invest in ally and partner capabilities in the priority areas of HA/DR, information and intelligence sharing, maritime security, undersea warfare, missile defense, and cyber security.
- Prioritize and synchronize PACOM and service component security cooperation priorities and lines of effort.

Policy Recommendations for the Arctic

- Reassess the Navy's Arctic Roadmap
- Specify PACOM's role in the Arctic

APPENDIX E:

ABOUT THE AUTHORS

STUDY DIRECTORS

Michael J. Green is senior vice president for Asia and Japan Chair at CSIS and Chair in Modern and Contemporary Japanese Politics and Foreign Policy at the Edmund A. Walsh School of Foreign Service at Georgetown University. He served on the staff of the National Security Council (NSC) from 2001 through 2005, first as director for Asian affairs, with responsibility for Japan, Korea, Australia, and New Zealand, and then as special assistant to the president for national security affairs and senior director for Asia, with responsibility for East Asia and South Asia. Before joining the NSC staff, he was senior fellow for East Asian security at the Council on Foreign Relations, director of the Edwin O. Reischauer Center and the Foreign Policy Institute, and an assistant professor at the Paul H. Nitze School of Advanced International Studies at Johns Hopkins University, research staff member at the Institute for Defense Analyses, and senior adviser on Asia in the Office of the Secretary of Defense. He also worked in Japan on the staff of a member of the National Diet. Dr. Green is also currently a nonresident fellow at the Lowy Institute in Sydney, Australia, and a distinguished scholar at the Rebuild Japan Initiative Foundation in Tokyo. He is a member of the Council on Foreign Relations, the Aspen Strategy Group, the Australian American Leadership Dialogue, the advisory board of the Center for a New American Security, and the editorial boards of the *Washington Quarterly* and the *Journal of Unification Studies* in Korea. He is also an associate of the U.S. Intelligence Community. Dr. Green has authored numerous books and articles on East Asian security. His current research includes a book project on the history of U.S. strategy in Asia; a survey of elite views of norms, power, and regional institutions in Asia; and a monograph on Japanese strategic culture. He received his master's and doctoral degrees from SAIS and did additional graduate and postgraduate research at Tokyo University and the Massachusetts Institute of Technology. He received his bachelor's degree in history from Kenyon College with highest honors. He holds a black belt in Iaido (sword) and has won international prizes on the great highland bagpipe.

Kathleen Hicks is senior vice president, Henry A. Kissinger Chair, and director of the International Security Program at CSIS. She is a frequent writer and lecturer on U.S. foreign and security policy; defense strategy, forces, and budget; and strategic futures. From 2009 to 2013, Dr. Hicks served as a senior civilian official in the Department of Defense. Confirmed in 2012 as principal deputy under secretary of defense for policy, she was responsible for advising the secretary of defense on global and regional defense policy and strategy pertaining to such areas as the Asia-Pacific and Persian Gulf regions, Syria, and Europe. She also served as deputy under secretary of defense for strategy, plans, and forces, leading the development of the 2012 Defense Strategic Guidance and the 2010 Quadrennial Defense Review and crafting guidance for future force capabilities, overseas military posture, and contingency and theater campaign plans. From 2006 to early 2009, Dr. Hicks

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Mark Cancian (Colonel, USMCR, ret.) is a senior adviser with the CSIS International Security Program. He joined CSIS in April 2015 from the Office of Management and Budget, where he spent more than seven years as chief of the Force Structure and Investment Division, working on issues such as DOD budget strategy, war funding, and procurement programs, as well as nuclear weapons development and nonproliferation activities in the Department of Energy. Previously, he worked on force structure and acquisition issues in the Office of the Secretary of Defense and ran research and executive programs at Harvard University's Kennedy School of Government. In the military, Colonel Cancian spent over three decades in the U.S. Marine Corps, active and reserve, serving as an infantry, artillery, and civil affairs officer and on overseas tours in Vietnam, Desert Storm, and Iraq (twice). Since 2000, he has been an adjunct faculty member at the Johns Hopkins School of Advanced International Studies, where he teaches a course on the connection between policy and analysis. A prolific author, he has published over 40 articles on military operations, acquisition, budgets, and strategy and received numerous writing awards. He graduated with high honors (magna cum laude) from Harvard College and with highest honors (Baker scholar) from Harvard Business School.

TEAM LEADS

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John Schaus is a fellow in the International Security Program at CSIS, where he focuses on defense industry and Asia security challenges. His research areas include Asia-Pacific security issues and U.S. defense policy and industry, and he presents CSIS's flagship presentation on future trends, "Seven Revolutions: Scanning the Horizon Out to the Year 2035 and Beyond." Prior to rejoining CSIS in July 2014, he worked in the Office of Asian and Pacific Security Affairs (APSA) within the Office of the Secretary of Defense. His responsibilities there included day-to-day management of the U.S.-China military relationship; as special assistant to the assistant secretary of APSA, he coordinated work product and policy priorities for an office of 100, crossing two geographic COCOMs and including five U.S. allies. His most recent previous position was as regional policy adviser to the assistant secretary for APSA, where he oversaw Defense Department participation and represented the department in Asian multilateral defense organizations, as well as ensuring actions, budget, messaging, and planning aligned with broader U.S. efforts, in particular with the rebalance to the Asia Pacific. Prior to working in the Pentagon, Mr. Schaus served as executive officer to the president and CEO of CSIS for five years. He received a B.A. from St. John's University in Minnesota, and an M.P.P. from the University of Minnesota's Hubert H. Humphrey School of Public Affairs.

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Melissa Dalton is a fellow and chief of staff of the CSIS International Security Program. Her research focuses on security cooperation, U.S. defense policy in the Middle East, and defense strategy and policy. As chief of staff, she advises the director of ISP on a broad range of strategic and management issues. She joined CSIS in September 2014 as a visiting fellow and as a 2014–2015 Council on Foreign Relations International Affairs Fellow. Prior to CSIS, she served in a number of positions at the U.S. Department of Defense, in the Office of the Under Secretary of Defense for Policy from 2007 to 2014, most recently as a senior adviser for force planning. Previously, she served as special assistant to the under secretary of defense for policy, as policy adviser to the

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APPENDIX F: ACRONYMS

A2/AD	Anti-access/area denial
AB	Air base
ADF	Australian Defence Force
ADIZ	Air Defense Identification Zone
ADMM	ASEAN Defense Ministers' Meeting
ADMM-Plus	ASEAN Defense Ministers' Meeting Plus
AEW&C	Airborne early warning and control
AFB	Air Force Base
AFP	Armed Forces of the Philippines
AFRICOM	Africa Command
AFSOC	Air Force Special Operations Command
AIIB	Asian Infrastructure Investment Bank
ANSF	Afghan National Security Forces
AOR	Area of Responsibility
ARF	ASEAN Regional Forum
ARG	Amphibious Ready Group
ASAT	Anti-satellite
ASB	Air Sea Battle
ASBM	Anti-ship ballistic missile
ASCM	Anti-ship cruise missile
ASEAN	Association of Southeast Asian Nations
ASG	Abu Sayyaf Group
ASW	Antisubmarine warfare
ATO	Air Tasking Order
AVF	All-Volunteer Force
BCT	Brigade Combat Team
BECA	Basic Exchange and Cooperation Agreement

BIFF	Bangsamoro Islamic Freedom Fighters
BJP	Bharatiya Janata Party
BMD	Ballistic missile defense
BRP	Philippine Navy ship
C2	Command and control
C2BMC	Command, control, battle management, and communications
C4	Command, control, communications, and computers
C4ISR	Command, control, communications, computers, intelligence, surveillance, and reconnaissance
CAP	Combat Air Patrol
CARAT	Cooperation Afloat and Readiness and Training
CCP	Chinese Communist Party
CENTCOM	Central Command
CFC	Combined Forces Command
CISMOA	Communication Interoperability and Security Memorandum of Agreement
COCOM	Combatant Command
CONOP	Concept of operation
CONUS	Continental United States
CSG	Carrier strike group
CSIS	Center for Strategic and International Studies
CSIST	Chungshan Institute of Science and Technology
CYBERCOM	Cyber Command
DCS	Direct commercial sales
DMZ	Demilitarized Zone
DOD	Department of Defense
DOTMLPF	Doctrine, organization, training, materiel, leadership and education, personnel, and facilities
DPP	Democratic Progressive Party
DPRK	Democratic People's Republic of Korea
DSP	Defense Support Program
DTTI	Defense Technology and Trade Initiative
E-IMET	Expanded-International Military Education and Training

EAMF	Expanded ASEAN Maritime Forum
EAS	East Asia Summit
ECSPI	East China Sea Peace Initiative
EDCA	Enhanced Defense Cooperation Agreement
ELINT	Electronic intelligence
EPAA	European Phased Adaptive Approach
EUCOM	European Command
EW	Electronic warfare
EWG	Expert working group
EWR	Early warning radar
FARP	Forward arming and refueling points
FMF	Foreign Military Financing
FMS	Foreign Military Sales
FON	Freedom of navigation
FRF	Futenma Replacement Facility
FTA	Free trade agreement
FY	Fiscal Year
FYDP	Future Years Defense Program
GCC	Gulf Cooperation Council
GPD	Gross domestic product
GPS	Global positioning system
GSSAP	Geosynchronous Space Situational Awareness Program
HA/DR	Humanitarian assistance and disaster relief
HDLD	High-demand, low-density
HF	High-frequency
HMAS	Her Majesty's Australian Ship
HQ	Headquarters
IAMD	Integrated air and missile defense
IBCS	Integrated Air and Missile Defense Battle Command System
ID	Infantry Division
IDS	Indigenous Defense Submarine
IMET	International Military Education and Training

INS	Indian Navy ship
IOC	Initial operating capability
IRBM	Intermediate-range ballistic missile
ISIL	Islamic State of Iraq and the Levant
ISR	Intelligence, surveillance, and reconnaissance
JASDF	Air Self-Defense Force
JB	Joint base
JFC	Joint Force Commander
JFLCC	Joint Force Land Component Command
JGSDf	Ground Self-Defense Force
JI	Jemaah Islamiyah
JLENS	Joint Land Attack Cruise Missile Elevated Netted Sensor System
JMSDF	Maritime Self-Defense Force
JSDF	Japan Self-Defense Forces
JSOTF-P	Joint Special Operations Task Force-Philippines
JTAC	Joint Terminal Attack Controller
KAMD	Korean Air and Missile Defense
KJIX	ROK command and control system
LACM	Land-attack cruise missile
LADS	Laser Airborne Depth Sounder
LCS	Littoral Combat Ship
LPD	Landing platform dock
LPP	Land Partnership Plan
LRASM	Long Range Anti-Ship Missile
LRDR	Long Range Discrimination Radar
LRPA	Long-range patrol aircraft
LRS-B	Long Range Strike Bomber
LSA	Logistics Sharing Agreement
MAJCOM	Major command
MARFOR-K	U.S. Marine Forces—Korea
MCAS	Marine Corps Air Station
MCM	Mine counter-measures

MCO	Major combat operations
MDA	Missile Defense Agency
MEF	Marine Expeditionary Force
MERS	Middle East respiratory syndrome
MEU	Marine Expeditionary Unit
MND	Ministry of National Defense
MNS	Mission Need Statement
MOB	Main Operating Base
MOU	Memorandum of understanding
MRBM	Medium-range ballistic missile
MRO	Massive rescue operation
MSE	Missile Segment Enhancement
MTDP	Mid-Term Defense Program
NAS	Naval Air Station
NATO	North Atlantic Treaty Organization
NCO	Non-commissioned officer
NCWC	National Coastal Watch Center
NDPG	National Defense Program Guidelines
NEO	Noncombatant evacuation operation
NGO	Nongovernmental organization
NORTHCOM	Northern Command
NSC	National Security Council
NSS	National Security Strategy
OCO	Overseas contingency operation
OPCON	Operational control
OPLAN	Operation plan
ORP	Ohio-class Replacement Program
PAC	PATRIOT Advanced Capability
PACAF	Pacific Air Forces
PACOM	Pacific Command
PED	Processing, exploitation, and dissemination
PGM	Precision-guided munition
PLA	People's Liberation Army

PLAAF	People's Liberation Army Air Force
PLAN	People's Liberation Army Navy
POL	Petroleum, Oil and Lubricants
PRC	People's Republic of China
PSI	Proliferation Security Initiative
RAAF	Royal Australian Air Force
RAFs	Regionally Aligned Forces
RAN	Royal Australian Navy
ReCAAP	Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia
RIMPAC	Rim of the Pacific
RMAF	Royal Malaysian Air Force
ROK	Republic of Korea
RO/RO	Roll On/Roll Off
SAF	Singapore Armed Forces
SAM	Surface-to-air missile
SAR	Search and rescue
SBIRS	Space Based Infrared System
SBSS	Space Based Space Surveillance
SCC	Security Consultative Committee
SCM	Security Consultative Meeting
SEAD	Suppression of enemy air defenses
SIGINT	Signals intelligence
SLOC	Sea lines of communication
SM	Standard Missile
SOCOM	Special Operations Command
SRBM	Short-range ballistic missile
SRP	Surveillance Radar Program
SSA	Space situational awareness
SSBN	Nuclear-powered ballistic missile submarine
SSGN	Nuclear-powered guided missile submarine
SSK	Diesel-electric attack submarine
STRATCOM	Strategic Command

STSS	Space Tracking and Surveillance System
THAAD	Terminal High Altitude Area Defense
THAAD-ER	Extended-range THAAD interceptor
TNI	Indonesian National Armed Forces
TRANSCOM	Transportation Command
TSP	Theater Security Package
U.S.	United States
UAS	Unmanned aerial systems
UCLASS	Unmanned Carrier-Launched Airborne Surveillance and Strike
UK	United Kingdom
UN	United Nations
UNC	United Nations Command
UNCLOS	United Nations Convention on the Law of the Sea
UNSC	United Nations Security Council
UPA	United Progressive Alliance
USA	U.S. Army
USAF	U.S. Air Force
USAG	U.S. Army Garrison
USAID	U.S. Agency for International Development
USARAK	U.S. Army Alaska
USARJ	U.S. Army Japan
USARPAC	U.S. Army Pacific
USCG	U.S. Coast Guard
USD	U.S. dollars
USFJ	U.S. Forces Japan
USFK	U.S. Forces Korea
USMC	U.S. Marine Corps
USN	U.S. Navy
UUV	Unmanned Undersea Vehicle
VPM	Virginia Payload Module
WMD	Weapons of mass destruction
YRP	Yongsan Relocation Plan

APPENDIX G:

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