This brief volume is an important resource for anyone who is interested in gaining an informed understanding of China, a major strategic competitor of the United States in the economic, technological, diplomatic, and security realms. These challenges are increasing in scale and complexity and show no signs of abatement. The United States will be challenged to keep pace with such a formidable competitor and cannot hope to simply outspend China, as it was able to do during the Cold War. To protect its interests and preserve its global influence, the United States will require effective strategies, robust alliances, innovative operational concepts, and advanced military capabilities.

For more than two decades, the RAND Corporation has conducted extensive research about China to inform the deliberations and decisionmaking of U.S. policymakers. Major streams of research have focused specifically on developments in China—its domestic and economic trends, its military and technological capabilities (including nuclear, space, and cyber capabilities), its relationships with other countries, and its grand strategy. Other streams have focused on the U.S.-China strategic competition and on U.S. strategies and capabilities for countering China. This volume succinctly surveys the best examples from this ongoing body of research that are cleared for public release and synthesizes their collective results.

Readers of this volume should gain a rich understanding of the issues involved in the strategic competition with China and an appreciation for the dynamic nature of the relationship, which, though defined by long-term trends, could also include surprisingly rapid and unexpected developments.

Valuable as past studies have been, researchers and analysts must continue to update and deepen our understanding of China. This volume should also help to identify opportunities for additional analyses to fill in knowledge gaps, address emerging questions, or extend the scope of past research. We welcome your suggestions.

* * *

This volume is one of a series initiated by RAND Arroyo Center, the Army’s federally funded research and development center for studies and analysis. Inaugural titles include Security Cooperation; Counterinsurgency, Stability Operations, Support to Foreign Internal Defense, Nation-Building, and Special Operations; China; and Information Operations, Information Warfare, and Influence. Each succinctly synthesizes decades of RAND research and analysis on topics that represent perennial and evolving challenges to our nation’s security.

RAND conducted each of the analyses at the request of a senior leader, uniformed or civilian, who faced a major decision and required high-quality, objective research to help inform it. As a result, each analysis was designed to be not only rigorous and reliable, but also responsive, relevant, and immediately useful.

These studies also display the variety of analytic capabilities, methods, and tools that RAND has applied—and sometimes originated or extended—to address our national security challenges. They illustrate the power of applied transdisciplinary research to address complex policy issues through engagement with stakeholders and continual adaptation to exploit improved data sources and advanced analytic methods. The studies highlighted and synthesized here were sponsored by the U.S. Army, the U.S. Air Force, and the Office of the Secretary of Defense and conducted in three federally funded research and development centers managed by RAND: RAND Arroyo Center, Project AIR FORCE, and the National Defense Research Institute.

Though intended to be timely, these analyses have retained their value over time. Together they provide a coherent accumulation of innovation, knowledge, and insights, and they demonstrate the value of sustained, strategic investments in defense analysis.

In short, they fulfill RAND’s mission to improve policy and decisionmaking through research and analysis and exemplify its core values of quality and objectivity.

Sally Sleeper
Vice President, Army Research Division
Director, RAND Arroyo Center
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Fueled by decades of extraordinary economic growth, China has transformed itself into a major power on the world stage. Along with its growing economic power, China has been expanding its diplomatic influence, increasing its standing as a scientific and technological power, and strengthening its military capabilities by modernizing and reorganizing the People’s Liberation Army (PLA). Chinese leader Xi Jinping has announced ambitious plans to achieve the “Chinese dream of national rejuvenation” and to transform the PLA into a “world class military” by the middle of the 21st century. Xi’s military reorganization efforts are building a PLA more capable of conducting regional combat operations in the near term. In addition, China’s establishment of its first overseas military base in Djibouti and development of power projection capabilities indicate its determination to protect global interests in the longer term. China’s more assertive handling of its maritime disputes, especially its island-building and militarization in the South China Sea, has increased tensions with its neighbors and with the United States. Beijing is not only acting more assertively in the Indo-Pacific region but also pursuing increasingly global interests and objectives, as reflected by its expansive Belt and Road Initiative.

The purpose of this short paper is to summarize existing RAND research on some of the key security issues China and Indo-Pacific states might face as China focuses on great-power competition: As the U.S.-China strategic competition increases, what do we know about China and its grand strategy? What are the implications of domestic developments in China, and of China’s approach to engagement and competition with other countries? What U.S. strategies and capabilities would help position the United States for success in a long-term strategic competition with China?

The RAND Corporation has studied China and security issues in the Indo-Pacific region extensively over the past two decades. By pulling together RAND’s unclassified China and Indo-Pacific security research in one collection and highlighting what we have learned, this volume seeks to introduce readers to studies that address these questions. This brief introduction discusses the main findings from RAND’s unclassified research in six main areas. The first section addresses the literature on U.S.-China strategic competition. The second section discusses RAND work on China’s grand strategy. The third section focuses on U.S. strategy and capabilities for countering China. The fourth covers research on Chinese engagement and competition with other countries. The fifth distills the findings from research on Chinese domestic trends. The sixth section addresses nuclear, space, and cyber issues. The conclusion discusses what we know and what we still need to learn.

**U.S.-China Strategic Competition**

Along with its more assertive security policy and ambitious military modernization, Chinese political influence operations, cyber-enabled economic espionage, and trade practices have contributed to growing friction and competition in the U.S.-China relationship. The most recent U.S. National Security Strategy and U.S. National Defense Strategy documents focus on China as a strategic competitor, while China’s most recent defense white paper charges that the United States is intensifying major power competition and undermining regional and global stability. As the U.S.-China relationship has become characterized by friction over economic policy, security issues, and other challenges in recent years, one thread of RAND research has focused on understanding the dynamics of the emerging U.S.-China strategic competition. A 2018 RAND report, titled *Understanding the Emerging Era of International Competition: Theoretical and Historical Perspectives*, defines strategic competition as follows: “Competition in the international realm involves the attempt to gain advantage, often relative to others believed to pose a challenge or threat, through the self-interested pursuit of contested goods such as power, security, wealth, influence, and status.” According to the report, global patterns of competition are likely to be complex and diverse, with distinct types of competition prevailing in different issue areas. The crux of the competition will be the
relationship between the United States, the architect of the post–World War II rules-based order, and China, the leading revisionist peer competitor. The report argues that strategic competition is likely to be most intense and persistent in nonmilitary areas of national advantage. Two particular flashpoints for the emerging competition lie in regional territorial and influence claims and in the growing tendency of rising and revisionist states to seek to extend their reach and control beyond their borders. In the case of China, this could mean both economic competition and tension over Chinese territorial and sovereignty claims in the region and control over large swaths of peripheral maritime territory. The emerging era is likely to involve a drawn-out combination of contestation, competition, and cooperation; a singular focus on winning or victory is likely to be the wrong intellectual model. The challenges posed by China’s growing power and influence over the long term are a unique and very difficult problem for U.S. policymakers and planners.

There is also a military dimension to strategic competition. Several RAND studies have focused specifically on this aspect of competition, tracking and comparing U.S. and Chinese military capabilities. The United States retains an advantage in this component of the strategic competition, but its edge is eroding in some key areas along with the modernization of Chinese military power. A 2015 RAND report, *The U.S.-China Military Scorecard: Force, Geography, and the Evolving Balance of Power, 1996–2017*, presented ten scorecards that assess military capabilities as they have evolved over four snapshot years: 1996, 2003, 2010, and 2017. The results of the report show that China is not close to catching up to the United States in terms of aggregate capabilities, but also that it does not need to catch up to challenge the United States along its maritime periphery. Despite U.S. military improvements, China has made relative gains in most operational areas, in some cases with startling speed. However, trends vary by mission area, and even in the context of the most difficult scenarios, U.S. forces retain some important advantages across scenarios, suggesting they retain some flexibility and adaptability in operational concept and force projects. In general, distance and geography work against the United States and largely counterbalance U.S. military strengths, especially in scenarios around China’s immediate periphery. China’s ability to project power to more distant locations remains relatively weak, and the United States continues to hold more decisive advantage in Asian scenarios at a distance from China’s coast. China’s ability to project power is improving, however, and the relative balance in areas more distant from China is also shifting.

**China’s Grand Strategy**

China’s grand strategy has evolved over time as its interests and influence have become increasingly global. Under Xi, China is pursuing “the great rejuvenation of the Chinese nation,” strengthening its position in the Indo-Pacific as it implements a more assertive policy direction regionally, and expanding its influence worldwide in pursuit of its expanding global economic and security interests. Along these lines, another major thread of RAND research has focused on China’s strategy for pursuing its regional and global interests. A 2000 RAND report, *Interpreting China’s Grand Strategy: Past, Present, and Future*, found that China’s continuing rapid economic growth and expanding involvement in global affairs would have major implications for the power structure of the international system. The report concluded that Chinese history, the behavior of earlier rising powers, and the basic structure and logic of the international system all predict that China will become more assertive internationally as it becomes stronger. China’s stepped-up international engagement was the subject of a 2009 RAND report, *China’s International Behavior: Activism, Opportunism, and Diversification*, which highlighted ways in which China is becoming active in regions and on issues that were once only peripheral to its interests. The report found that China’s international behavior is not aimed at overturning the fundamental structure of the international system, but it is clearly altering the dynamics of that order through its more assertive diplomacy, participation in existing international organizations and formation of new ones, and efforts to shape rules, norms, and institutions to advance its interests.

Under Xi, China has pursued the goals of “national rejuvenation” and the “China Dream” and adopted a more assertive approach to pursuing its interests regionally and globally. A 2016 RAND report, *The PLA and China’s Rejuvenation: National Security and Military Strategies, Deterrence Concepts and Combat*
Capabilities, found that as a part of the PLA reorganization begun by Xi in late 2015, China is building a military force more capable of conducting joint combat operations in a regional contingency. The PLA previously could not be relied on to defend China's regional interests but now is increasingly capable of doing so, with significant implications for U.S. forces that might be ordered to respond to such contingencies. The report also found that China's expanding interests increasingly require a capacity to provide security for investments and business ventures around the world. China's engagement with the developing world and Xi's Belt and Road Initiative are also important components of China's overall strategy for increasing its regional and global influence. According to a 2018 RAND report, At the Dawn of Belt and Road: China in the Developing World, China's pursuit of these initiatives offers it opportunities for economic growth and global influence but also comes with new challenges for Beijing, and appears to be encountering setbacks as some countries question the terms of Chinese investment or the risks of excessive debts to Beijing. China's strategy now appears to focus on establishing its position as the most powerful and influential country in the region and, ultimately, as a global superpower, but the United States and other countries are pushing back against Chinese activities that they see as aimed at undermining their influence and challenging their diplomatic, economic, and security interests.

U.S. Strategy and Capabilities for Countering China

As China has increased its military capabilities and pursued a more assertive foreign and security policy regionally and beyond, the United States has shifted its focus to strategic competition and developing strategy and capabilities for responding to China. As this debate has emerged and U.S. policy has emphasized competition, RAND research has also focused on U.S. strategy and capabilities for countering China. A 2014 RAND report, The U.S. Army in Asia, 2030–2040, found that U.S. military strategy will need to be flexible and resilient given China's increased capabilities, which will place significant demands on the U.S. Army. Although armed conflict between the United States and China is not likely, the possibility requires effective deterrent measures, according to a 2017 RAND report, Conflict with China Revisited: Prospects, Consequences, and Strategies for Deterrence. Potential flashpoints include the Taiwan Strait, East and South China Seas, and the Korean Peninsula. However, the United States faces serious challenges as it seeks to develop and resource a strategy for countering China and meet all of its other national defense requirements. A 2018 RAND report, America's Strategy-Resource Mismatch: Addressing the Gaps Between U.S. National Strategy and Military Capacity, highlights technological, doctrinal, and budgetary gaps between the stated U.S. strategic and defense policies and the resources and capabilities that would be required to implement those policies. These policy-resource gaps present challenges in terms of deterring or, if necessary, defeating aggression against U.S. interests by different adversaries in multiple parts of the world, including such scenarios as possible Chinese use of force against Taiwan.

In terms of capabilities, a 2017 RAND report, What Role Can Land-Based, Multi-Domain Anti-Access/Area Denial Forces Play in Deterring or Defeating Aggression? examines the role that land-based capabilities can play in deterring or defeating aggression, primarily by China. The report found that anti-access/area denial capabilities would allow allied forces to contest maritime areas without exposing U.S. forces to easy attack. Along these lines, U.S. allies and partners could field a mix of anti-ship, anti-aircraft, and surface-to-surface missiles. In addition, the U.S. joint force could support U.S. allies.

In all, RAND research highlights the challenges involved in countering China as it becomes more powerful, and in deterring Chinese aggression against its neighbors. RAND's work in this area indicates that the United States will need to continue working to develop new operational concepts and capabilities and work more closely with its allies and partners to help them strengthen their own capabilities. Additionally, because great-power competition is likely to be played out primarily below the threshold of armed conflict, the United States must be prepared to respond to efforts that seek strategic advantage through coercive actions in this gray zone. A 2019 RAND report, Gaining Competitive Advantage in the Gray Zone: Response Options for Coercive Aggression Below
the Threshold of Major War, highlights China's unprecedented expansion of artificial islands, use of law enforcement and maritime militia vessels in an unprofessional and escalatory manner, and growing employment of economic coercion and political subversion. The report found that, in response to these actions (and Russian gray zone activities), the United States should seek to shape a context supportive of U.S. and partner objectives over the long term; deter a handful of very extreme forms of gray zone aggression; dissuade the day-to-day use of more elaborate gray zone techniques; and sustain resilience in the lower-level, persistent competition areas.

Chinese Engagement and Competition with Others

In the Indo-Pacific region, China's economic, military, and diplomatic power has been on the rise, and many observers worry that it is undermining U.S. influence, perhaps with the aim of establishing a China-dominated regional order. Chinese engagement and competition with other countries have thus been the subject of a considerable amount of RAND research over the past two decades. This research has assessed the implications of Chinese engagement close to home and further afield. To explore this issue in the Indo-Pacific region, the authors of a 2008 RAND report, Pacific Currents: The Responses of U.S. Allies and Security Partners in East Asia to China's Rise, examined the perceptions and responses of U.S. allies and partners, including Australia, Japan, the Philippines, Singapore, South Korea, and Thailand. The report found that the countries view China primarily as a source of economic opportunity, although they have concerns about China's regional goals and do not want to allow China to replace the United States as the dominant power. U.S. allies and partners find U.S. security commitments reassuring, and they want U.S. involvement in the region to continue for the general reassurance its long-standing power and influence provide and to check Chinese power and aspirations that in several cases run contrary to allied and partner interests.

RAND research has also analyzed growing Chinese engagement and competition in more distant regions, including South and Central Asia, the Middle East, and Africa. A 2015 RAND report, China's Strategy Toward South and Central Asia: An Empty Fortress, found that China's engagement in the region is driven by a combination of domestic and international security concerns, economic interests, and access to energy resources. The report found that China's promotion of the Shanghai Cooperation Organization (SCO) and its involvement in Afghanistan and other countries in the region can best be understood in the context of these interests. As for the Middle East, a 2016 RAND report, China in the Middle East: The Wary Dragon, examined China's regional interests and activities, found that Beijing is generally wary in its approach to the region, endeavoring to protect its expanding interests while avoiding taking sides in conflicts and controversies. Finally, according to a 2015 report, China's Expanding African Relations: Implications for U.S. National Security, Beijing's engagement with Africa has increased dramatically in recent years as it steps up its pursuit of Chinese political, economic and security interests, creating challenges and potentially opportunities for the United States.

Chinese Domestic Trends: Economy, Industry, and Military

Even as China increases its power and influence abroad, however, it is important to examine domestic trends, including economic, industrial, and military developments. Indeed, in addition to looking at competition with the United States and strategies for external engagement, RAND work has explored domestic trends in China and their implications for Chinese foreign and security policy. RAND research has focused on Chinese economic and industrial developments that support China's growing military power. A 2005 RAND report, Modernizing China's Military: Opportunities and Constraints, assessed the resources that China is likely to have available to spend on its military. The report found that, although economic growth in China is destined to slow, it will be sufficient for China to continue increasing its defense spending. Another 2005 report, A New Direction for China's Defense Industry, assessed changes in China's defense-industrial complex, which was once rife with weaknesses and limitations. The report highlighted gradual improvements in and the future potential
of China’s defense-industrial complex. It found that China’s defense sectors are designing and producing a wide variety of increasingly advanced weapons.

RAND research has also tracked developments in Chinese military capabilities and operational concepts. A 2016 RAND report, *China’s Incomplete Military Transformation: Assessing the Weaknesses of the People’s Liberation Army (PLA)*, found that the PLA’s capabilities aimed at deterring or, if necessary, countering U.S. military intervention have improved markedly since the 1990s. Nonetheless, the report found that Chinese strategists remain concerned about perceived gaps between current PLA capabilities and the demands of winning a local war under informatized conditions and successfully executing the PLAs’ other missions. China continues to improve its military capabilities to fill these gaps, as highlighted in a 2018 RAND report, *Defeat, Not Merely Compete: China’s View of Its Military Aerospace Goals and Requirements in Relation to the United States*, which found that the main driver for China’s development of military aerospace power is the PLA’s view that it needs to be prepared to deter and, if necessary, defeat the United States in a high-end clash over Taiwan or maritime disputes with its neighbors. Such a requirement is driven not only by China’s pursuit of its security interests but also by nationalism and domestic politics.

In addition, RAND has analyzed the evolution of Chinese operational doctrine and concepts as represented by a 2018 RAND report, *Systems Confrontation and Systems Destruction Warfare: How the Chinese People’s Liberation Army Seeks to Wage Modern Warfare*, which explored how the PLA views militarized conflict as a contest between opposing operational systems. The report found that system-of-systems thinking pervades almost every aspect of the PLA’s approach to training, organizing, and equipping for modern warfare and identified the importance of systems thinking and systems concepts as key drivers of the PLA’s recent organizational reforms.

**Nuclear, Space, and Cyber Issues**

China is rapidly closing what was once a substantial gap between the PLA’s strategic weapons capabilities and its strategic deterrence concepts. As China has modernized and expanded its strategic deterrence capabilities, nuclear, space, and cyber issues have become more prominent in the U.S.-China security relationship. RAND research has also examined China’s evolving approach to strategic deterrence, and highlighted the growing importance of nuclear, space, and cyber issues in the U.S.-China security relationship. A 2016 RAND report, *China’s Evolving Approach to “Integrated Strategic Deterrence,”* found that China’s strategic deterrence concepts are evolving in response to a changing assessment of its external security environment and a growing emphasis on protecting its emerging interests in space and cyberspace. According to the report, China has a broad concept of strategic deterrence, one in which a multidimensional set of military and nonmilitary capabilities combine to constitute the “integrated strategic deterrence” posture required to protect Chinese interests. For China, powerful military capabilities of several types—including nuclear, conventional, space, and cyber capabilities—are all essential components of a credible strategic deterrent.

RAND research has further explored the dynamics of U.S.-China competition in the nuclear, space, and cyber arenas. A 2017 RAND report, *China’s Evolving Nuclear Deterrent: Major Drivers and Issues for the United States*, assessed the evolution of Chinese nuclear policy and presents an analysis of possible future trends. The report concluded that China’s overall approach to nuclear deterrence has been broadly consistent over the long term and remains predicated on China’s no-first-use policy, but that China has recently accelerated nuclear force–building and modernization. Chinese strategists are especially concerned about the development of U.S. missile defenses and conventional prompt global strike capabilities. Additionally, bureaucratic processes and domestic politics influence the development of Chinese nuclear forces and thinking. As a result, China is likely to increase emphasis on nuclear deterrence and force modernization in the coming years.

RAND research has examined China’s growing military space capabilities and the challenges competition in space poses for U.S. efforts to maintain deterrence and stability. A 2017 RAND report, *The Creation of the PLA Strategic Support Force and its Implications for Chinese Military Space Operations*, explored the missions and organization of the PLAs’ space enterprise following the major
reorganization of China’s military announced in December 2015. The report found that the PLA is increasing the prioritization of space and envisioning an expanded role for military space capabilities and operations, which it views as a key component of strategic deterrence, critical to enabling the PLA to fight informatized local wars and countering U.S. military intervention in the region, and essential for supporting operations aimed at protecting China’s emerging interests in more distant parts of the world. A 2010 RAND report, *Deterrence and First Strike Stability in Space: A Preliminary Assessment*, highlighted how challenges to space deterrence and stability are increasing because potential adversaries, including China, understand the high degree to which space systems enhance U.S. conventional warfighting capabilities, and are developing the ability to hold those U.S. space systems at risk. The report argued that the United States can respond by attempting to influence both sides of a potential adversary’s cost-benefit decision calculus simultaneously. According to the report, this strategy should include declaring that the United States will punish space aggressors and reduce the benefits an enemy might expect to gain in attacking U.S. space systems.

Still another thread of RAND research has focused on the emergence of cyber issues as a source of tension in the relationship between the United States and China. The cyber domain has become a growing source of friction as a result of Chinese cyber-enabled economic espionage and other forms of hacking against the United States and other countries. Recent disputes over 5G technology and its national security implications have further increased attention to this area. Against this backdrop, a 2016 RAND report, *Getting to Yes with China in Cyberspace*, explored the question of whether the United States and China can achieve meaningful outcomes through formal negotiations over norms and rules in cyberspace. The report found that the United States and China have very different perspectives on cyberspace. The United States emphasizes extending the rule of law internationally, whereas China stresses the maintenance of state sovereignty. The report also explored the possibility of establishing norms against countries attacking one another’s critical infrastructure, but assessed that Beijing is apprehensive of any agreement that it perceives as potentially putting China at a disadvantage.

**Conclusion: Taking Stock and Looking Ahead**

Over the past two decades, RAND research has helped inform policy debates on U.S.-China strategic competition, Chinese strategy, U.S. strategy and capabilities for countering China, important domestic trends related to China’s economic and industrial policies and military modernization, China’s growing engagement and competition with other countries, and nuclear and cyber issues. During this time, the U.S.-China relationship has taken on an increasingly competitive tone and, especially over the past few years, has become characterized by intensifying friction over a wide variety of diplomatic, economic, political, technological, and security issues. Many U.S. allies and partners in Asia are concerned that they will be caught in the middle as U.S.-China competition intensifies, raising uncomfortable questions about how to successfully manage their economic and security ties with the two great powers. All of this portends challenging times ahead for the United States, and U.S. policymakers will likely need to make difficult decisions. Indeed, as the United States increasingly focuses on strategic competition with China, several key questions require further study, and some new questions will need to be addressed: Will China adjust its strategy and tactics in response to balancing behavior by the United States and other countries, or double down on the more assertive foreign and security policy it has pursued in recent years? How quickly will China advance militarily and how expansive are its goals? Will it be possible for Washington and Beijing to maintain some level of cooperation in areas of shared interest as the U.S.-China relationship becomes more competitive? How will U.S. allies and partners and other countries respond to the challenges presented by U.S.-China strategic competition? What strategies and capabilities will the United States need to develop in the context of a more competitive relationship with an emerging superpower that has the willingness and ability to challenge U.S. interests in the Indo-Pacific region and beyond?
Annotated Bibliography

UNITED STATES AND CHINA: STRATEGIC COMPETITION

China’s Air Force Enters the 21st Century
Kenneth W. Allen, Glenn Krumel, and Jonathan D. Pollack

- The Chinese People's Liberation Army Air Force (PLAAF) does not constitute a credible offensive threat against the United States or its Asian allies, and this situation will not change dramatically over the coming decade. If anything, PLAAF's overall capabilities relative to most of its potential rivals will diminish over the next ten years.

Find the full report at www.rand.org/t/MR580

China’s Arms Sales: Motivations and Implications
Daniel L. Byman and Roger Cliff
MR-1119-AF (1999)

- Although Chinese sales have fallen in recent years, and Beijing has become more responsible in the transfer of nuclear, biological, and chemical (NBC) technologies, much progress will be needed to curtail China’s behavior. Principal recipients of Chinese arms have been Iran, Iraq, Myanmar, North Korea, Pakistan, and Thailand. These countries and others seek Chinese weapons because they are available, cheap, and easy to use and maintain. In addition to missiles, the Chinese are willing to transfer NBC technology. The United States and other countries do have a modest ability to influence Chinese behavior, and China has increasingly wished to be viewed as a responsible world nation.

- China’s arms sales have become the focus of considerable attention and pose a moderate threat to U.S. interests. The analysis supports three major findings about China’s arms sale behavior: (1) China’s arms transfers not motivated primarily to generate export earnings but by foreign policy considerations; (2) China’s government has more control over transfers than some have reported: its weapons export system is quite centralized; and (3) China’s adherence to international nonproliferation norms is in fact increasing. Nevertheless, Washington must hedge against the likelihood of sales and develop offsets in concert with allies.

Find the full report at www.rand.org/t/MR1119
China, Inside and Out: A Collection of Essays on Foreign and Domestic Policy in the Xi Jinping Era

Michael S. Chase, Cortez A. Cooper III, Keith Crane, Liisa Ecola, Scott W. Harold, Timothy R. Heath, Bonny Lin, Lyle J. Morris, and Andrew Scobell
CP-797 (2015)
• This collection of essays explores some of the realities of these philosophies—how they are reflected in Chinese policy, how they affect China's relations with the United States and U.S. allies in the region, and how policy is responding to and also changing the ways Chinese citizens work and live.

Find the full document at www.rand.org/t/CP797

How Taiwan’s Status Is Resolved Will Determine Whether U.S.-China Relations Are Cooperative or Hostile

Roger Cliff and David A. Shlapak
RB-226-AF (2007)
• This research brief examines how U.S.-China relations would be affected by the manner in which Taiwan’s status is resolved.

• Depending on how Taiwan’s status is resolved, U.S.-China relations could range from friendly cooperation to cold war. As China’s military capabilities grow, it will be increasingly important—and increasingly difficult—for the United States to both prevent an attempt at violent reunification and maintain the capability to defeat it.

Find the full document at www.rand.org/t/RB226

U.S.-China Relations After Resolution of Taiwan’s Status

Roger Cliff and David A. Shlapak
MG-567-AF (2007)
• This report considers the various possible outcomes and how they might affect U.S.-China relations. A total of ten distinct trajectories for the resolution of the cross-strait relationship can be identified, with greatly varying implications for U.S.-China relations.

• If China uses force against Taiwan, however, subsequent U.S.-China relations could fall anywhere from close cooperation to hostile cold war. Both how the Taiwan issue is resolved and the nature of subsequent U.S.-China relations will largely be determined by the nature of China's government: A democratic or, at least, highly pragmatic Chinese government is more likely to achieve a peaceful resolution; a government still controlled by the Chinese Communist Party is less likely to do so. As China's military capabilities grow, it will become increasingly difficult but also increasingly more important to prevent Beijing from using force to bring about unification.

Find the full document at www.rand.org/t/MG567
**Shaking the Heavens and Splitting the Earth: Chinese Air Force Employment Concepts in the 21st Century**

Roger Cliff, John F. Fei, Jeff Hagen, Elizabeth Hague, Eric Heginbotham, and John Stillion

**MG-915-AF (2011)**

- This monograph analyzes publications of the Chinese military, previously published Western analyses of China’s air force, and information available in published sources about current and future capabilities of the Chinese People’s Liberation Army Air Force (PLAAF).
- It describes the concepts for employing forces that the PLAAF is likely to implement in the future, analyzes how those concepts might be realized in a conflict over Taiwan, assesses the implications of China implementing these concepts, and provides recommendations about actions that should be taken in response.

Find the full document at www.rand.org/t/MG915

**China Could Use “Antiaccess” Strategies to Counter U.S. Military Superiority**

Roger Cliff, Mark Burles, Michael S. Chase, Derek Eaton, and Kevin L. Pollpeter

**RB-213-AF (2007)**

- This research brief addresses the possibility that potential adversaries might attempt to gain the upper hand against the United States by denying it access to technical and strategic assets.
- China could employ “antiaccess” strategies to prevent U.S. military forces from deploying or operating overseas. These actions could result in defeat for the United States, in the sense that China would accomplish its military and political objectives while preventing the United States from accomplishing some or all of its objectives. The United States can take short- and long-term steps to mitigate the Chinese antiaccess threat.

Find the full document at www.rand.org/t/RB213

**Stretching and Exploiting Thresholds for High-Order War: How Russia, China, and Iran Are Eroding American Influence Using Time-Tested Measures Short of War**

Ben Connable, Jason H. Campbell, and Dan Madden

**RR-1003-A (2016)**

- Since 9/11, three of the primary nation-state competitors to the United States—Russia, China, and Iran—have successfully exploited or stretched U.S. thresholds for high-order war in order to further their strategic ends and, in the process, undermine U.S. interests. U.S. policymakers and military service leaders would benefit from additional consideration of these measures, how they are used against the United States, and how they might be defended against and exploited to further U.S. strategic interests.
• Use of measures short of war is not a new phenomenon.
  ◦ Nothing can be done to eliminate the threat that measures short of war pose.
  ◦ Instead, addressing their use requires development and maintenance of an effective U.S. grand strategy that seamlessly incorporates measures short of war into a long-term, globally integrated plan.

Find the full report at www.rand.org/t/RR1003

**Conflict with China: Prospects, Consequences, and Strategies for Deterrence**

James Dobbins, David C. Gompert, David A. Shlapak, and Andrew Scobell

OP-344-A (2011)

• This paper presents some scenarios that, if they were to come to pass, could result in military conflict with China over the next 30 years.

• Although China’s military capabilities lag far behind those of the United States, it has—or will gain—local superiority, first in and around Taiwan and then at greater distances. As a result, direct defense of contested assets in the region will become increasingly difficult and would likely escalate geographically or into the cyber and economic realms. Enabling capabilities and buttressing the resolve of China’s neighbors is one means for improving U.S. prospects for direct defense while reducing the necessity for escalation. In parallel to that strategy, efforts to draw China into cooperative security endeavors should be proffered. The far-reaching specter of economic mayhem that would be a consequence of any Sino-American conflict, in effect a form of mutual assured economic destruction, also acts as a powerful mutual deterrent.

Find the full document at www.rand.org/t/OP344

**Conflict with China Revisited: Prospects, Consequences, and Strategies for Deterrence**

James Dobbins, Andrew Scobell, Edmund J. Burke, David C. Gompert, Derek Grossman, Eric Heginbotham, and Howard J. Shatz

PE-248-A (2017)

• Although armed conflict between the United States and China is not likely, the possibility is real enough to require prudent policies and effective deterrent measures.

• The United States will likely find itself forced to shift from deterrence by denial, based on direct defense of its interests and allies in the western Pacific, to deterrence by punishment, based on the threat of escalation.
  ◦ The United States may be able to reduce or delay reliance on escalatory responses by shifting to less vulnerable platforms: longer-range precision strike drones and vessels to carry longer-range drones and submarines, along with the further dispersal of bases and force flows.
  ◦ The United States can encourage and assist allies and partners in the region to increase the range and capabilities of their own air and sea defenses.
  ◦ Barring unforeseen technological developments, it will not be possible for the United States to confidently and indefinitely rely on the direct defense of its regional interests.

Find the full document at www.rand.org/t/PE248
What’s the Potential for Conflict with China, and How Can It Be Avoided?
James Dobbins, David C. Gompert, David A. Shlapak, and Andrew Scobell
RB-9657-A (2012)

- This brief presents scenarios to illustrate possible sources of military conflict with China over the next 30 years.
- Even as China becomes a near-peer competitor, armed conflict between China and the United States will be unlikely.
- To ensure the prevention of such a conflict, the United States must retain its deterrent capacity and bolster the capabilities and resolve of other regional states.
- Should conflict with China occur, the economic consequences would be historically unparalleled.
- A collapse of the Democratic People's Republic of Korea is the most likely East Asia contingency, and U.S. ground forces will be essential to address it.

Find the full document at www.rand.org/t/RB9657

Russia Is a Rogue, Not a Peer; China Is a Peer, Not a Rogue: Different Challenges, Different Responses
James Dobbins, Howard J. Shatz, and Ali Wyne
PE-310-A (2019)

- China’s growing influence is based largely on more-positive measures: trade, investment, and development assistance. These attributes make China a less immediate threat but a much greater long-term challenge.
- China presents a greater geoeconomic challenge to the United States than Russia does.
  - China’s per capita GDP approaches Russia’s; its population is eight times Russia’s, and its growth rate three times.
  - As of 2017, China’s economy was the second largest in the world, behind only that of the United States. Russia’s was 11th.
  - Russia’s military expenditure is lower than China’s, and that gap is likely to grow.
  - Russia is far smaller, has poorer economic prospects, and is less likely to dramatically increase its military power in the long term.
- Russia is a more immediate and more proximate military threat to U.S. national security than China is but can be countered.
  - Russia will probably remain militarily superior to all its immediate neighbors other than China.
  - Russia is vulnerable to a range of nonmilitary deterrents, such as sanctions on the Russian economy and limiting Russian income from exports of fossil fuels; however, multilateral efforts would be more effective than U.S.-only operations.
China presents a regional military challenge and a global economic one.

- Militarily, China can be contained for a while longer; economically, it has already broken free of regional constraints.
- Russia backs far-right and far-left political movements with a view to disrupting the politics of adversarial societies and, if possible, installing friendlier regimes. China, in contrast, seems basically indifferent to the types of government of the states with which it interacts, increasing its attractiveness as an economic partner.

Find the full document at www.rand.org/t/PE310

**The Evolving Israel-China Relationship**

Shira Efron, Howard J. Shatz, Arthur Chan, Emily Haskel, Lyle J. Morris, and Andrew Scobell

RR-2641-RC (2019)

- In this report, RAND researchers discuss the growing relationship and the challenges it poses for Israel and for Israel’s most important ally, the United States. The report concludes with two recommendations for Israel and one for the United States.
- The China-Israel relationship provides both countries with important opportunities.
- China’s primary objectives in Israel are acquiring advanced technology and utilizing Israel’s location for trade connectivity.
- China wants to sustain its relationship with Israel while continuing to enjoy good relations with countries in the Arab and Muslim worlds, particularly Iran.
- Israel seeks to expand its diplomatic and economic ties with the world’s fastest growing major economy and diversify its export markets and sources of investments.
- The relationship could cause Israel’s interests to diverge from those of the United States.
  - China’s engagement with the Israeli tech sector could upset Washington, especially in light of growing trade tensions between the United States and China.
- China’s construction and operation of key infrastructure projects in Israel raise political and security concerns.
  - The acquisition of Israeli companies and the knowledge generated through academic cooperation could enable China to gain crucial technologies, with insufficient returns for Israel.
  - Chinese installation of and access to cameras, radio, fiber-optics, and cellular networks raise cybersecurity, data privacy, and espionage risks.
  - Chinese involvement in commercial ports adjacent to Israeli naval bases raises security concerns for Israel and possibly the United States.

Find the full report at www.rand.org/t/RR2641

Chaoling Feng

RGSD-344 (2014)

- Based on the analysis of current U.S. and Chinese energy outward direct investment (EODI) positions, the report goes further to analyze their objectives and determinants, explaining both the similar and different aspects of EODI characteristics, positions and historical trends.
- The major technological breakthroughs in the field, especially in hydraulic fracturing and horizontal drilling technologies, may affect future demand, lifting costs, and geographic locations of energy reserves, and thus may affect the prospects of EODIs in significant ways.

Find the full document at www.rand.org/t/RGSD344

Engaging China in the International Export Control Process: Options for U.S. Policy

Charles A. Goldman and Jonathan D. Pollack

DB-197-OSD (1997)

- This document provides options for U.S. policy that will enhance China's participation in the control of international transfers of destabilizing military or dual-use technology.
- The United States lacks comprehensive on its goals for engaging China and has limited, intermittent, and unexploited leverage over Chinese policy.
- China has not internalized implications of weapons of mass destruction proliferation. They could internalize these if presented with appropriate U.S. policies.
- The United States needs a combination of strategies, both at high and working levels. This should include new regime structures to control emerging forms of technology transfer.

Find the full document at www.rand.org/t/DB197

Managing Policy Toward China Under Clinton: The Changing Role of Economics

Charles A. Goldman

DRU-928-1-CAPP (1995)

- This report analyzes the forces inside and outside the U.S. government that shape policy toward China, focusing on the reversal of policy that President Clinton announced in May 1994, when China's trade status was delinked from its human rights record.
- The report concludes that the road ahead for U.S.-China policy will not be a smooth one. Despite President Clinton's attempt to construct a more balanced policy, his failure to articulate an overall vision for China policy leaves the policy vulnerable to domination once again by a single interest. In particular, following the 1994 elections the new composition of Congress is fostering a peculiar left-right alliance, with Republicans pressing China on Taiwan and security issues and Democrats attacking human rights conditions in China.

Find the full document at www.rand.org/t/DRU928-1
**War with China: Thinking Through the Unthinkable**
David C. Gompert, Astrid Stuth Cevallos, and Cristina L. Garafola
RR-1140-A (2016)

- This analysis illuminates various paths a war with China could take and their possible consequences.
- Unless both U.S. and Chinese political leaders decline to carry out counterforce strategies, the ability of either state to control the ensuing conflict would be greatly impaired.
  - Both sides would suffer large military losses in a severe conflict. In 2015, U.S. losses could be a relatively small fraction of forces committed but still significant; Chinese losses could be much heavier than U.S. losses and a substantial fraction of forces committed.
  - This gap in losses will shrink as Chinese anti-access and area denial (A2/AD) improves. By 2025, U.S. losses could range from significant to heavy; Chinese losses, while still very heavy, could be somewhat less than in 2015, owing to increased degradation of U.S. strike capabilities.
  - China's A2/AD will make it increasingly difficult for the United States to gain military-operational dominance and victory, even in a long war.
- Conflict could be decided by domestic political, international, and economic factors, all of which would favor the United States in a long, severe war.
  - Although a war would harm both economies, damage to China's would be far worse.
  - Because much of the Western Pacific would become a war zone, China's trade with the region and the rest of the world would decline substantially.
  - China's loss of seaborne energy supplies would be especially damaging.
  - A long conflict could expose China to internal political divisions.
  - Japan's increased military activity in the region could have a considerable influence on military operations.

Find the full report at www.rand.org/t/RR1140

**Blinders, Blunders, and Wars: What America and China Can Learn**
David C. Gompert, Hans Binnendijk, and Bonny Lin
RR-768-RC (2014)

- This report analyzes eight historical examples of strategic blunders regarding war and peace and four examples of decisions that turned out well, and then applies those lessons to the current Sino-American case.
- Strategic blunders can happen when leaders rely on defective cognitive models of reality and have no one to correct them.
  - Strategic blunders can result from faulty intuition, egotism, arrogance, hubris, grand but flawed strategic ideas, underestimating the enemy and the difficulties and duration of conflict, overconfidence in war plans, ignoring what could go wrong, stifling debate, shunning independent advice, and penalizing dissent.
  - These conditions are especially dangerous when combined with excessive risk-taking based on an overestimation of one's ability to control events.
The key to bridging the gap between a defective model and objective reality is information, amply supplied and well used.

- Decisionmakers may be more receptive to information that supports rather than threatens their beliefs, preconceptions, and models.
- Institutions close to decisionmakers can be drawn into the same subjective perception of reality.
- Government institutions are not dependable safeguards against strategic mistakes.
- Improvements are needed in how leaders and institutions use information so that better cognitive models will enable them to make better choices.

Find the full report at www.rand.org/t/RR768

**Access Challenges and Implications for Airpower in the Western Pacific**

Eric Stephen Gons  
RGSD-267 (2011)

- This dissertation examines the risk of U.S.-China conflict based on a variety of theoretical works on conflict, applied to the U.S.-China relationship.
- Disputes over Taiwan could cause war between the United States and China, especially as the U.S. nuclear deterrent erodes.
- U.S. forces need to be balanced for offensive power and survivability.

Find the full document at www.rand.org/t/RGSD267

**Domestic Trends in the United States, China, and Iran: Implications for U.S. Navy Strategic Planning**

John Gordon IV, Robert W. Button, Karla J. Cunningham, Toy I. Reid, Irv Blickstein, Peter A. Wilson, and Andreas Goldthau  
MG-729-NAVY (2008)

- To help the Navy understand how critical near-, mid-, and far-term trends in the United States, China, and Iran might influence U.S. security decisions in general and the Navy's allocation of resources in particular, RAND examined emerging nonmilitary trends in each of the three countries. The authors investigated current and projected domestic developments in the areas of demographics, economics, energy consumption, the environment, and education. They also examined each country's relations with its so-called near abroad to determine how much of a challenge each of the three nations (plus Japan and Russia) will experience in their own immediate "neighborhoods."
- There will be less tolerance for costly, "big-ticket" defense projects in the United States; the Navy's "blue-green" mix will be affected.
- China will remain the Navy's greatest potential challenge, but Iran will continue to defy the United States in the Middle East.
• Further cooperation with key allies in the Pacific and the Greater Middle East will be required, as will an enduring defense commitment in the Middle East.

Find the full document at www.rand.org/t/MG729

**Defeat, Not Merely Compete: China’s View of Its Military Aerospace Goals and Requirements in Relation to the United States**
Scott W. Harold
RR-2588-AF (2018)

• This report explores the extent to which the desire to compete with the U.S. Air Force (or other advanced air forces) shapes Chinese People’s Liberation Army (PLA) thinking about the development of military aerospace power.

• The PLA’s goal is to defeat, not merely compete.
  ◦ The main driver for Chinese military aerospace power development is the PLA’s view that it needs to be prepared to deter and, if necessary, defeat the United States in a high-end clash.
  ◦ The PLA appears to copy foreign militaries when it can find low-cost hardware, organizational, or operational concepts that it can adapt from abroad to solve the operational challenges it confronts. In contrast, when foreign capabilities or organizational practices are irrelevant to Chinese military aerospace problem sets, the PLA either innovates its own solution or declines to replicate the foreign capability (although it does continue to track and study these).
  ◦ The PLA appears not to compete in certain areas because it does not need certain capabilities to accomplish its directed mission, or it has other means to address the military problem at hand.

Find the full report at www.rand.org/t/RR2588

**Getting to Yes with China in Cyberspace**
Scott W. Harold, Martin C. Libicki, and Astrid Stuth Cevallos
RR-1335-RC (2016)

• Can the United States and China achieve meaningful outcomes through formal negotiations over norms and rules in cyberspace? And, if so, what areas are most likely to yield agreement and what might be exchanged for what?

• Chinese and U.S. views of cybersecurity have very little overlap.
  ◦ The United States and China have very different perspectives on cyberspace. The United States emphasizes extending the rule of law internationally. China stresses the maintenance of state sovereignty.
  ◦ The most important U.S. interest on the bilateral agenda is for China to eliminate espionage for commercial gain and modulate its other cyber-espionage activities. The hack of the Office of Personnel Management was a particular sore point.
  ◦ Within the bilateral relationship, the United States places more importance on cyberspace issues than China does. Chinese behavior in cyberspace is often the top item on the bilateral agenda; U.S. behavior in cyberspace rarely makes China’s top-ten list.
 Avoiding targeting or carrying out espionage on critical infrastructure provides prospects for negotiating a set of norms.

- The Chinese appear interested in norms against countries attacking one another’s critical infrastructure. They also understand that such a norm would also have to forbid espionage against critical infrastructure (distinguishing espionage from implanting attacks is very hard).
- The United States believes it can catch Chinese cheating and would like some process by which cheating, once discovered, is acknowledged—with possible consequences to follow.
- The Chinese believe they are unlikely to catch cheating by the United States and are apprehensive of any agreement that would put them at a corresponding disadvantage.
- Any serious agreement would need a process that both sides could trust and may require some way to increase China's confidence it is own attribution capabilities.

Find the full report at www.rand.org/t/RR1335


Eric Heginbotham, Michael Nixon, Forrest E. Morgan, Jacob L. Heim, Jeff Hagen, Sheng Li, Jeffrey Engstrom, Martin C. Libicki, Paul DeLuca, David A. Shlapak, David R. Frelinger, Burgess Laird, Kyle Brady, and Lyle J. Morris

RR-392-AF (2015)

- The analysis is presented in ten scorecards that assess military capabilities as they have evolved over four snapshot years: 1996, 2003, 2010, and 2017. The results show that China is not close to catching up to the United States in terms of aggregate capabilities, but also that it does not need to catch up to challenge the United States on its immediate periphery.

- Although China’s capabilities fall behind those of the United States, it is now able to pose significant challenges to U.S. operations.

  - China has made tremendous strides in its military capabilities since 1996. It is not close to catching up to the U.S. military in terms of aggregate capabilities, but it does not need to catch up to challenge the United States on its immediate periphery.

  - Despite U.S. military improvements, China has made relative gains in most operational areas, in some cases with startling speed. However, trends vary by mission area, and even in the context of difficult scenarios, U.S. forces retain some important advantages.

- Distance and geography have major impacts on both sides’ ability to achieve their critical objectives.

  - In general, these factors work against the United States and largely counterbalance U.S. military strengths, especially in scenarios around China’s immediate periphery.

  - China’s ability to project power to more distant locations remains weak, and the United States continues to hold more decisive advantage in Asian scenarios at a distance from China’s coast.

  - However, China’s ability to project power is improving, and the relative balance in areas more distant from China is also shifting.

Find the full report at www.rand.org/t/RR392

Eric Heginbotham, Michael Nixon, Forrest E. Morgan, Jacob L. Heim, Jeff Hagen, Sheng Li, Jeffrey Engstrom, Martin C. Libicki, Paul DeLuca, David A. Shlapak, David R. Frelinger, Burgess Laird, Kyle Brady, and Lyle J. Morris

RB-9858/1-AF (2015)

- This RAND report analyzes the development of respective Chinese and U.S. military capabilities in ten categories of military operations across two scenarios, one centered on Taiwan and one on the Spratly Islands.
- Although China continues to lag behind the United States in terms of aggregate military hardware and operational skills, it has improved its capabilities relative to those of the United States in many critical areas. Moreover, China does not need to catch up fully to the United States to challenge the U.S. ability to conduct effective military operations near the Chinese mainland.
- China’s ability to threaten air bases, challenge U.S. air superiority, and attack U.S. aircraft carriers is of particular concern.

Find the full document at www.rand.org/t/RB9858z1

**China’s Evolving Nuclear Deterrent: Major Drivers and Issues for the United States**

Eric Heginbotham, Michael S. Chase, Jacob L. Heim, Bonny Lin, Mark R. Cozad, Lyle J. Morris, Christopher P. Twomey, Forrest E. Morgan, Michael Nixon, Cristina L. Garafola, and Samuel K. Berkowitz

RR-1628-AF (2017)

- This report includes a description of the evolution of Chinese nuclear policy and an analysis of future trends.
- China’s approach to nuclear deterrence has been broadly consistent since its first nuclear test in 1964.
  - China has, however, recently accelerated nuclear force–building and modernization.
- Chinese nuclear strategists still key primarily on nuclear developments in the United States.
  - Strategists are especially concerned about the development of U.S. missile defenses and conventional prompt global strike capabilities.
  - But planners are also concerned about the growth of nuclear inventories in Asia and the complex nuclear dynamics emerging there.
  - Some strategists say privately that China might not accept a push from India for nuclear parity, should New Delhi embark on such a course.
- Bureaucratic processes and politics are likely to affect the development of Chinese nuclear forces and thinking.
  - Civilian leaders are reportedly less involved than they once were in the details of decisionmaking about nuclear research, development, and production.
The nuclear constituency within the PLA is also gaining increased status and voice. There is no firewall between China's conventional and nuclear missile forces, and technologies and practices developed for the former are already being applied to the nuclear forces. In the future, this may give China some limited counterforce capability. China is likely to increase emphasis on nuclear deterrence and nuclear forces in the coming years. Although unlikely to change formal policy formulations, China may adjust its definitions of key terms or add caveats. It may, for example, hedge its language on no-first-use to include a conventional attack on its nuclear forces as “first use,” thus permitting a nuclear response.

Find the full report at www.rand.org/t/RR1628

**Facing the Missile Challenge: U.S. Strategy and the Future of the INF Treaty**

David W. Kearn, Jr.

MG-1181-TSF (2012)

This report attempts to explore and illuminate some potential responses of critical international actors, such as Russia, China, and America’s NATO and East Asian allies, to fully understand the expected costs that may be incurred over time.

It appears to make little sense for the United States to withdraw from the INF Treaty.

- Despite the existence of other regional threats, only the challenge of China's expansive missile forces would seem to warrant the consideration of an in-kind response by the United States.
- Given the potentially stringent requirements and significant costs of a new conventional IRBM program, alternative existing and future programs may prove more operationally flexible and cost-effective.
- Two states that have had previously questionable records in the proliferation arena—Russia and China—may have fewer concerns about maintaining robust export controls on missile technologies, and engage in further proliferation.
- The perpetuation of the INF Treaty reinforces global trends that have limited the number of states with intermediate-range missile capabilities.

U.S. withdrawal would likely also seriously undermine the Missile Technology Control Regime.

- Such a move would mark a dramatic reversal of the more cooperative policies of the Obama administration and the progress toward resetting the U.S.-Russia relationship as exemplified by the New Strategic Arms Reduction Treaty (START) treaty. It also is likely to be most controversial in Europe, where it has visibly contributed to stability and security.

The INF Treaty has clearly contributed to the security and stability of regions critical to U.S. national interests, most importantly Europe, and thus provides clear, if often taken-for-granted benefits for the United States.

- At the same time, a U.S. decision to unilaterally withdraw from the INF Treaty or cooperatively dissolve the treaty with Russia, could be viewed as destabilizing and create real challenges for America's allies in the East Asia region.

Find the full document at www.rand.org/t/MG1181
Terrence K. Kelly, David C. Gompert, and Duncan Long
RR-1359-A (2016)

- The research reported here examined trends in military capabilities among potential U.S. adversaries, and the report proposes an alternative way for the United States to secure its interests.

- The United States will face heightened costs and risks in using offensive military force in critical and contested regions by 2025.
  - This effect is most pronounced in the case of China and the western Pacific. Russia will also enhance its anti-access and area denial (A2/AD) capabilities to check the North Atlantic Treaty Organization’s response. Iran is and will remain a distant third in the ability to oppose projected forces, but its ability to strike soft but important targets in and around the Persian Gulf in reaction to U.S. threats will improve.

- If these trends continue, there is a growing danger that adversaries will use A2/AD as a shield behind which they can commit aggression.
  - In the China and Russia cases especially, A2/AD capabilities could delay and degrade intervening U.S. ground, naval, and air forces.
  - The United States’ declining ability to bring forces to bear in these regions and against these countries could have deleterious geostrategic consequences.

- As important as the ability to bring force to bear against aggressors is the type of force the United States chooses and prepares.
  - Current U.S. options to maintain the ability to conduct offensive military operations in these regions are risky, and the trends are not promising.

- The decline of the United States’ ability to project offensive force warrants reconsideration of why and how the United States uses its sustainable advantages to support its interests, responsibilities, and values.
  - The United States could embrace a broader concept of power projection while working with allies to develop allied A2/AD to prevent aggression, concentrating militarily on preventing enemies from projecting power under the shield of their A2/AD.

Find the full report at www.rand.org/t/RR1359

The United States and a Rising China: Strategic and Military Implications
Zalmay M. Khalilzad, Abram N. Shulsky, Daniel L. Byman, Roger Cliff, David T. Orletsky, David Shlapak, and Ashley J. Tellis
MR-1082-AF (1999)

- China could emerge, by 2015, as a formidable power, one that might offer an alternative to the current U.S. role as the region’s preferred security partner and its ultimate security manager.

- At present, the best U.S. response appears to be a combination of engagement and containment, a "congagement" policy that would continue to try to bring China into the current international system while both preparing for a possible Chinese challenge to it and seeking to convince the Chinese leadership that a challenge would be difficult and extremely risky to pursue.

Find the full report at www.rand.org/t/MR1082
The United States and Asia: Toward a New U.S. Strategy and Force Posture

Zalmay M. Khalilzad, David T. Orletsky, Jonathan D. Pollack, Kevin L. Pollpeter, Angel Rabasa, David A. Shlapak, Abram N. Shulsky, and Ashley J. Tellis

MR-1315-AF (2001)

• The past 20 years have been a time of relative peace in Asia and, notwithstanding the 1997–1998 financial crisis, also a period of robust economic growth. However, Asia is beset by a variety of problems that could well imperil the stability it has long enjoyed—including territorial disputes, nuclear rivalry, rising nationalist sentiments, and increased military capabilities.

• This report summarizes the manner in which the United States can best meet these challenges and thereby ensure continued peace and stability in the region. In the interests of this goal, the report outlines an integrated political, military, and economic strategy that the United States can pursue to inhibit the growth of rivalries in Asia and, more broadly, prevent the rise of instability in the region. Also delineated are changes in U.S. military posture that will be made necessary by this strategy.

Find the full report at www.rand.org/t/MR1315

Understanding the Emerging Era of International Competition: Theoretical and Historical Perspectives

Michael J. Mazarr, Jonathan S. Blake, Abigail Casey, Tim McDonald, Stephanie Pezard, and Michael Spirtas

RR-2726-AF (2018)

• The most recent U.S. National Security Strategy is built around the expectation of a new era of intensifying international competition, characterized by growing political, economic, and military competitions confronting the United States. Yet there is little rigorous analysis of what such an era might look like or how it might unfold. The authors examine the ways in which theory and history can help understand the coming era and offer findings.

• The emerging competition is likely to be most intense between a handful of specific states with status grievances and countervailing regional and global coalitions, including the wider international community.

• The hinge point of the competition will be the relationship between the architect of the rules-based order (United States) and the leading revisionist peer competitor that is involved in the most-specific disputes (China).

• Global patterns of competition are likely to be complex and diverse, with distinct types of competition prevailing in different issue areas.

• Managing the escalation of regional rivalries and conflicts—and keeping the United States from being drawn into them in service of secondary interests—is likely to be a major focus of U.S. statecraft.

• Currently, the competition seems largely focused on status grievances or ambitions, economic prosperity, technological advantage, and regional influence rather than conquest or the conscious, intentional resort to large-scale war.
• The competition is likely to be most intense and persistent in nonmilitary areas of national advantage—and the targeting of other societies with such means creates emerging and poorly understood escalatory risks.
• The postwar multilateral order provides the essential framework in which the emerging competition will unfold.
• Two flashpoints for the emerging competition lie in regional territorial and influence claims and in the growing tendency of authoritarian states to seek to extend their reach and control beyond their borders.
• The emerging era is likely to involve a drawn-out combination of contestation, competition, and cooperation in which “winning” or “victory” is the wrong mental model.

Find the full report at www.rand.org/t/RR2726

**China and the International Order**

**Michael J. Mazarr, Timothy R. Heath, and Astrid Stuth Cevallos**

**RR-2423-OSD (2018)**

• This report evaluates the character and possible future of China’s engagement with the postwar order and gives recommendations for U.S. policy.
• China’s behavior over the past two decades does not mark it as an opponent or saboteur of the postwar international order, but rather as a conditional supporter.
• China can be expected to demand more influence in the international system as a condition for its support.
• The posture China takes toward the institutions, norms, and rules of a shared order is in significant flux; a range of outcomes—from continued qualified support to more-aggressive challenges—are possible.
• Events, both inside and outside China, could drive its policy in many directions, and its future strategy is probably more unclear than at any time in years. U.S. policy must take into account this fundamental uncertainty.
• A strengthened and increasingly multilateral international order can continue to provide a critical tool for the United States and other countries to shape and constrain rising Chinese power.
• Examples of reforms to build multilateralism and strengthen norms include measures to expand the role of China and other developing economies in the International Monetary Fund and to increase Chinese involvement in mediating international conflicts through the United Nations.
• Modifications to the order on the margins in response to Chinese preferences will typically pose less of a threat to a stable international system than a future in which China is alienated from that system.
• Although Chinese-led initiatives do challenge U.S. leadership and influence, they generally do not pose a threat to the fundamental integrity of the international system.

Find the full report at www.rand.org/t/RR2423
Pacific Currents: The Responses of U.S. Allies and Security Partners in East Asia to China’s Rise
Evan S. Medeiros, Keith Crane, Eric Heginbotham, Norman D. Levin, Julia F. Lowell, Angel Rabasa, and Somi Seong
MG-736-AF (2008)

- China’s economic, military, and diplomatic power has been on the rise, and many worry that it is nudging aside U.S. influence in the Asia-Pacific region. To explore this issue, the authors examined six specific U.S. allies and partners—Australia, Japan, the Philippines, Singapore, South Korea, and Thailand. From extensive in-country interviews, trade and poll data, etc., they examined the responses in each nation to China’s rise and assessed the implications for U.S. regional security interests. The six nations see China primarily as a source of economic opportunity, but many have concerns about China’s regional goals. They want China to be engaged regionally in productive ways but do not want to allow it to become dominant.

- They find U.S. security commitments reassuring, bolstering their ability to engage China with confidence. The six nations clearly want U.S. involvement in the region to continue—but sometimes only in certain ways, at certain times, and on particular issues. Thus, they are pulling China closer for the economic opportunities it offers and the United States closer for the general reassurance that its long-standing power and influence provide.

Find the full document at www.rand.org/t/MG736

Chinese Investment in U.S. Aviation
Chad J. R. Ohlandt, Lyle J. Morris, Julia A. Thompson, Arthur Chan, and Andrew Scobell
RR-1755-USCC (2017)

- This report assesses Chinese investment in U.S. aviation from 2005 to 2016.

- China will likely account for up to one-fifth of global demand for large commercial aircraft (LCA) and is trying to grow its currently underdeveloped domestic general aviation (GA) industry.

- China’s unambiguous policy drives a whole-of-government effort to develop a globally competitive aviation industry by producing LCA and expanding China’s domestic GA market.

- Chinese investments in U.S. aviation have grown in scope and quantity over the past decade but are limited to smaller GA companies with technologies not particularly relevant to commercial or military aircraft, likely because of effective U.S. export and foreign investment regulations.

- Given the GA nature of most of the investments by Chinese firms to date, there are few technology-transfer concerns. The main benefits to China’s industry would be on the business-process side, such as international marketing, achieving Federal Aviation Administration safety certifications, and product support.

- U.S. competitiveness is unlikely to be threatened in the near term because production of China’s LCA—the C919—may be further delayed and operate less efficiently than current Western narrow-body aircraft on the international market. However, some experts remain concerned about the transfer of engine or avionics technology through COMAC C919 joint ventures with Western companies; others think technology transfers are unlikely given U.S. export controls.
• A more competitive civil aviation industry broadly supports Chinese military aviation (e.g., larger talent pool, scales of efficiency, greater supply chain options). However, direct military implications are minimal because advanced commercial aviation technology differs from military aviation technologies (e.g., stealth, radar, supersonic engines).

Find the full report at www.rand.org/t/RR1755

Managing the U.S.-China Military-to-Military Relationship
Kevin L. Pollpeter
RB-134-AF (2004)
• This report aims to assess the appropriate nature of contact between the U.S. and Chinese militaries.
• The United States should pursue communication between U.S. and Chinese senior defense and military officials.
• The United States should pursue improved methods of gathering information about China and its military.
• The United States and China should continue to cooperate in the global war on terrorism.
Find the full document at www.rand.org/t/RB134

China in the Middle East: The Wary Dragon
Andrew Scobell and Alireza Nader
RR-1229-A (2016)
• This report examines China’s interests in the region and assesses China’s economic, political, and security activities in the Middle East to determine whether China has a strategy toward the region and what such a strategy means for the United States.
• China has adopted a “wary dragon” strategy toward the Middle East.
  ◦ China exhibits wariness in its engagement with the Middle East. China endeavors to protect its expanding interests by not taking sides in conflicts and controversies.
  ◦ China avoids the public articulation of a Middle East policy or strategy and the making of hard commitments to any states beyond what is required to maintain cordial business relations and pragmatic diplomatic and security ties.
• China has four key interests in the Middle East.
  ◦ Energy security and economic stakes seem to be China’s paramount interests.
  ◦ China is also concerned with its geostrategic posture. China seeks to balance against U.S. influence in the Middle East, but China does not actively oppose the United States.
  ◦ China wants to ensure domestic tranquility, which involves quashing any public criticism of Chinese policies, notably with regard to Chinese Muslims and the Uighurs of Xinjiang.
  ◦ China aims to enhance its great-power status.
• China does not pose a threat to U.S. interests in the region.
  ◦ China is correcting what has tended to be a lopsided eastward overemphasis in terms of economic development and national security protection.
  ◦ China’s rebalance is neither a reaction to the Obama administration’s own rebalance nor a new phenomenon.
  ◦ China and the United States have overlapping interests in the Middle East—both desire stability and unfettered access to energy.
  ◦ Maintaining a modicum of stability in the region requires the vigorous efforts of outside powers. This is a role that China has not been willing or able to play. The United States is the primary actor fulfilling this role, and, for the foreseeable future, China seems amenable to this.
  ◦ Although China sees itself as locked in a great-power rivalry with the United States, it desires to maintain an overall climate of cordial and cooperative U.S.-Chinese relations.

Find the full report at www.rand.org/t/RR1229

**A Question of Balance: Political Context and Military Aspects of the China-Taiwan Dispute**

David A. Shlapak, David T. Orletsky, Toy I. Reid, Murray Scot Tanner, and Barry Wilson
MG-888-SRF (2009)

• In this volume, the authors employ a mix of theater-level combat modeling, simpler mathematical models, historical analysis, interviews with experts, and qualitative judgment to evaluate both the China-Taiwan political dynamic and the cross-strait military balance.

• The relationship between China and Taiwan was more stable in 2009 than it had been in years, but China has nonetheless not renounced its “right” to use force to forestall Taiwan’s “independence.” At the same time, the cross-strait military balance is shifting in ways that are problematic for Taiwan’s defense: The growing size and quality of China’s missile arsenal, along with other advances in Chinese military capabilities, call into question the United States’ and Taiwan’s ability to defend the island against a large-scale Chinese attack. The authors conclude with a discussion of how Taiwan might be successfully defended against a Chinese invasion attempt.

Find the full document at www.rand.org/t/MG888

**The Role of Southeast Asia in U.S. Strategy Toward China**

Richard Sokolsky, Angel Rabasa, and C. Richard Neu
MR-1170-AF (2001)

• The authors examine the role of regional states in developing a hedge against the possible emergence of an overly aggressive China.

• China’s geopolitical ambitions and growing military capabilities and the Southeast Asian states’ perceptions of a rising China will play a crucial role in shaping the future of Southeast Asia and the U.S. military posture in the region. The authors examine the role of regional states in developing a hedge against the possible
emergence of an overly aggressive China. They find that rather than confronting a conventional attack, the United States and the Southeast Asian countries are likely to find a continuation of China's creeping irredentism and ambiguous threats. Southeast Asia is likely to prove a critical testing ground for a third way of dealing with China's rising power—what in other RAND work has been called a policy of engagement—that seeks to integrate China into the international system while both deterring and preparing for a possible Chinese challenge. The report recommends that the United States adopt an incremental approach to this hedging strategy, focusing on peacetime military engagement with Southeast Asian states, development of a more robust and diversified network of access arrangements, and strengthened military ties with the Philippines, Singapore, Thailand, Malaysia, Indonesia, and Vietnam.

Find the full report at www.rand.org/t/MR1170

**Convergent and Divergent U.S.-China Interests: Designing “Win-Win” Portfolios: Test of Concept**

Charles Wolf, Jr., Eric V. Larson, and Marlon Graf
WR-1139-SRF (2016)

- The aim of this “test-of-concept” document is to develop several portfolios of possible deals, bargains, or arrangements between the U.S. and China that (a) illustrate their convergent and divergent interests (including both security and economic interests); (b) suggest how their convergent interests can be enhanced for their mutual benefit; (c) illustrate how their divergent interests might be mitigated by reciprocal concessions that (together with (b) above) can produce “win-win” outcomes that both sides would view as preferable to present circumstances; and (d) are potentially negotiable, verifiable, and sustainable.

- Based on preliminary work, we assess that several potential win-win outcomes can be reached by the United States and China through reciprocal concessions, such as U.S. reductions in arms sales to Taiwan, while China reciprocates by deferring sovereignty issues in the South China Sea (SCS) and instead agrees to vest SCS mineral and other resources in a multinational holding company whose ownership is shared among China and other claimant countries. The report should be of interest to U.S. and Chinese foreign affairs and defense policymakers who are involved in managing the U.S.-China bilateral relationship. This research was sponsored by a grant from a private foundation.

Find the full document at www.rand.org/t/WR1139

**Straddling Economics and Politics: Cross-Cutting Issues in Asia, the United States, and the Global Economy**

Charles Wolf, Jr.

- This collection of essays examines the case for and against globalization, the effects of U.S. economic and foreign policy, and numerous issues related to Asian economics and politics.

- The author provides remarkable insight into the economic and military directions in which particular countries or regions are moving, and what these movements portend for the future.

Find the full report at www.rand.org/t/MR1571
In Line or Out of Order? China’s Approach to ADIZ in Theory and Practice
Edmund J. Burke and Astrid Stuth Cevallos
RR-2055-AF (2017)
• This report builds on existing reports and Chinese-language open sources to explore questions about the East China Sea (ECS) Air Defense Identification Zone (ADIZ) and evaluate the prospects for a possible South China Sea (SCS) ADIZ.
• China’s inclusion of the Senkakus (Diaoyus) in its ECS ADIZ certainly has not created new normative behaviors that favor China and its claim there.
• Declaring an ADIZ (or more than one) in the SCS could arguably work against Chinese strategic goals there.
• However, China could establish a SCS ADIZ after deciding that U.S. operations or diplomatic/political-military developments had reached a point that necessitated an additional response from Beijing.

Patterns in China’s Use of Force: Evidence from History and Doctrinal Writings
Mark Burles and Abram N. Shulsky
MR-1160-AF (2000)
• This report uses historical analysis to predict future Chinese military behavior.
• The People’s Republic of China has often used force in ways that surprised and perplexed other countries. The Chinese appear to believe that, by carefully designing military operations to achieve maximum political effect, they can successfully use force even when the overall military balance is unfavorable. China’s past successes in using force in this way while avoiding a massive reaction from its adversaries may give it confidence that it can succeed in the future as well. And China may feel that it can afford to accept greater risks. Many of the past uses of force occurred when China either was not a nuclear power or did not have a secure nuclear second-strike capability. The possession of strategic nuclear weapons may enable the Chinese leadership to run risks that it otherwise could not. This is tempered however, by the facts that China ran its past risks when it had some degree of support from one superpower against the other and that, after decades of economic development, China now has more to lose if it underestimates the risks.

Find the full report at www.rand.org/t/RR2055
Find the full report at www.rand.org/t/MR1160
**China’s Evolving Approach to “Integrated Strategic Deterrence”**

Michael S. Chase and Arthur Chan  
RR-1366-TI (2016)

- This report finds that China’s strategic-deterrence concepts are evolving in response to a changing assessment of its external security environment and a growing emphasis on protecting its emerging interests in space and cyberspace. At the same time, China is rapidly closing what was once a substantial gap between the People’s Liberation Army’s strategic weapons capabilities and its strategic-deterrence concepts. Chinese military publications indicate that China has a broad concept of strategic deterrence, one in which a multidimensional set of military and nonmilitary capabilities combine to constitute the “integrated strategic deterrence” posture required to protect Chinese interests. For China, powerful military capabilities of several types—including nuclear capabilities, conventional capabilities, space capabilities, and cyberwarfare forces—are all essential components of a credible strategic deterrent. Chinese military publications indicate that nonmilitary aspects of national power—most notably diplomatic, economic, and scientific and technological strength—also contribute to strategic deterrence alongside military capabilities.

Find the full report at www.rand.org/t/RR1366

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**China, Inside and Out: A Collection of Essays on Foreign and Domestic Policy in the Xi Jinping Era**

Michael S. Chase, Cortez A. Cooper III, Keith Crane, Liisa Ecola, Scott W. Harold, Timothy R. Heath, Bonny Lin, Lyle J. Morris, and Andrew Scobell  
CP-797 (2015)

- China is guided by a few overriding philosophies. Outwardly, it is promoting a “new type of great power relations” between itself and the United States, and a “community of shared interests” within Asia. Inwardly, it is guided by the “Chinese Dream,” a vision for increased prosperity, greater social stability, and a higher quality of life for China’s people.

- This collection of essays explores some of the realities of these philosophies—how they are reflected in Chinese policy, how they affect China’s relations with the United States and U.S. allies in the region, and how policy is responding to and also changing the ways Chinese citizens work and live.

Find the full document at www.rand.org/t/CP797

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**People’s Liberation Army Air Force Operations over Water: Maintaining Relevance in China’s Changing Security Environment**

Mark R. Cozad and Nathan Beauchamp-Mustafina  
RR-2057-AF (2017)

- The Chinese People’s Liberation Army Air Force (PLAAF) is transitioning from the experimental phase to regularizing these long-range power-projection activities. In the future, Chinese leaders will likely expect the
PLAAF to provide more strategic capacity—enforcing territorial claims, supporting strategic conventional deterrence, and, in the case of war, performing maritime strikes in the region.

- Recent over-water flights have several purposes.
  - Recent over-water flights have been termed as normal operations and part of the natural development of the Chinese military, but authoritative military commentary suggests that the utility of these flights extends beyond simply training for maritime missions, because they are sometimes also intended to convey strategic signals to relevant countries during times of political tension with China.

- The H-6K strategic bomber has a longer range than its predecessors.
  - The H-6K long-range strategic bomber’s extended range compared with that of its predecessors enables the PLAAF to fly farther from China, expanding the list of potential targets for the People’s Liberation Army. One specific application of this extended range, which is often unreported in Chinese official statements and state-run media, is the H-6K’s strike capabilities against Guam.

- Expanding global engagement is changing the way the Chinese services plan, deploy, and fight.
  - China’s rise brings with it numerous imperatives and concerns, including expanded economic engagement in diverse regions, growing political influence and responsibilities, and new challenges to its territorial claims. To cope with these changes, air force training has shifted emphasis toward training for long-distance patrols and long-distance strike missions, to enable the projection of power over both land and maritime domains.

Find the full report at www.rand.org/t/RR2057

*Defeat, Not Merely Compete: China’s View of Its Military Aerospace Goals and Requirements in Relation to the United States*

Scott W. Harold

**RR-2588-AF (2018)**

- This report explores the extent to which the desire to compete with the U.S. Air Force (or other advanced air forces) shapes People’s Liberation Army (PLA) thinking about the development of military aerospace power.

- The PLA’s goal is to defeat, not merely compete.
  - The main driver for Chinese military aerospace power development is the PLA’s view that it needs to be prepared to deter and, if necessary, defeat the United States in a high-end clash.
  - The PLA appears to copy foreign militaries when it can find low-cost hardware, organizational, or operational concepts that it can adapt from abroad to solve the operational challenges it confronts. In contrast, when foreign capabilities or organizational practices are irrelevant to Chinese military aerospace problem sets, the PLA either innovates its own solution or declines to replicate the foreign capability (although it does continue to track and study these).
  - The PLA appears not to compete in certain areas because it does not need certain capabilities to accomplish its directed mission, or it has other means to address the military problem at hand.

Find the full report at www.rand.org/t/RR2588
China’s Pursuit of Overseas Security

Timothy R. Heath
RR-2271-OSD (2018)

- The report concludes that China is likely to pursue a distinctive approach that features a far more limited military role than has been the case for the United States or imperial powers of previous centuries.
- China is likely to pursue a distinctive approach that features a far more limited military role than has been the case for the United States or imperial powers of previous centuries.
- China’s military will likely play a smaller role in the overall set of forces involved with overseas security.
- China will rely heavily on less politically sensitive methods, such as funding host-nation security efforts and encouraging commercial security contractors to assume some of the work of personal and asset security.
- Due to its limited investment in power projection capabilities, China is likely to have little option but to accept a higher degree of disorder and risk in some of the countries in which it is expanding its economic presence.
- Despite the incentives in favor of a smaller overseas military presence, China is likely to increase its investment in certain capabilities.

Find the full report at www.rand.org/t/RR2271

The PLA and China’s Rejuvenation: National Security and Military Strategies, Deterrence Concepts, and Combat Capabilities

Timothy R. Heath, Kristen Gunness, and Cortez A. Cooper III
RR-1402-OSD (2016)

- This report describes China’s overarching national and security strategies and its approach to war and escalation control; summarizes its military capabilities developments; and reviews its concepts for deterrence in strategic and conventional domains.
- Chinese perceptions and assessments are not static, they change and evolve as China’s standing in the world increases and its national interests grow, and the conclusions Chinese planners draw from such assessments also evolve.
- It is necessary to continue monitoring and analyzing emerging literature and assessments on concepts discussed in this report—particularly those with broader implications for current events.
- China might have a higher threshold for risk than the United States may expect, particularly when it comes to defending such “core interests” as territory and sovereignty claims. This could lead Chinese leaders to do something that they would not consider escalatory but which the United States might.
• Although “active defense” and China’s “no first use” policy state that China will not fire the first shot (or nuclear weapon), the definition of first shot is ambiguous.

• The strength of U.S. alliances, defense capacity of U.S. allies and partners, and U.S. military presence in the region do affect the direction of Chinese research, development, and acquisition and capabilities development, particularly in high-technology areas.

• China’s expanding interests increasingly require a capacity to provide security for investments and business ventures around the world.

Find the full report at www.rand.org/t/RR1402

**China’s International Behavior: Activism, Opportunism, and Diversification**
Evan S. Medeiros
MG-850-AF (2009)

• This report examines how China views its security environment, how it defines its international objectives, how it is pursuing these objectives, and the consequences for U.S. economic and security interests.

• China is active in regions and on issues that were once only peripheral to its interests, and it is effectively using tools previously unavailable. It is no longer appropriate to talk of integrating China into the international system; by and large, it is already there. Its international behavior is clearly altering the dynamics of the current international system, but it is not transforming its structure.

Find the full document at www.rand.org/t/MG850

**A New Direction for China’s Defense Industry**
Evan S. Medeiros, Roger Cliff, Keith Crane, and James C. Mulvenon
MG-334-AF (2005)

• Assesses trends in China’s 25-year effort to reform its defense industry.

• Since the early 1980s, a prominent and consistent conclusion drawn from research on China’s defense-industrial complex has been that China’s defense-production capabilities are rife with weaknesses and limitations. This study argues for an alternative approach: From the vantage point of 2005, it is time to shift the focus of current research to the gradual improvements in and the future potential of China’s defense-industrial complex. The study found that China’s defense sectors are designing and producing a wide variety of increasingly advanced weapons that, in the short term, are relevant to a possible conflict over Taiwan but also to China’s long-term military presence in Asia. Part of a larger RAND Project AIR FORCE study on Chinese military modernization, this study examines the current and future capabilities of China’s defense industry.

Find the full document at www.rand.org/t/MG334
Chinese Responses to U.S. Military Transformation and Implications for the Department of Defense
James C. Mulvenon, Murray Scot Tanner, Michael S. Chase, David R. Frelinger, David C. Gompert, Martin C. Libicki, and Kevin L. Pollpeter

- The authors focus on four areas of counter-transformation options that China may pursue (which most likely would include all or portions of each strategy): Conventional Modernization “Plus”; Subversion, Sabotage, and Information Operations; Missile-Centric Strategies; and Chinese Network-Centric Warfare
- The acceleration of its own military modernization suggests that China is not dissuaded by U.S. military prowess but instead is driven by a range of strategic and military motivations to keep pace. The path China takes will depend on its key national security goals and the political and economic context within which these goals are pursued. That said, the authors offer possible U.S. counterresponses to such courses of action (e.g., planning defensive measures, augmentation of network-centric platforms) and emphasize that the ultimate “victor” of transformation will be the nation with the best combination of surprise, error control, fortune, and highly trained people.

Find the full document at www.rand.org/t/MG340

China’s Search for Security
Andrew J. Nathan and Andrew Scobell
CB-531 (2012)

- Despite its impressive size and population, economic vitality, and drive to upgrade its military capabilities, China remains a vulnerable nation surrounded by powerful rivals and potential foes. The key to understanding China’s foreign policy is to grasp these geostrategic challenges, which persist even as the country comes to dominate its neighbors.

Find the full document at www.rand.org/t/CB531

China in the Middle East: The Wary Dragon
Andrew Scobell and Alireza Nader
RR-1229-A (2016)

- This report examines China’s interests in the region and assesses China’s economic, political, and security activities in the Middle East to determine whether China has a strategy toward the region and what such a strategy means for the United States.
- China has adopted a “wary dragon” strategy toward the Middle East.
  - China exhibits wariness in its engagement with the Middle East. China endeavors to protect its expanding interests by not taking sides in conflicts and controversies.
  - China avoids the public articulation of a Middle East policy or strategy and the making of hard commitments to any states beyond what is required to maintain cordial business relations and pragmatic diplomatic and security ties.
• China has four key interests in the Middle East.
  ◦ Energy security and economic stakes seem to be China's paramount interests.
  ◦ China is also concerned with its geostrategic posture. China seeks to balance against U.S. influence in the Middle East, but China does not actively oppose the United States.
  ◦ China wants to ensure domestic tranquility, which involves quashing any public criticism of Chinese policies, notably with regard to Chinese Muslims and the Uighurs of Xinjiang.
  ◦ China aims to enhance its great-power status.

• China does not pose a threat to U.S. interests in the region.
  ◦ China is correcting what has tended to be a lopsided eastward overemphasis in terms of economic development and national security protection.
  ◦ China's rebalance is neither a reaction to the Obama administration's own rebalance nor a new phenomenon.
  ◦ China and the United States have overlapping interests in the Middle East—both desire stability and unfettered access to energy.
  ◦ Maintaining a modicum of stability in the region requires the vigorous efforts of outside powers. This is a role that China has not been willing or able to play. The United States is the primary actor fulfilling this role, and, for the foreseeable future, China seems amenable to this.
  ◦ Although China sees itself as locked in a great-power rivalry with the United States, it desires to maintain an overall climate of cordial and cooperative U.S.-Chinese relations.

Find the full report at www.rand.org/t/RR1229

**At the Dawn of Belt and Road: China in the Developing World**

Andrew Scobell, Bonny Lin, Howard J. Shatz, Michael Johnson, Larry Hanauer, Michael S. Chase, Astrid Stuth Cevallos, Ivan W. Rasmussen, Arthur Chan, Aaron Strong, Eric Warner, and Logan Ma

RR-2273-A (2018)

• Analysis of China's political and diplomatic, economic, and military engagement with the Developing World, region by region, focusing on the 21st century through the beginning of the Belt and Road Initiative. Authors show that China has oriented its security concerns and its overall engagement in concentric circles of importance. Near neighbors merit the most attention. Authors conclude with policy implications for the United States.

• China's involvement with the Developing World encompasses political and diplomatic, economic, and military dimensions.
  ◦ The Developing World offers China economic growth and global influence.
  ◦ Beijing has a growing challenge of protecting overseas citizens and investments.
  ◦ Southeast Asia is China's top priority economically and politically.
China’s geostrategic relationships with pivotal states focus on anticipated bilateral and regional benefits.

- China sees benefits in Malaysia (economic), Indonesia (political), Thailand (trustworthiness), and Vietnam (geostrategic risk).
- Russia concentrates on military activities and shares China’s interests in countering terrorism and Western ideas of democracy and human rights.
- Pakistan assists China in internal security.
- Iran offers China a friend not beholden to the United States.
- The Republic of South Africa has a strong financial sector and rule of law.
- Venezuela’s oil deposits have been attractive.

Consequences of the Chinese strategy toward the Developing World for the United States.

- Washington and Beijing are contentious over Chinese activities in the South China Sea and China’s insistence that U.S. military vessels and aircraft get permission prior to traversing disputed waters.
- Outside Southeast Asia, the United States and China appear to be partners in parallel: two states working separately with no collaboration but in pursuit of similar ends. Their relationship varies significantly by region.
- China is not an adversary but can harm U.S. global interests. A challenge remains as to whether and how to encourage China to act as a cooperative partner.

Find the full report at www.rand.org/t/RR2273

**China’s Strategy Toward South and Central Asia: An Empty Fortress**

Andrew Scobell, Ely Ratner, and Michael Beckley

RR-525-AF (2014)

This report analyzes what is driving China’s Central Asia and Afghanistan-Pakistan policies, identifies China’s overarching strategy, examines the extent of Chinese activities in the region, and assesses their implications for the United States.

Four drivers of China’s Central Asia policy:

- Beijing is consumed by insecurity and the goals of ensuring domestic stability and protecting national unity. China is especially preoccupied with suppressing internal unrest among ethnic minorities in its western regions.
- Beijing is driven to maintain peace, predictability, and secular governments in the countries of Central Asia because it fears linkups between internal challenges and external threats, notably the Uighur Diaspora that spills across national borders.
- China seeks to increase influence in Central Asia and thereby limit the influence of other powers.
- China seeks to promote its economic interests in Central Asia and enhance energy security.

China’s relations with Afghanistan and Pakistan:

- China has friendly relations with Afghanistan and has become the largest investor in the country, but it has been a bystander to Western military activities in the country.
- Pakistan is probably China’s closest and most enduring ally of the past half-century, but its strategic importance to China has decreased since the end of the Cold War.
- The future of Chinese influence in both these countries is uncertain.
• China’s Empty Fortress strategy and its implications for the United States:
  ◦ China’s westernmost regions are poorly defended and vulnerable to internal dissent and external threats. China has boldly projected an image of considerable strength in these regions to mask serious frailty—known as an “Empty Fortress” stratagem in the annals of Chinese history.
  ◦ China’s Empty Fortress strategy is exemplified by its promotion of the Shanghai Cooperation Organization (SCO), which consists of China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan. The SCO gives the outward appearance of potency and activism but is in fact a loose collection of states incapable of resolute collective action.
  ◦ Currently, China is not a major threat to U.S. interests in Central Asia, Afghanistan, or Pakistan and is unlikely to pose one in the near future.

Find the full report at www.rand.org/t/RR525

Interpreting China’s Grand Strategy: Past, Present, and Future
Michael D. Swaine and Ashley J. Tellis
MR-1121-AF (2000)
• To more accurately and fully assess the significance of China’s emergence for the United States and the global community, it is necessary to gain a more complete understanding of Chinese security thought and behavior. This study addresses such questions as: What are China’s most fundamental national security objectives? How has the Chinese state employed force and diplomacy in the pursuit of these objectives over the centuries? What security strategy does China pursue today and how will it evolve in the future?
• China’s continuing rapid economic growth and expanding involvement in global affairs pose major implications for the power structure of the international system. The study asserts that Chinese history, the behavior of earlier rising powers, and the basic structure and logic of international power relations all suggest that, although a strong China will likely become more assertive globally, this possibility is unlikely to emerge before 2015-2020 at the earliest. To handle this situation, the study argues that the United States should adopt a policy of realistic engagement with China that combines efforts to pursue cooperation whenever possible; to prevent, if necessary, the acquisition by China of capabilities that would threaten America’s core national security interests; and to remain prepared to cope with the consequences of a more assertive China.

Find the full report at www.rand.org/t/MR1121

Hostile Social Manipulation: Present Realities and Emerging Trends
RR-2713-OSD (2019)
• The authors conduct a detailed assessment of available evidence of Russian and Chinese social manipulation efforts, the doctrines and strategies behind such efforts, and evidence of their potential effectiveness.
• The United States is only beginning to examine the techniques and reach of information warfare.
• The United States needs an updated framework for organizing its thinking about the manipulation of infospheres by foreign powers determined to gain competitive advantage.
• Leading autocratic states have begun to employ information channels for competitive advantage—plans that remain in their initial stages and that could unfold in several ways.
• Efforts at social manipulation are effective to the degree that vulnerabilities in a society allow them to be effective.
• There is no conclusive evidence about the actual impact of hostile social manipulation to date.
• There is a critical distinction between the outputs of manipulation campaigns and their outcomes in terms of effects on attitudes or behavior.
• The marriage of the hostile intent of leading powers and the evolution of information technology may vastly increase the effectiveness and reach of these techniques over time.
• Leading democracies may have a limited window of opportunity to develop resilience and active defenses against such measures before they become truly dangerous.
• Democracies urgently need to undertake rigorous research on social manipulation to gain a better understanding of its dynamics.

Find the full report at www.rand.org/t/RR2713

Systems Confrontation and System Destruction Warfare: How the Chinese People’s Liberation Army Seeks to Wage Modern Warfare

Jeffrey Engstrom
RR-1708-OSD (2018)

• This report reflects an attempt to understand current thinking in the Chinese People’s Liberation Army (PLA) regarding system of systems and systems warfare, as well as current methods of warfighting. It also serves as a guidebook to the already substantial number of systems and systems-related concepts that abound in PLA sources. By examining numerous Chinese-language materials, this report (1) explores how the PLA understands systems confrontation and comprehends prosecuting system destruction warfare, (2) identifies the components of the PLA’s own operational system by looking at the various potential subsystem components and how they are connected, and (3) examines selected PLA operational systems identified in PLA literature and envisioned by the PLA to prosecute its campaigns, such as the firepower warfare operational system.
• System-of-systems thinking drives how the PLA understands and seeks to win modern warfare.
  ◦ Systems confrontation is recognized by the PLA to be the mode of warfare in the 21st century, because the PLA perceives militarized conflict to be a contest between opposing operational systems.
  ◦ System destruction warfare constitutes the PLA’s theory of victory.
  ◦ PLA sees system of systems as the foundation by which to achieve integrated joint operations and “win informationized local wars.”
• System-of-systems thinking pervades virtually every aspect of the PLA’s approach to training, organizing, and equipping for modern warfare over the past two decades.
  ◦ New equipment and platforms are undoubtedly being considered based on how they fill gaps or improve the efficiency of envisioned operational systems.
  ◦ The PLA is seeking to build a well-balanced operational system, including by not limited to developing and operationalizing command information systems throughout the chain of command while increasing the robustness of the military transmission network.
  ◦ It is the success or failure of aspects such as these that will ultimately determine the efficacy and viability of the PLA’s operational system.

• Systems thinking and systems concepts appear to be a guiding logic behind recent organizational changes.
  ◦ They seem to have provided a strong impetus to move from the former military region structure to the recently developed theater command structure.
  ◦ The Strategic Support Force has been created to unify and improve the PLA’s efforts in achieving dominance in the space, cyber, electromagnetic, and possibly psychological domains.

Find the full report at www.rand.org/t/RR1708
of anti-ship, anti-aircraft, and surface-to-surface missiles to impose the same problems on adversaries threatening them with attack over water. The U.S. joint force could provide support—and potentially reinforcements—to its allies.

- A2/AD concepts shift the primary responsibility for defense to U.S. allies and partners.

- Ground-based A2/AD missions include anti-ship missions, surface-to-surface missions, and short-range air and cruise missile defense missions.

  - Threats in the Pacific theater clearly demand that the United States and its allies and partners possess anti-ship capabilities.
  
  - A surface-to-surface strike is a critical capability to conduct counterbattery fires against enemy anti-ship missile batteries, long-range anti-aircraft missile systems, and adversary air and sea bases.
  
  - The demands for air and cruise missile defense are great in the western Pacific, owing both to the threat posed by the large Chinese investment in cruise missiles and to emerging joint operational concepts that geographically disperse air bases. The same is likely true to an even greater extent in Eastern Europe in potential operations against Russia.

Find the full report at www.rand.org/t/RR1820

**America’s Strategy-Resource Mismatch: Addressing the Gaps Between U.S. National Strategy and Military Capacity**

Timothy M. Bonds, Michael J. Mazarr, James Dobbins, Michael J. Lostumbo, Michael Johnson, David A. Shlapak, Jeffrey Martini, Scott Boston, Cristina L. Garafola, John Gordon IV, Sonni Efron, Paul S. Steinberg, Yvonne K. Crane, and Daniel M. Norton

RR-2691 (2019)

- In this report, RAND researchers analyze the specific technological, doctrinal, and budgetary gaps between the stated strategic and defense policies of the United States and the resources and capabilities that would be required to implement those policies successfully.

- Significant policy-resource gaps exist.

  - More funding will be needed to close the gap between the 2018 U.S. Department of Defense (DoD) budget and the forces needed to implement the Trump administration’s stated security and defense strategy and goals for military modernization.

  - Investments should therefore be prioritized by (1) the importance of the goal to the United States and its interests, (2) the size and urgency of the gap between the capabilities required to achieve defense objectives and the forces ready and postured to provide the capabilities, and (3) the availability of realistic opportunities for the United States to close these gaps.

- Investments will need to be prioritized by their importance to the United States and its interests.

  - Tier 1 priorities are to improve U.S. nuclear deterrence; achieve limited ballistic missile defense; and counter terrorist threats to the U.S. homeland, particularly those using weapons of mass destruction.

  - Tier 2 priorities should begin with deterring or defeating Russian aggression in the NATO Baltic states; countering North Korean ballistic missile and artillery threats, improving the U.S. ability to evacuate its nationals from combat zones, and seizing and securing nuclear weapons if North Korea collapses; and deterring or defeating Chinese aggression against Taiwan if needed.
Tier 3 priorities should include potential threats that require ongoing attention, but that are less likely to cause a near-term disaster for the United States or its allies and interests. These priorities include countering Chinese coercion of U.S. allies and partners; countering hostile Iranian actions; and continuing to degrade violent extremist organizations.

Find the full report at www.rand.org/t/RR2691

**Conflict with China Revisited: Prospects, Consequences, and Strategies for Deterrence**
James Dobbins, Andrew Scobell, Edmund J. Burke, David C. Gompert, Derek Grossman, Eric Heginbotham, and Howard J. Shatz
PE-248-A (2017)
- Although armed conflict between the United States and China is not likely, the possibility is real enough to require prudent policies and effective deterrent measures.
- The United States will likely find itself forced to shift from deterrence by denial, based on direct defense of its interests and allies in the western Pacific, to deterrence by punishment, based on the threat of escalation.
  - The United States may be able to reduce or delay reliance on escalatory responses by shifting to less vulnerable platforms: longer-range precision strike drones and vessels to carry longer-range drones and submarines, along with the further dispersal of bases and force flows.
  - The United States can encourage and assist allies and partners in the region to increase the range and capabilities of their own air and sea defenses.
  - Barring unforeseen technological developments, it will not be possible for the United States to confidently and indefinitely rely on the direct defense of its regional interests.

Find the full document at www.rand.org/t/PE248

**What’s the Potential for Conflict with China, and How Can It Be Avoided?**
James Dobbins, David C. Gompert, David A. Shlapak, and Andrew Scobell
RB-9657-A (2012)
- Presents scenarios to illustrate possible sources of military conflict with China over the next 30 years.
- Even as China becomes a near-peer competitor, armed conflict between China and the United States will be unlikely.
- To ensure this, the United States must retain its deterrent capacity and bolster the capabilities and resolve of other regional states.
- Should conflict with China occur, the economic consequences would be historically unparalleled.
- A collapse of the Democratic People's Republic of Korea is the most likely East Asia contingency, and U.S. ground forces will be essential to address it.

Find the full document at www.rand.org/t/RB9657
**War with China: Thinking Through the Unthinkable**

David C. Gompert, Astrid Stuth Cevallos, and Cristina L. Garafola

RR-1140-A (2016)

- This analysis illuminates various paths a war with China could take and their possible consequences.
- Unless both U.S. and Chinese political leaders decline to carry out counterforce strategies, the ability of either state to control the ensuing conflict would be greatly impaired.
  - Both sides would suffer large military losses in a severe conflict. In 2015, U.S. losses could be a relatively small fraction of forces committed but still significant; Chinese losses could be much heavier than U.S. losses and a substantial fraction of forces committed.
  - This gap in losses will shrink as Chinese anti-access and area denial (A2/AD) improves. By 2025, U.S. losses could range from significant to heavy; Chinese losses, while still very heavy, could be somewhat less than in 2015, owing to increased degradation of U.S. strike capabilities.
  - China's A2/AD will make it increasingly difficult for the United States to gain military-operational dominance and victory, even in a long war.
- Conflict could be decided by domestic political, international, and economic factors, all of which would favor the United States in a long, severe war.
  - Although a war would harm both economies, damage to China's would be far worse.
  - Because much of the Western Pacific would become a war zone, China's trade with the region and the rest of the world would decline substantially.
  - China's loss of seaborne energy supplies would be especially damaging.
  - A long conflict could expose China to internal political divisions.
  - Japan's increased military activity in the region could have a considerable influence on military operations.

Find the full report at www.rand.org/t/RR1140

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**Domestic Trends in the United States, China, and Iran: Implications for U.S. Navy Strategic Planning**

John Gordon IV, Robert W. Button, Karla J. Cunningham, Toy I. Reid, Irv Blickstein, Peter A. Wilson, and Andreas Goldthau

MG-729-NAVY (2008)

- To help the Navy understand how critical near-, mid-, and far-term trends in the United States, China, and Iran might influence U.S. security decisions in general and the Navy's allocation of resources in particular, RAND examined emerging nonmilitary trends in each of the three countries. The authors investigated current and projected domestic developments in the areas of demographics, economics, energy consumption, the environment, and education. They also examined each country's relations with its so-called near abroad to determine how much of a challenge each of the three nations (plus Japan and Russia) will experience in their own immediate “neighborhoods.”

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Find the full report at www.rand.org/t/MG729NAVY
• There will be less tolerance for costly, big-ticket defense projects in the United States; the Navy’s “blue-green” mix will be affected.

• China will remain the Navy’s greatest potential challenge, but Iran will continue to defy the United States in the Middle East.

• Further cooperation with key allies in the Pacific and the Greater Middle East will be required, as will an enduring defense commitment in the Middle East.

Find the full document at www.rand.org/t/MG729

A New Division of Labor: Meeting America’s Security Challenges Beyond Iraq
Andrew R. Hoehn, Adam R. Grissom, David Ochmanek, David A. Shlapak, and Alan J. Vick
MG-499-AF (2007)

• This volume draws together and integrates insights derived from a wide range of research efforts undertaken at RAND over the past few years. Some of the observations include different ways to organize and employ forces and to divide labor among them, updated insights about the natures of likely future conflicts, the need to further improve information resources, and the value of fostering partnerships among the services and with allies.

• A new U.S. grand strategy has been emerging, one that requires not only resources but patience and commitment: the promotion of democracy and freedom abroad. The U.S. armed forces will continue to be among the myriad contributors necessary to achieve this goal. In the face of increasing complexity, changing tactics, and tight budgets, the defense establishment will need to change in multiple ways, yet must also not risk its historic strengths. The authors also offer specific recommendations, such as a recommendation to the Air Force to reevaluate its concepts for large-scale power projection.

Find the full document at www.rand.org/t/MG499

Terrence K. Kelly, David C. Gompert, and Duncan Long
RR-1359-A (2016)

• The research reported here examined trends in military capabilities among potential U.S. adversaries, and the report proposes an alternative way for the United States to secure its interests.

• The United States will face heightened costs and risks in using offensive military force in critical and contested regions by 2025.

  ◦ This effect is most pronounced in the case of China and the western Pacific. Russia will also enhance its anti-access and area denial (A2/AD) capabilities to check the North Atlantic Treaty Organization’s response. Iran is and will remain a distant third in the ability to oppose projected forces, but its ability to strike soft but important targets in and around the Persian Gulf in reaction to U.S. threats will improve.
• If these trends continue, there is a growing danger that adversaries will use A2/AD as a shield behind which they can commit aggression.
  ◦ In the China and Russia cases especially, A2/AD capabilities could delay and degrade intervening U.S. ground, naval, and air forces.
  ◦ The United States’ declining ability to bring forces to bear in these regions and against these countries could have deleterious geostrategic consequences.
• As important as the ability to bring force to bear against aggressors is the type of force the United States chooses and prepares.
  ◦ Current U.S. options to maintain the ability to conduct offensive military operations in these regions are risky, and the trends are not promising.
• The decline of the United States’ ability to project offensive force warrants reconsideration of why and how the United States uses its sustainable advantages to support its interests, responsibilities, and values.
  ◦ The United States could embrace a broader concept of power projection while working with allies to develop allied A2/AD to prevent aggression, concentrating militarily on preventing enemies from projecting power under the shield of their A2/AD.

Find the full report at www.rand.org/t/RR1359

**Developing a U.S. Strategy for Dealing with China—Now and into the Future**

Terrence K. Kelly, James Dobbins, David A. Shlapak, David C. Gompert, Eric Heginbotham, Peter Chalk, and Lloyd Thrall

RB-9802-A (2014)

• This report looks at the security challenges in Asia—defined here as the U.S. Pacific Command’s area of responsibility—in 2030–2040. It examines U.S. and Chinese interests and how the U.S. Department of Defense (DoD) could help defend those interests. Within that construct, the authors explore the role that the U.S. Army would play in a DoD strategy.

• China and the United States share common global interests, but the United States is increasingly concerned that its ability to maintain regional stability will be limited or reduced by China’s growing military capabilities.

• The United States needs a strategy that balances between protecting U.S. interests in East Asia, where clashes with China’s preferences are mostly likely, and cooperating with Beijing globally, where the two sides share common interests.

• Developing such a strategy would rest on five key pillars, including the ability of the United States to deliver and sustain combat and support forces rapidly to virtually anywhere in the Western Pacific and having highly capable and reliable local allies with the ability to turn A2/AD concepts to their advantage in a conflict.

• The strategy should be robust enough to remain viable given potential alternative futures, with only modest changes.

• The strategy must improve conflict stability and help hedge against miscalculations that could lead to conflict.

• The U.S. Army would have key roles in supporting U.S. strategy in the Asia-Pacific, ones that focus on security cooperation and the ability to protect U.S. and allied bases, support the joint force, and project forces into the region.

Find the full document at www.rand.org/t/RB9802
The U.S. Army in Asia, 2030–2040
Terrence K. Kelly, James Dobbins, David A. Shlapak, David C. Gompert, Eric Heginbotham, Peter Chalk, and Lloyd Thrall
RR-474-A (2014)

• For the next 20 or more years, the U.S. relationship with China will be the fulcrum on which the East Asian security order balances. As a result, U.S. policy should seek to prevent the emergence of an overtly hostile U.S.-China relationship while hedging against the possibility that one could nonetheless emerge.

• The United States needs a strategy that recognizes shared interests with China at the global level, the real potential for friction in the Western Pacific, and the challenge of balancing the two. Developing such a strategy will be more difficult in practice than in theory.

• U.S. military strategy will need to be flexible and resilient given China's increased capabilities, which will place significant demands on the U.S. Army.

• Robust military-to-military relations between the United States and China will be a necessary part of the overall U.S. effort to improve understanding and increase transparency. The Army will play an important part in these arrangements.

• The Army will play critical roles in supporting U.S. strategy in the Asia-Pacific region.
  ○ The Army will be committed to a wide variety of partnership-building activities with friends and allies in the region.
  ○ The Army will be responsible for conducting and supporting joint military operations, which may place significantly greater demands on its combat support and combat service support forces than have recent conflicts.
  ○ The Army will need to explore ways of expanding its role in countering Chinese anti-access and area denial capabilities.

Find the full report at www.rand.org/t/RR474

The United States and a Rising China: Strategic and Military Implications
Zalmay M. Khalilzad, Abram N. Shulsky, Daniel L. Byman, Roger Cliff, David T. Orletsky, David Shlapak, and Ashley J. Tellis
MR-1082-AF (1999)

• China has been embarked on a process of reform and modernization that has led to unprecedented economic development. The goal is to make China a developed country, which would, among other things, raise the standard of living and prepare the base for a strong military. The Chinese leadership considers good relations with the United States to be strongly advisable, if not absolutely necessary, but sovereignty concerns (especially with regard to Taiwan) could cause
tensions in the Sino-U.S. relationship. China could emerge, by 2015, as a formidable power, one that might offer an alternative to the current U.S. role as the region’s preferred security partner and its ultimate security manager.

- At present, the best U.S. response appears to be a combination of engagement and containment, a congagement policy that would continue to try to bring China into the current international system while both preparing for a possible Chinese challenge to it and seeking to convince the Chinese leadership that a challenge would be difficult and extremely risky to pursue.

Find the full report at www.rand.org/t/MR1082

**Smarter Power, Stronger Partners, Volume II: Trends in Force Projection Against Potential Adversaries**

Duncan Long, Terrence K. Kelly, and David C. Gompert (eds.)

RR-1359/1-A (2017)

- This volume describes nine warfighting scenarios, some set in 2015 and some set in 2025. The principal purpose of these scenarios is to test the hypothesis that the anti-access and area denial (A2/AD) threat to U.S. force projection is growing more severe in critical regions.

- The adversaries matter, and their improving A2/AD capabilities make them significantly harder to defeat.
  - The regions and stakes in these scenarios are strategically significant, and the opponents are plausible. The posited challenges would have far-reaching consequences for the United States. Even absent a war, a shift in the perceived military balance and the likely outcome of any conflict could be damaging.
  - Such a shift is exactly what the 2015 and 2025 scenarios illustrate. The degree and consequence differ from case to case, but, in each instance, the adversaries’ A2/AD capabilities increase relative to U.S. force projection.
  - Some of the major drivers of a degraded U.S. position are the same in each scenario. Paramount among these common elements are more and more-capable ballistic and cruise missiles. Telling improvements are also made by adversaries in each scenario in intelligence, surveillance, and reconnaissance and in air defenses.

- A2/AD effectiveness declines over distance and increases over time in significant ways.
  - The adversary ability to threaten U.S. forces diminishes as distance increases from the adversary's homeland.
  - The greater the reach of an adversary's A2/AD umbrella, the abler it is to project force locally in the face of U.S. opposition.

- The U.S. response to A2/AD leads to escalation and increased strategic risk.
  - To overcome A2/AD, the United States launches extensive conventional strikes against the adversary's homeland. In general terms, this is escalatory: Regional aggression against a U.S. ally or deployed U.S. forces is met with a broad U.S. attack.

Find the full report at www.rand.org/t/RR1359z1
Dangerous Thresholds: Managing Escalation in the 21st Century
Forrest E. Morgan, Karl P. Mueller, Evan S. Medeiros, Kevin L. Pollpeter, and Roger Cliff
MG-614-AF (2008)

• Informing this analysis are the results of two modified Delphi exercises, which focused on a potential conflict between China and the United States over Taiwan.

• Escalation is a natural tendency in any form of human competition. When such competition entails military confrontation or war, the pressure to escalate can become intense due to the potential cost of losing contests of deadly force. Cold War–era thinking about escalation focused on the dynamics of bipolar, superpower confrontation and strategies to control it. Today’s security environment, however, demands that the United States be prepared for a host of escalatory threats involving not only long-standing nuclear powers, but also new, lesser nuclear powers and irregular adversaries, such as insurgent groups and terrorists. This examination of escalation dynamics and approaches to escalation management draws on historical examples from World War I to the struggle against global Jihad. It reveals that, to manage the risks of escalatory chain reactions in future conflicts, military and political leaders will need to understand and dampen the mechanisms of deliberate, accidental, and inadvertent escalation. Informing the analysis are the results of two modified Delphi exercises, which focused on a potential conflict between China and the United States over Taiwan and a potential conflict between states and nonstate actors in the event of a collapse of Pakistan’s government.

Find the full document at www.rand.org/t/MG614

Gaining Competitive Advantage in the Gray Zone: Response Options for Coercive Aggression Below the Threshold of Major War
Lyle J. Morris, Michael J. Mazarr, Jeffrey W. Hornung, Stephanie Pezard, Anika Binnendijk, and Marta Kepe
RR-2942-OSD (2019)

• The United States is entering a period of intensifying strategic competition with several rivals, most notably Russia and China. U.S. officials expect this competition to be played out primarily below the threshold of armed conflict, in what is sometimes termed the gray zone between peace and war. In this report, the authors examine how the United States might respond to Russian and Chinese efforts to seek strategic advantage through coercive actions in the gray zone, including military, diplomatic, informational, and economic tactics.

• Russian gray zone campaigns in Europe consist primarily of disinformation campaigns meant to undermine political institutions. Other tactics include the use of economic tools to extract concessions or
hold countries at risk of being coerced through an overreliance on Russian energy; the demonstration of military threats through exercises near the borders of certain states; and, in a few very extreme cases, the infiltration of Russian security forces to exert de facto control over disputed territory.

- In Northeast Asia, Japan believes that it is engaged in an increasingly high-stakes competition with China over efforts to change the status quo of territorial sovereignty and administrative control of the Senkaku Islands and nearby areas. In Southeast Asia, countries in the region have grown increasingly wary of Chinese gray zone aggression in the South China Sea. These tactics include China’s unprecedented expansion of artificial islands, as well as the use of law enforcement and maritime militia vessels in an unprofessional and escalatory manner to deter or deny the use of living and nonliving resources in the waters. Finally, China has supplemented these strategies with growing employment of economic coercion and political subversion.

- The authors’ proposed strategic concept is built around four complementary efforts: to shape a context supportive of U.S. and partner objectives over the long term; to deter a handful of very extreme forms of gray zone aggression; to dissuade the day-to-day use of more-elaborate gray zone techniques; and to sustain resilience in the lower-level, persistent competition areas.

- To implement the strategic concept, the authors propose a preliminary list of about three dozen response options for U.S. officials to consider, such as stationing permanent new military capabilities in key locations, anticipating political meddling and blunting the effects with information operations planned in advance, and denying the aggressor participation in key economic institutions.

Find the full report at www.rand.org/t/RR2942

**Chinese Responses to U.S. Military Transformation and Implications for the Department of Defense**

James C. Mulvenon, Murray Scot Tanner, Michael S. Chase, David Frelinger, David C. Gompert, Martin C. Libicki, and Kevin L. Pollpeter


- Over the past decade, Chinese military strategists have keenly observed changes in U.S. national strategy and military transformation. This report examines the constraints, facilitators, and potential options for Chinese responses to U.S. transformation efforts, especially with respect to whether Taiwan moves toward or away from formal independence. The authors focus on four areas of countertransformation options that China may pursue (which most likely would include all or portions of each strategy): Conventional Modernization “Plus”; Subversion, Sabotage, and Information Operations; Missile-Centric Strategies; and Chinese Network-Centric Warfare.

- The acceleration of its own military modernization suggests that China is not dissuaded by U.S. military prowess but instead is driven by a range of strategic and military motivations to keep pace. The path China takes will depend on its key national security goals and the political and economic context within which these goals are pursued. That said, the authors offer possible U.S. counterresponses to such courses of action (e.g., planning defensive measures, augmentation of network-centric platforms) and emphasize that the ultimate “victor” of transformation will be that nation with the best combination of surprise, error control, fortune, and highly trained people.

Find the full document at www.rand.org/t/MG340
**U.S. Military Capabilities and Forces for a Dangerous World: Rethinking the U.S. Approach to Force Planning**

David Ochmanek, Peter A. Wilson, Brenna Allen, John Speed Meyers, and Carter C. Price  
RR-1782-1-RC (2017)

- This report evaluates the capabilities of current and programmed U.S. forces to meet the demands of conflicts that could arise involving any of five potential adversaries: China, Russia, North Korea, Iran, and Salafist-jihadi groups worldwide.

- The U.S. Department of Defense (DoD) continues to use a Two Regional Wars standard for force planning, although this standard now bears little relationship to what the administration and the nation expect U.S. armed forces to be prepared to do.

- Important national interests today are being challenged by two major powers—Russia and China—that pose operational and strategic challenges that far outstrip those posed by the regional adversaries that animate DoD’s current force planning construct (FPC).

- With its growing arsenal of nuclear weapons and ballistic missiles, North Korea today presents threats for which U.S. and allied forces lack satisfactory answers.

- Although the United States and its allies and partners have made considerable headway in blunting the threat posed by al Qa’ida and its affiliates, U.S. forces must expect to be engaged in the struggle with Salafist-jihadi groups, such as ISIS, for many years to come.

- Addressing the challenges posed by the most-capable adversaries generally calls not for a larger U.S. force but rather for a force equipped with appropriate modern weapons and support assets that is also postured for responsive and resilient operations in theaters of potential conflict.

Find the full report at www.rand.org/t/RR1782-1

**Lessons from Others for Future U.S. Army Operations in and Through the Information Environment: Case Studies**

Christopher Paul, Colin P. Clarke, Michael Schwille, Jakub P. Hlavka, Michael A. Brown, Steven Davenport, Isaac R. Porche III, and Joel Harding  
RR-1925/2-A (2018)

- This collection of 12 detailed case studies reviews the information-related activities and strategic goals of a range of allies, adversaries, and potential adversaries, highlighting insights for future U.S. Army force planning.

- Harnessing the power of old and new technology, it is easier than ever for U.S. allies and adversaries to reach—and influence—vast and varied audiences to achieve their strategic goals. Modern conflicts are fought as much in the information environment as on the physical battlefield, and the line between these domains is dissolving. Less sophisticated state actors and even nonstate actors have acquired capabilities previously available only to the most advanced nations to use information power in support of their objectives. Adversaries of the United States and its allies do not operate under the same legal and ethical constraints and are free to engage in offensive cyberwarfare, disseminate propaganda, censor traditional and online media, and threaten their detractors. As it prioritizes investments in future capabilities, the U.S. Army stands to benefit from an examination of the evolution of allied and adversary information campaigns, as well as their successes, failures, and potential future directions.
A companion volume, *Lessons from Others for Future U.S. Army Operations in and Through the Information Environment*, presents a comparative analysis of the cases, highlighting the capability areas in which others excel to guide the Army in either adopting or countering these practices and principles. Find the full report at [www.rand.org/t/RR1925z2](www.rand.org/t/RR1925z2)

**The Role of Southeast Asia in U.S. Strategy Toward China**

Richard Sokolsky, Angel Rabasa, and C. Richard Neu

MR-1170-AF (2001)

- The authors examine the role of regional states in developing a hedge against the possible emergence of an overly aggressive China.

- China’s geopolitical ambitions and growing military capabilities and the Southeast Asian states’ perceptions of a rising China will play a crucial role in shaping the future of Southeast Asia and the U.S. military posture in the region. The authors examine the role of regional states in developing a hedge against the possible emergence of an overly aggressive China. They find that rather than confronting a conventional attack, the United States and the Southeast Asian countries are likely to find a continuation of China’s creeping irredentism and ambiguous threats. Southeast Asia is likely to prove a critical testing ground for a third way of dealing with China’s rising power—what in other RAND work has been called a policy of congagement—that seeks to integrate China into the international system while both deterring and preparing for a possible Chinese challenge. The report recommends that the United States adopt an incremental approach to this hedging strategy, focusing on peacetime military engagement with Southeast Asian states, development of a more robust and diversified network of access arrangements, and strengthened military ties with the Philippines, Singapore, Thailand, Malaysia, Indonesia, and Vietnam.

Find the full report at [www.rand.org/t/MR1170](www.rand.org/t/MR1170)


Scott W. Harold, Derek Grossman, Brian Harding, Jeffrey W. Hornung, Gregory Poling, Jeffrey Smith, and Meagan L. Smith

RR-3125-MCF (2019)

- This report highlights the extent to which regional actors’ security initiatives are a response to the perceived threat posed by a rising, assertive China. This report also calls attention to the strong support that the United States continues to enjoy across the region, with numerous actors expanding their security partnerships out of a desire to reinforce the existing regional order centered on a set of U.S. alliances so as to help share the burdens of security maintenance. The analysis points out the importance of understanding the diverse motivations that regional actors have for expanding and deepening their regional security partnerships, and it highlights key areas for building partner capacity. Finally, the authors clarify which aspects of deepening security relationships derive from concerns about China and which stem from considerations other than balancing.
• History, identity, and norms shape defense cooperation.
  ◦ Prior experience with colonization has left a legacy of sensitivity to alliance, perceived loss of autonomy, or dependence on a foreign power.
  ◦ Post–World War II identities are changing (e.g., Japan and South Korea).
  ◦ A country’s identity as a great or rising power (e.g., India, Japan, and South Korea) is important.

• State capacity and military capabilities are key drivers.
  ◦ The resources devoted to external military cooperation can empower or constrain defense ties with a country’s regional partners.
  ◦ Training, exercises, and exchanges can build critically important personal relationships.

• Counterterrorism, intelligence sharing, and cyber and maritime law enforcement are paving the way for expanded cooperation.
  ◦ There is substantial sensitivity in the region to being perceived as cooperating more deeply in the military and security domains when framed as a reaction to China’s growing power and assertiveness.
  ◦ Countries have deepened security links by starting with or building up from counterterrorism cooperation.
  ◦ In Southeast Asia, counterpiracy efforts and cooperative efforts to counter illegal fishing, drug trafficking, and human smuggling provide routes for deepening security cooperation.

• Deepening ties with nonaligned partners is a worthy goal.
  ◦ Deepening ties may facilitate a greater alignment with the United States if other Asian countries, such as Japan, South Korea, or the Philippines, take the lead in deepening ties with such countries as India, Indonesia, and Vietnam.

Find the full report at www.rand.org/t/RR3125

The U.S.-Japan Alliance and Deterring Gray Zone Coercion in the Maritime, Cyber, and Space Domains

Scott W. Harold, Yoshiaki Nakagawa, Junichi Fukuda, John A. Davis, Keiko Kono, Dean Cheng, and Kazuto Suzuki

CF-379-GOJ (2017)

• The United States and Japan face a dilemma: China is trying to change the status quo in the Indo-Pacific without firing a shot, gradually shifting the strategic playing field through the employment of gray zone coercion, or coercive moves that lie below the threshold that would trigger a military response. China’s actions in the maritime, cyber, and (potentially) space domains challenge the status quo in ways that damage the interests of both Japan and the United States and are intended to erode trust in U.S. extended deterrence commitments.

• The authors collectively find that the challenges the allies face, although difficult, are not insuperable and require Washington and Tokyo to deter gray zone coercion through four interrelated steps.

• First, the allies must stigmatize gray zone coercion through the use of their considerable norm-setting power and international institutional influence.

• Second, they should reduce the “anonymity” or “gryness” of the various domains in which China or other actors seek to carry out gray zone coercion by enhancing the sharing of information and intelligence to as great a degree as possible as a way to clarify command-and-control relationships between agents and their principals.
• Third, Washington and Tokyo need to maintain conventional preeminence, investing in the ability to deter by denying an adversary, such as China, the outcomes it seeks by defeating any efforts at gray zone or conventional coercion.

• Finally, should an adversary seek to carry out gray zone coercion, the authors suggest that the allies also need the ability to deter through punishment, imposing costs on any actor who seeks to coerce them (after the attempt at coercion has been turned back) so as to reinforce the lesson that such efforts carry consequences in other military domains or in economic, political, diplomatic, informational, legal, or institutional areas.

Find the full document at www.rand.org/t/CF379

**Missiles for Asia? The Need for Operational Analysis of U.S. Theater Ballistic Missiles in the Pacific**

Jacob L. Heim

RR-945-A (2016)

• The durability of the Intermediate-Range Nuclear Forces (INF) Treaty is in doubt.
  - The U.S. Department of State has concluded that Russia is in violation of its obligations under the treaty.
  - The United States remains committed to the treaty and seeks to encourage Russia to return to compliance by eliminating prohibited systems. The prospects are unclear; attempts to revive the treaty could take several years.
  - It is too soon for the United States to decide to withdraw from the treaty, but it is still worth examining the benefits and risks of adding conventional land-based theater ballistic missiles (TBMs) to the U.S. force structure.

• China’s rapid military modernization could threaten U.S. forces.
  - Land-based, conventionally armed precision ballistic and cruise missile systems have been a focus area for modernization.
  - Chinese TBMs could play a key enabling role in counterintervention campaigns.

• TBMs offer some potential benefits.
  - TBMs might provide negotiating leverage in new arms-control negotiations.
  - TBMs can be survivable, can strike quickly, and can penetrate many defenses.
  - Development risks are likely lower for TBMs than for other candidate technologies.

• But the benefits must be weighed against the potential risks.
  - Land-based TBMs would require regional access agreements, which may be difficult to obtain.
  - TBMs are more expensive than some alternatives, such as cruise missiles, and could be slow to deploy into rapidly evolving crises.
  - The characteristics of TBMs make it difficult to reassure adversaries that they will not be used in surprise attacks on leadership or other sensitive targets, potentially undermining structural stability and crisis management.

Find the full report at www.rand.org/t/RR945
China’s Air Force Enters the 21st Century
Kenneth W. Allen, Glenn Krumel, and Jonathan D. Pollack

- An assessment of the future of China’s air force.
- The Chinese People’s Liberation Army Air Force (PLAAF) does not constitute a credible offensive threat against the United States or its Asian allies, and this situation will not change dramatically over the coming decade. If anything, its overall capabilities relative to most of its potential rivals will diminish over the next ten years.

Find the full report at www.rand.org/t/MR580

Assessing the Training and Operational Proficiency of China’s Aerospace Forces: Selections from the Inaugural Conference of the China Aerospace Studies Institute (CASI)
Edmund J. Burke, Astrid Stuth Cevallos, Mark R. Cozad, and Timothy R. Heath
CF-340-AF (2016)

- During June 2015, the China Aerospace Studies Institute (CASI), in conjunction with Headquarters, United States Air Force, held its inaugural conference titled “Assessing Chinese Aerospace Training and Operational Competence.” This volume contains revised versions of three of the papers presented.
- PRC Leadership Dynamics Shaping the Future of the PLA Air Force: Examining the Party’s Military Reform Efforts examines the effect that leadership priorities and the composition of the Central Military Commission might have on People’s Liberation Army Air Force (PLAAF) influence, bureaucratic leverage, and force development goals. Trends in PLA Air Force Joint Training: Assessing Progress in Integrated Joint Operations examines the factors and concepts driving PLAAF joint training and evaluates the PLAAF’s progress toward achieving this critical component of its long-term modernization objectives. Finally, New Type Support: Developments in PLAAF Air Station Logistics and Maintenance details extensive PLAAF efforts to reform Chinese logistics and maintenance systems.

Find the full document at www.rand.org/t/CF340

China’s Incomplete Military Transformation: Assessing the Weaknesses of the People’s Liberation Army (PLA)
Michael S. Chase, Jeffrey Engstrom, Tai Ming Cheung, Kristen Gunness, Scott W. Harold, Susan Puska, and Samuel K. Berkowitz
RR-893-USCC (2015)

- This report seeks to answer several important questions regarding the state of China’s armed forces. What have been the overall scope and scale of People’s Liberation Army (PLA) modernization since the mid-1990s, and what is its likely trajectory through 2025? What are the missions Beijing has assigned to the PLA? What are the weaknesses in the PLA’s organization and human capital? What are the weaknesses in the PLA’s combat capabilities in the land, air, maritime, space, and electromagnetic domains? What are the weaknesses in China’s defense industry (research and development and production)?
• The People’s Liberation Army (PLA) is becoming more professional and more capable.
  ◦ The PLA’s capabilities aimed at deterring or, if necessary, countering U.S. military intervention in the Asia-Pacific region, including systems designed to hold U.S. military bases, aircraft carriers, space systems, and computer networks at risk have improved markedly.

• This transformation is, however, incomplete.
  ◦ Chinese military media and PLA books and journal articles discuss the PLA’s problems at length.
  ◦ The PLA’s senior leadership speaks of the “two incompatibles,” perceived gaps between current PLA capabilities and the demands of winning a local war under informatized conditions and successfully executing the PLA’s other missions.

• PLA’s organizational structure and human capital issues are sources of concern.
  ◦ The PLA’s organizational structure appears to be an obstacle to its reaching the level of joint operations to which it aspires.
  ◦ The human capital shortcomings include such problems as insufficient education and technical proficiency and rampant corruption.

• The PLA also has shortfalls in its combat capabilities.
  ◦ PLA publications highlight shortcomings in joint operations capabilities, training, and combat support and combat service support functions.
  ◦ PLA is concerned about the integration of increasingly complex weapons and equipment, the associated training, the level of mastery of critical capabilities, insufficient numbers of key enablers and protecting China’s growing interests in space and the electromagnetic spectrum.
  ◦ China’s defense industry still suffers from several problems that have yet to be resolved, including widespread corruption, lack of competition, delays and cost overruns, and quality control issues.

Find the full report at www.rand.org/t/RR893

**Emerging Trends in China’s Development of Unmanned Systems**
Michael S. Chase, Kristen Gunness, Lyle J. Morris, Samuel K. Berkowitz, and Benjamin Purser
RR-990-OSD (2015)

• RAND undertook exploratory analysis to lay an initial foundation for future research on China’s development and use of unmanned systems, including unmanned aerial vehicles (UAVs), unmanned undersea vehicles (UUVs), and unmanned surface vessels (USVs).

• Unmanned vehicles with intelligence capabilities could improve Chinese long-distance targeting.
  ◦ UAVs paired with an enhanced satellite network would improve China’s capability for long-range strike system targeting.

• Unmanned vehicles with surveillance and reconnaissance capabilities could play a growing role in monitoring territorial disputes at sea.
  ◦ Establishment or improvement of unmanned-vehicle support infrastructure in disputed areas could promote escalation of conflict. Chinese thinking on this issue seems unclear at the moment.
• As China develops and improves its unmanned-vehicle system production, it is poised to become a global exporter of such systems.
  ◦ Low pricing and lack of export restrictions could make China the top global source of unmanned vehicle systems for many countries in the market for UAV capability.
  ◦ China already has a deal to produce UAVs for Saudi Arabia.

Find the full report at www.rand.org/t/RR990

Ready for Takeoff: China’s Advancing Aerospace Industry
Roger Cliff, Chad J. R. Ohlandt, and David Yang
MG-1100-UCESRC (2011)

• This report assesses China’s aerospace capabilities and the extent to which China’s participation in commercial aerospace markets and supply chains is contributing to the improvement of those capabilities. It examines China’s commercial aviation manufacturing capabilities, its commercial and military capabilities in space, Chinese government efforts to encourage foreign participation in the development of China’s aerospace industry, transfers of foreign aerospace technology to China, the extent to which U.S. and other foreign aerospace firms depend on supplies from China, and the implications of these issues for U.S. security interests.

• China’s aerospace industry has advanced at an impressive rate over the past decade, partly due to the increasing participation of its aerospace industry in the global commercial aerospace market and the supply chains of the world’s leading aerospace firms. China’s current ability to meet demand with indigenous aircraft is limited, however, and much of the demand will be filled by imported aircraft. China’s space capabilities have improved rapidly, on the other hand, and it has developed and deployed an increasingly wide range of satellites. China’s growing civilian aerospace capabilities are unquestionably contributing to the development of its military aerospace capabilities, but whether the United States could significantly improve its security through alterations of its policy toward civil aerospace cooperation with China without having a significant negative effect on its own economic interests is unclear.

Find the full document at www.rand.org/t/MG1100

Shaking the Heavens and Splitting the Earth: Chinese Air Force Employment Concepts in the 21st Century
Roger Cliff, John F. Fei, Jeff Hagen, Elizabeth Hague, Eric Heginbotham, and John Stillion
MG-915-AF (2011)

• Less than a decade ago, China’s air force was an antiquated service equipped almost exclusively with weapons based on 1950s-era Soviet designs and operated by personnel with questionable training according to outdated employment concepts. Today, the People’s Liberation Army Air Force (PLAAF) appears to be on its way to becoming a modern, highly capable air force for the 21st century.

• This monograph analyzes publications of the Chinese military, previously published Western analyses of China’s air force, and information available in published sources about current and future capabilities of the
PLAAF. It describes the concepts for employing forces that the PLAAF is likely to implement in the future, analyzes how those concepts might be realized in a conflict over Taiwan, assesses the implications of China implementing these concepts, and provides recommendations about actions that should be taken in response.

Find the full document at www.rand.org/t/MG915

The Military Potential of China’s Commercial Technology
Roger Cliff
MR-1292-AF (2001)

- China's economy is expected to grow over the next 20 years at a rate that will make it larger than the U.S. economy at the end of that period. This suggests that China has the economic potential to be a U.S. military rival by the year 2020. But can it become such a rival? At present, China's military hardware is largely based on 1950s Soviet technology. To produce weaponry technologically comparable to U.S. weaponry by 2020, China would have to improve its technological capabilities through internal, defense-industry efforts and/or other avenues: direct transfers of military technology from abroad, imports of components and equipment, and diffusion from China's civilian industries. Of these three, the third (diffusion from civilian industries) is the most promising over the long run. This report explores this option, examining China's current commercial technology in eight industries (microelectronics, computers, telecommunications equipment, nuclear power, biotechnology, chemicals, aviation, and space) that have the most potential for supporting military technology development, and assessing the prospects for technological progress (in terms of capabilities, effort, incentives, and institutions) over the next ten to twenty years.

- Although China's military will not be the U.S. military's technological equal by 2020, the U.S. still must prepare for a Chinese military whose capabilities will steadily advance in the next ten to twenty years, perhaps developing capabilities in certain niches that will present difficulties for the U.S. military in some potential-conflict scenarios.

Find the full report at www.rand.org/t/MR1292

The Effectiveness of China’s Industrial Policies in Commercial Aviation Manufacturing
Keith Crane, Jill E. Luoto, Scott W. Harold, David Yang, Samuel K. Berkowitz, and Xiao Wang
RR-245 (2014)

- This report explores the emerging commercial aviation manufacturing industry in China to examine the effectiveness of the policies and mechanisms the Chinese government has used to create “national champions;” evaluate the effectiveness of the steps taken by foreign manufacturers to prevent transfers of key technologies to potential future Chinese competitors when setting up manufacturing facilities in China; provide policy options that allow foreign governments to effectively respond to Chinese industrial policies; and alert Chinese policymakers to the downsides of China’s current industrial policies.
• The Chinese government views aviation manufacturing as a priority.
  ◦ Designing and manufacturing passenger jets is seen as an indicator of the nation’s technological prowess.
  ◦ Aviation manufacturing is also seen as driving economic growth and innovation.
• Foreign companies see benefits to investing in China—carefully.
  ◦ Foreign companies benefit from interacting with China by providing support to Chinese customers, cultivating a competitive source of parts, and generating sales to Chinese airlines.
  ◦ Because of the way the agreements operate, foreign companies are careful to protect intellectual property and technologies.
  ◦ Foreign manufacturers say continued innovation is key to preventing emergence of Chinese competitors.
• China’s commercial aviation manufacturing industry is still developing.
  ◦ The planes currently in development are not likely to be competitive when finally realized. The Chinese government will then have to invest heavily in developing a new round of planes that might be more competitive.
  ◦ It is possible that China will be more successful in general aviation, building smaller aircraft for private or charter use.
• Foreign competitors struggle with negotiating agreements with China.
  ◦ If China succeeds in penetrating the commercial aviation manufacturing market, other countries may want to consider several policy options.
  ◦ China also should consider the opportunity costs of its policies and whether to pursue more market-oriented policies.
Find the full report at www.rand.org/t/RR245

**Modernizing China’s Military: Opportunities and Constraints**
Keith Crane, Roger Cliff, Evan S. Medeiros, James C. Mulvenon, and William H. Overholt
MG-260-1-AF (2005)

• To help the U.S. Air Force assess the resources the government of the People’s Republic of China is likely to spend on its military over the next two decades, this study projects future growth in Chinese government expenditures as a whole and the military in particular, evaluates the current and likely future capabilities of China’s defense industries, and compares likely future Chinese expenditures on defense with recent expenditures by the United States and the U.S. Air Force.
• Although economic growth in China is destined to slow, output will still triple by 2025. In addition, government reforms hold the promise of improving the weak performance of China’s defense industries. Although the researchers’ high-end forecast of military expenditures is based on the assumption that the Chinese government would be able to spend 5.0 percent of GDP on defense, they believe that pressures within China to increase social spending on health care, pensions, education, and the environment, coupled with the costs of paying the
Chinese government’s liabilities, make it more likely that military spending will not rise above 2.3 percent of GDP. Using a combination of projected market and purchasing power parity exchange rates, the authors forecast that Chinese military spending is likely to rise from an estimated $69 billion in 2003 to $185 billion by 2025—approximately 61 percent of what the Department of Defense spent in 2003.

Find the full document at www.rand.org/t/MG260-1

**Forecasting China’s Military Spending Through 2025**
Keith Crane, Roger Cliff, Evan S. Medeiros, James C. Mulvenon, and William H. Overholt
RB-162-AF (2005)

- RAND Project AIR FORCE (PAF) assessed three trends and provided projections of China’s potential military expenditures through 2025.
- Projections show that China could increase military spending substantially.
  - China’s defense industry is still technologically backward but is improving rapidly. Reforms such as open bidding for materials have been introduced to encourage innovation and efficiency. These trends will continue if the Chinese government continues to push reforms and increase defense spending. These factors suggest that China will have the economic and technological wherewithal to increase its military capabilities substantially in the next two decades. PAF’s projection of the most likely level of future military spending through 2025 puts China’s military spending at the equivalent of $185 billion (in 2001 dollars) in 2025, roughly three-fifths of U.S. defense spending in 2003. Between 2003 and 2025, Chinese expenditures (in U.S. dollars) on procurement and research and development are projected to more than double.

Find the full document at www.rand.org/t/RB162

**China’s Quest for Energy Security**
Erica Strecker Downs
MR-1244-AF (2000)

- This report looks at the measures that China is taking to achieve energy security and the motivations behind those measures.
- China’s two decades of rapid economic growth have fueled a demand for energy that has outstripped domestic sources of supply. China became a net oil importer in 1993, and the country’s dependence on energy imports is expected to continue to grow over the next 20 years, when it is likely to import some 60 percent of its oil and at least 30 percent of its natural gas. China thus is having to abandon its traditional goal of energy self-sufficiency—brought about by a fear of strategic vulnerability—and look abroad for resources. The author concludes that these activities are designed, in part, to reduce the vulnerability of China’s energy supply to U.S. power. China’s international oil and gas investments, however, are unlikely to bring China the energy security it desires. China is likely to remain reliant on U.S. protection of the sea-lanes that bring the country most of its energy imports.

Find the full report at www.rand.org/t/MR1244
Domestic Trends in the United States, China, and Iran: Implications for U.S. Navy Strategic Planning

John Gordon IV, Robert W. Button, Karla J. Cunningham, Toy I. Reid, Irv Blickstein, Peter A. Wilson, and Andreas Goldthau

MG-729-NAVY (2008)

- To help the Navy understand how critical near-, mid-, and far-term trends in the United States, China, and Iran might influence U.S. security decisions in general and the Navy’s allocation of resources in particular, RAND examined emerging nonmilitary trends in each of the three countries. The authors investigated current and projected domestic developments in the areas of demographics, economics, energy consumption, the environment, and education. They also examined each country’s relations with its so-called near abroad to determine how much of a challenge each of the three nations (plus Japan and Russia) will experience in their own immediate “neighborhoods.”

- There will be less tolerance for costly, big-ticket defense projects in the United States; the Navy’s “blue-green” mix will be affected.

- China will remain the Navy’s greatest potential challenge, but Iran will continue to defy the United States in the Middle East.

- Further cooperation with key allies in the Pacific and the Greater Middle East will be required, as will an enduring defense commitment in the Middle East.

Find the full document at www.rand.org/t/MG729

Domestic Factors Could Accelerate the Evolution of China’s Nuclear Posture

Eric Heginbotham, Michael S. Chase, Jacob L. Heim, Bonny Lin, Mark R. Cozad, Lyle J. Morris, Christopher P. Twomey, Forrest E. Morgan, Michael Nixon, Cristina L. Garafola, and Samuel K. Berkowitz

RB-9956-AF (2017)

- China appears to be moving from a modest strategy of minimum deterrence toward a more robust strategy of assured retaliation. This brief focuses on three internal factors that could influence China’s nuclear direction.

- The following domestic drivers are likely to accelerate China’s nuclear modernization over the coming decade:
  - increased bureaucratic influence over nuclear force planning and policymaking
  - elevation of nuclear constituencies within the People’s Liberation Army
  - lack of organizational firewalls to prevent advances in conventional capability from influencing nuclear force structure

Find the full document at www.rand.org/t/RB9956
A New Direction for China’s Defense Industry
Evan S. Medeiros, Roger Cliff, Keith Crane, and James C. Mulvenon
MG-334-AF (2005)

- This study assesses trends in China’s 25-year-long effort to reform its defense industry.
- Since the early 1980s, a prominent and consistent conclusion drawn from research on China’s defense-industrial complex has been that China’s defense-production capabilities are rife with weaknesses and limitations. This study argues for an alternative approach: From the vantage point of 2005, it is time to shift the focus of current research to the gradual improvements in and the future potential of China’s defense-industrial complex. The study found that China’s defense sectors are designing and producing a wide variety of increasingly advanced weapons that, in the short term, are relevant to a possible conflict over Taiwan but also to China’s long-term military presence in Asia. Part of a larger RAND Project AIR FORCE study on Chinese military modernization, this study examines the current and future capabilities of China’s defense industry.

Find the full document at www.rand.org/t/MG334

Patenting and Innovation in China: Incentives, Policy, and Outcomes
Eric Warner
RGSD-347 (2015)

- This dissertation examines these three questions in three separate essays: (1) What are the drivers of this patenting boom, and what implications exist for Chinese technical innovation? (2) What are the innovative impacts of the Indigenous Innovation Policy, which is designed to promote patenting? (3) How innovative are leading Chinese firms?
- Patent-promoting policies, market competition, and low review standards associated with utility patents drive large volumes of patents.
- Market competition and raising patent review thresholds are more likely to drive higher quality patents.

Find the full document at www.rand.org/t/RGSD347

China’s Expanding Role in Global Mergers and Acquisitions Markets
Charles Wolf, Jr., Brian G. Chow, Gregory S. Jones, and Scott Harold
MG-1162-CAPP (2011)

- This monograph evaluates recent and proposed Chinese foreign investment. It aims to improve understanding of China’s foreign investment patterns and strategy and considers how U.S. national security might be compromised as well as how the United States and China can benefit from such investment.
The authors conclude that both risks and benefits are important to assess in evaluating the effects of increased Chinese investment. They urge analysts to track Chinese investments through a “wider lens,” comparing patterns of investment in the United States with patterns elsewhere to gain a greater understanding of Chinese investment.

Find the full document at www.rand.org/t/MG1162

**Fault Lines in China’s Economic Terrain**
Charles Wolf, Jr., K. C. Yeh, Benjamin Zycher, Nicholas Eberstadt, and Sungho Lee

This report evaluates recent and proposed Chinese foreign investment. It aims to improve understanding of China’s foreign investment patterns and strategy and considers how U.S. national security might be compromised and how the United States and China can benefit from such investment. It provides a method for assessing national security risks and benefits, compares Chinese investment patterns in the United States with those of other U.S. investors, compares Chinese investment patterns in the United States with Chinese investment patterns elsewhere, and draws conclusions from its findings.

The authors show that these patterns are distinctive, selective, and flexible. They conclude that both risks and benefits are important to assess in evaluating the effects of increased Chinese investment. They urge analysts to track Chinese investments through a “wider lens,” comparing patterns of investment in the United States with patterns elsewhere to gain a greater understanding of Chinese investment.

Find the full report at www.rand.org/t/MR1686

**China and India, 2025: A Comparative Assessment**
Charles Wolf, Jr., Siddhartha Dalal, Julie DaVanzo, Eric V. Larson, Alisher Akhmedjonov, Harun Dogo, MeiLinda Huang, and Silvia Montoya
MG-1009-OSD (2011)

This monograph focuses on the progress China and India seem likely to achieve from 2010 through 2025 in four domains: demography, macroeconomics, science and technology, and defense spending and procurement. In each domain, the authors seek answers to these questions: Who is ahead? By how much? and Why?

China and India, the world’s two most populous countries, will exercise increasing influence in international affairs in the coming decades, and each country’s role on the world stage will be affected by the progress that it makes and by the competition and cooperation that develop between them.

Find the full document at www.rand.org/t/MG1009
The Chinese Air Force's First Steps Toward Becoming an Expeditionary Air Force

Cristina L. Garafola and Timothy R. Heath

RR-2056-AF (2017)

- As China’s economic, diplomatic, and security interests continue to expand, the People’s Liberation Army (PLA) and, in particular, its aerospace forces (including its air force, naval aviation, and space capabilities) will require more robust power projection and expeditionary capabilities on par with China’s expanding global footprint. In addition to traditional security concerns (e.g., Taiwan and maritime territorial disputes), such issues as countering terrorism, humanitarian assistance/disaster relief, and sea-lane protection have now become factors in the PLA’s training, doctrine, and modernization efforts. Command of space—including the military use of outer space—is also of increasing interest to the PLA as it seeks to develop new capabilities and operating concepts to support its growing range of military missions.

- This report focuses on the PLA Air Force's (PLAAF's) initial steps toward becoming an expeditionary air force, a development that will have important implications for the reach of China’s military and its ability to protect China's emerging overseas interests.

- Nonwar, peacekeeping, and foreign missions have informed the PLAAF of its limitations.
  - Domestic experiences, such as participation in the 2008 Sichuan earthquake rescue effort, helped the PLAAF improve its abilities to navigate across vast distances, exercise command and control, and anticipate logistics and maintenance needs at remote locations.
  - The first international exercise involving PLAAF participation overseas was Peace Mission 2007.
  - The PLAAF has also carried out relief efforts to other countries as well as its first noncombatant evacuation operation involving the use of military aircraft to evacuate Chinese citizens from Libya in 2011.
  - The PLAAF has recently expanded its role in foreign military exchanges by attending international air shows and air competitions beginning in 2013 and 2014, respectively.

Find the full report at www.rand.org/t/RR2056

Training the People’s Liberation Army Air Force Surface-to-Air Missile (SAM) Forces

Bonny Lin and Cristina L. Garafola

RR-1414-AF (2016)

- This report analyzes key trends and themes in China’s People’s Liberation Army Air Force (PLAAF) surface-to-air missile (SAM) unit training. After providing background information on China’s air defense forces, the report introduces the basics of PLAAF SAM training, including training requirements, trends in recent training activities, and analysis of training themes.

- Based on this research, we found that PLAAF SAM units are improving their capabilities, although progress is uneven and capabilities may vary significantly between similarly equipped units. Based on data collected on PLAAF SAM training activities, the intensity of SAM training varies across China’s former seven military regions. SAM units near the capital area and in the coastal regions appear to be most active. SAM units follow a yearly training cycle, with training peaking during the summer and early fall. Contentwise, PLAAF
SAM units are engaging in more realistic and challenging combat training compared with the training in the mid-2000s. They have increased the duration and difficulty of their training, continue to emphasize denial and deception tactics, and focus significant efforts on countering low- and extreme-low-altitude targets. SAM units are engaging in substantial mobility and night training, but they face logistical hurdles that undercut their ability to rapidly move to operating locations and safety concerns that hinder their ability to engage in difficult and sophisticated training. There is limited joint and combined-arms training, but units appear to be moving beyond simple altitude de-confliction toward sharing data, employing more sophisticated target identification methods, and coordinating firepower with aviation units.

Find the full report at www.rand.org/t/RR1414

From Theory to Practice: People’s Liberation Army Air Force Aviation Training at the Operational Unit

Lyle J. Morris and Eric Heginbotham
RR-1415-AF (2016)

- This report seeks to assess Chinese People’s Liberation Army Air Force (PLAAF) pilot proficiency by examining training held at operational aviation units in the context of the larger PLAAF training system. The first section analyzes the hierarchy of PLAAF training guidance. The second section examines the PLAAF training system for pilots prior to their arrival at their operational units, to include an examination of the theoretical and practical methods of instruction. The third section covers the transition to the PLAAF operational aviation unit and the content of unit training to include an analysis of the PLAAF annual training cycle. The fourth section addresses the development and training of instructor pilots at the unit level. The final section seeks to evaluate the operational competency and weaknesses within the PLAAF aviation training system.

- The PLAAF is using elements of actual combat to transform its training system and improve operational effectiveness.
  - Senior PLAAF leaders have redoubled their efforts at instilling discipline and offering honest assessments of shortcomings across all levels of aviation unit training.
  - The PLAAF is professionalizing unit training through adherence to less-scripted, combat-realistic training that trains for the battlefield, not for the test.
  - There has been a clear increase in the degree of difficulty of training subjects and scenarios that have been stipulated by the PLAAF Party Committee.

- Significant barriers still exist for development.
  - When compared with its U.S. Air Force counterpart, clear deficiencies remain among PLAAF pilots in the area of combat tactics and skills.
  - Institutional impediments run deep in a military that has remained an army-centric fighting force for decades.
  - Concepts involving joint command and control across different branches within the PLAAF itself and across the army, navy, and air force are underdeveloped.

Find the full report at www.rand.org/t/RR1415
Overview of People’s Liberation Army Air Force “Elite Pilots”
Michael S. Chase, Kenneth W. Allen, and Benjamin Purser
RR-1416-AF (2016)

This report uses Chinese primary sources to provide an overview of how the Chinese People’s Liberation Army Air Force (PLAAF) selects and trains what it calls its elite fighter pilots. The PLAAF identifies three groups of pilots as elite pilots. The first comprises 33 pilots who have won the annual Golden Helmet competition at the Dingxin Test and Training Base in Gansu province since 2011; the Golden Helmet is “the supreme contest among Chinese fighter pilots.” The second group comprises pilots who belong to the PLAAF’s Bayi Aerobatics Team, created in 1962. The third comprises six Su-30 attack pilots, including one Golden Helmet winner, who competed in Russia’s Aviadarts 2014 competition for the first time. Although each of the three groups competes using existing flight procedures, the lessons learned are reviewed extensively for ways to change existing tactics and combat methods. For example, one of the most important lessons learned has been the PLAAF’s desire to move toward less scripted training, which Chinese sources typically refer to as “unrestricted air combat” or “free air combat” training. Official Chinese media reports on the PLAAF’s Golden Helmet competition, its participation in the Russian Aviadarts competition, and the Bayi Aerobatics Team’s participation in air shows in Russia in 2013 and Malaysia in 2015 appear to reflect a desire on the part of the PLAAF to project a more open and confident image at home and abroad. In 2014, the PLAAF implemented a Golden Dart competition to identify elite ground attack and bomber crews.

- The PLAAF’s emphasis on the development of fighter “tactics” and “combat methods” and its approach to developing these three groups of elite pilots signifies its determination to pursue further professionalization and enhance the competence of its pilots.

- This professionalization and enhancement of competence is no less important to the PLAAF than the modernization of its aircraft, weapons, and equipment.

Find the full report at www.rand.org/t/RR1416
**CHINESE ENGAGEMENT AND COMPETITION WITH OTHERS**

**China’s Military Activities in the East China Sea: Implications for Japan’s Air Self-Defense Force**

Edmund J. Burke, Timothy R. Heath, Jeffrey W. Hornung, Logan Ma, Lyle J. Morris, and Michael S. Chase  
RR-2574-AF (2018)

- The authors examine how China has stepped up its surface and air activities near Japan, particularly near the Senkaku Islands.
  - China and Japan have experienced a dramatic increase in nonlethal encounters between military aircraft near Japan.
  - Chinese military aircraft have flown with increasing frequency near the Senkaku Islands and the Miyako Strait, which Chinese strategists regard as a critical passageway through the first island chain.
  - The higher rate of activity has spurred Japan to adjust deployments and increase its acquisitions to keep pace with the growing Chinese presence and defend what Japan views as its airspace.
- Military improvements are Japan’s most significant effort to push back on China’s increased air activities.
  - The Japanese government has prioritized a defense posture more focused on the region and the procurement of assets meant to strengthen the capabilities of the Japanese Self-Defense Force (JASDF) in island defense.
  - It has also increased the Japan Coast Guard (JCG) budget and established a JCG patrol unit tasked specifically with patrolling the Senkaku Islands.
- The stress of constantly responding to the Chinese air activities has added pressure to an already overstretched JASDF.
  - The increased operational tempo exacerbates maintenance issues, as the frequency with which aircraft require inspections and maintenance is increasing.
  - Although the real-world experience that JASDF pilots are gaining is useful, the increased incursions into Japanese airspace are also negatively impacting pilot training, because pilots are unable to devote this time to the study of other missions.

Find the full report at www.rand.org/t/RR2574

**China’s Arms Sales: Motivations and Implications**

Daniel Byman and Roger Cliff  
MR-1119-AF (1999)

- China’s arms sales have become the focus of considerable attention and pose a moderate threat to U.S. interests. Although Chinese sales have fallen in recent years, and Beijing has become more responsible in the transfer of nuclear, biological, and chemical (NBC) technologies, much progress will be needed to curtail China’s behavior. Principal recipients of Chinese arms have been Iran, Iraq, Myanmar, North Korea, Pakistan, and Thailand. These countries and others seek Chinese weapons because they are available,
cheap, and easy to use and maintain. In addition to missiles, the Chinese are willing to transfer NBC technology. The United States and other countries do have a modest ability to influence Chinese behavior, and China has increasingly wished to be viewed as a responsible world nation.

- The analysis supports three major findings about China's arms sale behavior: (1) China's arms transfers not motivated primarily to generate export earnings but by foreign policy considerations; (2) China's government has more control over transfers than some have reported: its weapons export system is quite centralized; and (3) China's adherence to international nonproliferation norms is in fact increasing. Nevertheless, Washington must hedge against the likelihood of sales and develop offsets in concert with allies.

Find the full report at www.rand.org/t/MR1119

**The Evolving Israel-China Relationship**

Shira Efron, Howard J. Shatz, Arthur Chan, Emily Haskel, Lyle J. Morris, and Andrew Scobell

RR-2641-RC (2019)

- In this report, RAND researchers discuss the growing relationship and the challenges it poses for Israel and for Israel's most important ally, the United States. The report concludes with two recommendations for Israel and one for the United States.

- The China-Israel relationship provides both countries with important opportunities.
  - China's primary objectives in Israel are acquiring advanced technology and utilizing Israel's location for trade connectivity.
  - China wants to sustain its relationship with Israel while continuing to enjoy good relations with countries in the Arab and Muslim worlds, particularly Iran.
  - Israel seeks to expand its diplomatic and economic ties with the world's fastest growing major economy and diversify its export markets and sources of investments.

- The relationship could cause Israel's interests to diverge from those of the United States.
  - China's engagement with the Israeli tech sector could upset Washington, especially in light of growing trade tensions between the United States and China.

- China's construction and operation of key infrastructure projects in Israel raise political and security concerns.
  - The acquisition of Israeli companies and the knowledge generated through academic cooperation could enable China to gain crucial technologies, with insufficient returns for Israel.
  - Chinese installation of and access to cameras, radio, fiber-optics, and cellular networks raise cybersecurity, data privacy, and espionage risks.
  - Chinese involvement in commercial ports adjacent to Israeli naval bases raises security concerns for Israel and possibly the United States.

Find the full report at www.rand.org/t/RR2641
Beyond Rivalry and Camaraderie: Explaining Varying Asian Responses to China

John F. Fei
RGSD-279 (2011)

This dissertation assesses the security and economic policy responses of a representative sample of Asian states to China between 1992 and 2008.

The findings of this dissertation bear on both the study and practice of international security policy. Domestic politics and state preferences are important factors to consider when explaining the responses of Asian states to China, responses that would not have been implied by the consideration of external threats alone. Understanding the determinants of Asian nations’ different and evolving preferences for the ratio of economic versus military strength will aid U.S. officials in formulating policies that affirm these states’ strategic interests.

Find the full document at www.rand.org/t/RGSD279

China’s Long-Range Bomber Flights: Drivers and Implications

Derek Grossman, Nathan Beauchamp-Mustafina, Logan Ma, and Michael S. Chase
RR-2567-AF (2018)

This report examines the key drivers behind China’s strategic bomber flights throughout the Asia-Pacific region, assessing Chinese commentary on flights and leveraging various sources, including interviews in Taipei and Tokyo, to better understand and gauge regional reactions.

Given the multiple benefits derived from long-range strategic bomber flights over the Asia-Pacific region, whether in the area of conventional strategic signaling, realistic training opportunities, coercion of Taiwan, or propaganda for domestic consumption, the United States should expect that Beijing will continue to pursue—and even ramp up—these activities for the foreseeable future.

Chinese president Xi Jinping’s intent is to modernize and professionalize the People’s Liberation Army into a “world-class” force that aligns with his vision of a stronger, “rejuvenated” China, and this virtually guarantees that the Chinese People’s Liberation Army Air Force will enjoy generous top leadership support in the coming years.

The U.S. Air Force and other decisionmakers tasked with handling the U.S. response to the bomber flights should not expect to be able to dissuade Chinese leaders from continuing down this path.

China’s next-generation long-range strategic bomber, dubbed the H-20, is expected to enter service in the 2020s and will likely have the range to reliably threaten U.S. targets beyond the Second Island Chain, including Guam and Hawaii. Its likely nuclear capability could have implications for U.S. extended deterrence and for assurance of U.S. allies and partners in the region.

Going forward, the key objective for the United States and its allies and partners should be to determine how to mitigate any negative effects of Chinese bomber flights, which appear set to become an increasingly regular occurrence in the region.

Find the full report at www.rand.org/t/RR2567
**China in Africa: Implications of a Deepening Relationship**
Larry Hanauer and Lyle J. Morris
RB-9760-OSD (2014)

- In an effort to characterize the dynamic nature of Chinese-African relations, RAND researchers took a comprehensive look at Chinese and African objectives in the political and economic spheres and the means by which they work to achieve their goals.
- China is attracted to Africa by its natural resources and export markets, while African leaders hope Chinese engagement brings economic development.
- Africans’ reactions to Chinese involvement have been mixed: Government officials have been overwhelmingly positive, while other elements of African societies criticize China for what they see as an exploitive, neo-colonial approach.
- China has met skepticism with attempts at sustainable development and win-win commercial deals and with a range of soft-power tools to improve its image.
- U.S. and Chinese goals in Africa do not necessarily conflict, and the engagement of both economic powers could be advantageous to Africans.

Find the full document at www.rand.org/t/RB9760

**Chinese Engagement in Africa: Drivers, Reactions, and Implications for U.S. Policy**
Larry Hanauer and Lyle J. Morris
RR-521-OSD (2014)

- The authors focus on (1) Chinese and African objectives in the political and economic spheres and how they work to achieve them, (2) African perceptions of Chinese engagement, (3) how China has adjusted its policies to accommodate often-hostile African responses, and (4) whether the United States and China are competing for influence, access, and resources in Africa and how they might cooperate in the region.
- China has four overarching strategic interests in Africa: access to natural resources, particularly oil and gas; markets for Chinese exports; political legitimacy; and sufficient security and stability to continue its commercial activities.
- African governments look to China to provide political recognition and legitimacy and to contribute to their economic development through aid, investment, infrastructure development, and trade.
- Chinese engagement in Africa has had some positive effects: job creation, the development of critically needed infrastructure, and an increase in economic growth, particularly in sectors or geographic areas in which international financial institutions and Western governments and companies have been unwilling to engage.
Chinese engagement has also had deleterious effects: It has helped nondemocratic regimes cling to power; reinforced many African countries’ dependence on raw materials and unskilled labor; contributed to the loss of hundreds of thousands of manufacturing jobs in certain industries, such as textiles; and contributed to high levels of debt, economically unviable decisions, and official corruption.

African leaders and governments generally portray Chinese engagement as positive.

Opinion polls show that Africans hold generally positive views of China, but public opinion of China is also negatively affected by perceptions that Chinese investment contributes to corruption, waste, poor working conditions, and job displacement.

To better foster sustainable, long-term relationships in Africa, China has increased its efforts to develop soft power (media, culture, and people-to-people exchanges) and provide more aid in areas such as health, sustainability, and security.

Washington and Beijing do not compete directly against each other for strategic access or influence in Africa.

There has been relatively little Sino-U.S. cooperation in Africa, and opportunities for greater cooperation are limited.

Greater American commercial engagement in African markets could generate competition for Chinese entities that would both benefit African countries and advance U.S. interests.

Find the full report at www.rand.org/t/RR521

China and Iran: Economic, Political, and Military Relations
Scott W. Harold and Alireza Nader
OP-351-CMEPP (2012)

This paper examines factors driving Chinese-Iranian cooperation, potential tensions in the Chinese-Iranian partnership, and U.S. policy options for influencing this partnership to meet U.S. objectives.

Over the past several years, China has become Iran’s number one oil customer and trading partner.

China has provided Iran with the technological know-how to develop its energy resources. Chinese engineers have also built bridges, dams, railroads, and tunnels throughout Iran.

China has aided Iran’s efforts to modernize its military hardware and doctrine through the transfer of military technology and sales of small arms and tactical ballistic and antiship cruise missiles.

China has assisted in the development of Iran’s nuclear program via the transfer of technology and machinery.

China’s economic ties to Iran have shielded the Iranian regime from the effects of international sanctions.

Chinese-Iranian relations are rooted in both countries’ having authoritarian regimes and historical narratives that characterize the international system as unjust and dominated by Western powers.

The Iranian regime views China as a potential ally against the United States, and Beijing views Iran as a potential partner for limiting U.S. influence in the Middle East.

The foundations of the economic partnership between Iran and China are Iran’s abundant energy resources and China’s growing energy needs, but China is not overwhelmingly dependent on the Islamic Republic for its energy needs; in contrast, the Iranian regime now depends on China as its chief diplomatic protector.

Despite their energy cooperation, trade, and shared geopolitical interests, Iran and China have potentially divergent interests on various issues.

Find the full document at www.rand.org/t/OP351
Countering China’s Efforts to Isolate Taiwan Diplomatically in Latin America and the Caribbean: The Role of Development Assistance and Disaster Relief

Scott W. Harold, Lyle J. Morris, and Logan Ma

RR-2885-TECRO (2019)

- This report that, on the whole, Taiwan’s assistance to the governments of Latin America and the Caribbean is well-received, improving desired outcomes (such as enhancing local livelihoods, and contributing to greater resilience and more rapid disaster recovery and relief.
- Continued substantial funding and high-level leadership attention from Taiwan are critical to the effective employment of aid and assistance as a tool in Taipei’s foreign policy kit.
- It is important for Taiwan to emphasize repeatedly that it offers assistance as a partnership with recipient countries, not a top-down transfer of infrastructure (which is more characteristic of China’s approach to development aid).
- The effectiveness of Taipei’s aid and assistance programs would be bolstered by more explicitly building these into a framework that recognizes that such aid programs are merely one component of the broader relationships Taiwan has with its diplomatic partners in the region.
- Taiwan cannot be certain whether it will be able to successfully hold onto its diplomatic partnerships in Latin America and the Caribbean under all circumstances.

Find the full report at www.rand.org/t/RR2885

Pacific Currents: The Responses of U.S. Allies and Security Partners in East Asia to China’s Rise

Evan S. Medeiros, Keith Crane, Eric Heginbotham, Norman D. Levin, Julia F. Lowell, Angel Rabasa, and Somi Seong

MG-736-AF (2008)

- China’s economic, military, and diplomatic power has been on the rise, and many worry that it is nudging aside U.S. influence in the Asia-Pacific region. To explore this issue, the authors examined six specific U.S. allies and partners—Australia, Japan, the Philippines, Singapore, South Korea, and Thailand. From extensive in-country interviews, trade and poll data, etc., they examined the responses in each nation to China’s rise and assessed the implications for U.S. regional security interests. The six nations see China primarily as a source of economic opportunity, but many have concerns about China’s regional goals. They want China to be engaged regionally in productive ways but do not want to allow it to become dominant.
- They find U.S. security commitments reassuring, bolstering their ability to engage China with confidence. The six nations clearly want U.S. involvement in the region to continue—but sometimes only in certain ways, at certain times, and on particular issues. Thus, they are pulling China closer for the economic opportunities it offers and the United States closer for the general reassurance that its long-standing power and influence provide.

Find the full document at www.rand.org/t/MG736
China in the Middle East: The Wary Dragon

Andrew Scobell and Alireza Nader

RR-1229-A (2016)

• This report examines China's interests in the region and assesses China's economic, political, and security activities in the Middle East to determine whether China has a strategy toward the region and what such a strategy means for the United States.

• China has adopted a “wary dragon” strategy toward the Middle East.
  ◦ China exhibits wariness in its engagement with the Middle East. China endeavors to protect its expanding interests by not taking sides in conflicts and controversies.
  ◦ China avoids the public articulation of a Middle East policy or strategy and the making of hard commitments to any states beyond what is required to maintain cordial business relations and pragmatic diplomatic and security ties.

• China has four key interests in the Middle East.
  ◦ Energy security and economic stakes seem to be China's paramount interests.
  ◦ China is also concerned with its geostrategic posture. China seeks to balance against U.S. influence in the Middle East, but China does not actively oppose the United States.
  ◦ China wants to ensure domestic tranquility, which involves quashing any public criticism of Chinese policies, notably with regard to Chinese Muslims and the Uighurs of Xinjiang.
  ◦ China aims to enhance its great-power status.

• China does not pose a threat to U.S. interests in the region.
  ◦ China is correcting what has tended to be a lopsided eastward overemphasis in terms of economic development and national security protection.
  ◦ China's rebalance is neither a reaction to the Obama administration's own rebalance nor a new phenomenon.
  ◦ China and the United States have overlapping interests in the Middle East—both desire stability and unfettered access to energy.
  ◦ Maintaining a modicum of stability in the region requires the vigorous efforts of outside powers. This is a role that China has not been willing or able to play. The United States is the primary actor fulfilling this role, and, for the foreseeable future, China seems amenable to this.
  ◦ Although China sees itself as locked in a great-power rivalry with the United States, it desires to maintain an overall climate of cordial and cooperative U.S.-Chinese relations.

Find the full report at www.rand.org/t/RR1229
At the Dawn of Belt and Road: China in the Developing World
Andrew Scobell, Bonny Lin, Howard J. Shatz, Michael Johnson, Larry Hanauer, Michael S. Chase, Astrid Stuth Cevallos, Ivan W. Rasmussen, Arthur Chan, Aaron Strong, Eric Warner, and Logan Ma
RR-2273-A (2018)

- Analysis of China's political and diplomatic, economic, and military engagement with the Developing World, region by region, focusing on the 21st century through the beginning of the Belt and Road Initiative. Authors show that China has oriented its security concerns and its overall engagement in concentric circles of importance. Near neighbors merit the most attention. Authors conclude with policy implications for the United States.

- China's involvement with the Developing World encompasses political and diplomatic, economic, and military dimensions.
  - The Developing World offers China economic growth and global influence.
  - Beijing has a growing challenge of protecting overseas citizens and investments.
  - Southeast Asia is China's top priority economically and politically.

- China's geostrategic relationships with pivotal states focus on anticipated bilateral and regional benefits.
  - China sees benefits in Malaysia (economic), Indonesia (political), Thailand (trustworthiness), and Vietnam (geostrategic risk).
  - Russia concentrates on military activities and shares China's interests in countering terrorism and Western ideas of democracy and human rights.
  - Pakistan assists China in internal security.
  - Iran offers China a friend not beholden to the United States.
  - The Republic of South Africa has a strong financial sector and rule of law.
  - Venezuela's oil deposits have been attractive.

- Consequences of the Chinese strategy toward the Developing World for the United States.
  - Washington and Beijing are contentious over Chinese activities in the South China Sea and China's insistence that U.S. military vessels and aircraft get permission prior to traversing disputed waters.
  - Outside Southeast Asia, the United States and China appear to be partners in parallel: two states working separately with no collaboration but in pursuit of similar ends. Their relationship varies significantly by region.
  - China is not an adversary but can harm U.S. global interests. A challenge remains as to whether and how to encourage China to act as a cooperative partner.

Find the full report at www.rand.org/t/RR2273
China’s Strategy Toward South and Central Asia:
An Empty Fortress
Andrew Scobell, Ely Ratner, and Michael Beckley
RR-525-AF (2014)

- This report analyzes what is driving China’s Central Asia and Afghanistan-Pakistan policies, identifies China’s overarching strategy, examines the extent of Chinese activities in the region, and assesses their implications for the United States.

- Four drivers of China’s Central Asia policy:
  - Beijing is consumed by insecurity and the goals of ensuring domestic stability and protecting national unity. China is especially preoccupied with suppressing internal unrest among ethnic minorities in its western regions.
  - Beijing is driven to maintain peace, predictability, and secular governments in the countries of Central Asia, because it fears linkups between internal challenges and external threats, notably the Uighur Diaspora that spills across national borders.
  - China seeks to increase influence in Central Asia and thereby limit the influence of other powers.
  - China seeks to promote its economic interests in Central Asia and enhance energy security.

- China’s relations with Afghanistan and Pakistan:
  - China has friendly relations with Afghanistan and has become the largest investor in the country, but it has been a bystander to Western military activities in the country.
  - Pakistan is probably China’s closest and most enduring ally of the past half-century, but its strategic importance to China has decreased since the end of the Cold War.
  - The future of Chinese influence in both these countries is uncertain.

- China’s Empty Fortress strategy and its implications for the United States:
  - China’s westernmost regions are poorly defended and vulnerable to internal dissent and external threats. China has boldly projected an image of considerable strength in these regions to mask serious frailty—known as an “Empty Fortress” stratagem in the annals of Chinese history.
  - China’s Empty Fortress strategy is exemplified by its promotion of the Shanghai Cooperation Organization (SCO), which consists of China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan. The SCO gives the outward appearance of potency and activism but is in fact a loose collection of states incapable of resolute collective action.
  - Currently, China is not a major threat to U.S. interests in Central Asia, Afghanistan, or Pakistan and is unlikely to pose one in the near future.

Find the full report at www.rand.org/t/RR525

The Role of Southeast Asia in U.S. Strategy Toward China
Richard Sokolsky, Angel Rabasa, and C. Richard Neu
MR-1170-AF (2001)

- The authors examine the role of regional states in developing a hedge against the possible emergence of an overly aggressive China.
- China’s geopolitical ambitions and growing military capabilities and the Southeast Asian states’ perceptions of a rising China will play a crucial role in shaping the future of Southeast Asia and the U.S. military posture.
in the region. The authors examine the role of regional states in developing a hedge against the possible emergence of an overly aggressive China. They find that rather than confronting a conventional attack, the United States and the Southeast Asian countries are likely to find a continuation of China's creeping irredentism and ambiguous threats. Southeast Asia is likely to prove a critical testing ground for a third way of dealing with China's rising power—what in other RAND work has been called a policy of engagement—that seeks to integrate China into the international system while both deterring and preparing for a possible Chinese challenge. The report recommends that the United States adopt an incremental approach to this hedging strategy, focusing on peacetime military engagement with Southeast Asian states, development of a more robust and diversified network of access arrangements, and strengthened military ties with the Philippines, Singapore, Thailand, Malaysia, Indonesia, and Vietnam.

Find the full report at www.rand.org/t/MR1170

**Chinese Economic Coercion Against Taiwan: A Tricky Weapon to Use**
Murray Scot Tanner
MG-507-OSD (2007)
- This monograph analyzes the political impact of the rapidly growing economic relationship between China and Taiwan and evaluates the prospects for Beijing to exploit it by employing economic coercion against Taipei. The author evaluates Taiwan's potential economic vulnerability to efforts by the Chinese to cut off or disrupt key aspects of the cross-strait relationship and analyzes the challenges that China has faced in its efforts to convert this raw, potential economic influence into effective political leverage.
- Taiwan and China now rely on each other for important contributions to their respective economies, and each would suffer great economic pain and dislocation in the event of a major disruption in that relationship, but Taiwan is far more dependent on mainland China than mainland China is dependent on Taiwan. The author argues that, although Taiwan’s growing dependence is a source of genuine concern, China has encountered serious problems in exploiting the economic weapon to coerce Taiwan. The monograph closes by exploring the potential impact of cross-strait economic diplomacy on U.S. policy interests in the Taiwan Strait.

Find the full document at www.rand.org/t/MG507

**China’s Expanding African Relations: Implications for U.S. National Security**
Lloyd Thrall
RR-905-A (2015)
- The report pays particular attention to geostrategic competition in Africa, potential security threats, and opportunities on the continent.
- A range of stakeholders and interests drive contemporary Chinese behavior in Africa.
  - China's government and commercial actors have three primary economic interests in Africa: a source for natural resource imports, a growing and relatively underutilized market for exports and investment, and an opportunity for Chinese firms to increase employment and gain global experience.
China’s principal political interests in Africa include bolstering China’s international image and influence, isolating Taiwan, countering problematic international norms, and supporting the stability of economic partners.

China’s emerging security interests in Africa are driven by Beijing’s larger interests in safeguarding economic development and increasing political influence. Its foremost emerging security interest is protecting the growing number of citizens and assets from internal instability, popular backlash, terrorism, and kidnapping.

- China’s engagement with Africa has changed dramatically over the past ten years and will likely continue to do so.
  - The explosive economic growth of the previous decade should slow as Chinese growth slows and the surge of capital released by the “Go Global” policy subsides. Beijing may have to navigate issues of debt sustainability with African states if economic ties do not balance.
  - Significant mismanagement of security crises in Africa could put Beijing’s domestic legitimacy and its principles of foreign noninterference in tension. While not likely in the next decade, Beijing could create a minimally invasive capability for reacting to crises, evacuating citizens, and securing assets in Africa.
  - The United States and China share fundamental interests in the stability of African states and functioning markets as a prerequisite for the economic benefits, deepening relationships, and global leadership image that each hopes to develop.

- It is important that the United States keep perspective on Chinese activities in Africa.
  - Recent Chinese engagement in Africa has been driven primarily by economic rather than national security considerations.
  - It is possible that Chinese investment in African economies and infrastructure has produced greater benefits for African stability and prosperity than the negative effects of Beijing’s opposition to Western political norms and displacement of some indigenous industries.
  - U.S. statements comparing the worst of Chinese practices with the best of U.S. ideals suggest to Africans that American leaders are misinformed or ill-intentioned.
  - The depth and effects of Sino-American disagreement over pariah states are often overstated.

Find the full report at www.rand.org/t/RR905

**The Role of Economic Development Zones in National Development Strategies: The Case of China**

Xiao Wang

RGSD-320 (2013)

- These findings provide policymakers with lessons learned from China and ways to use zones as a successful tool to accelerate growth in economic output and exports.

- Economic development zones (EDZs) have generated a substantial share of China’s industrial output, value added, and exports and attracted a large share of foreign direct investment (FDI). Increases in these outputs from EDZs have contributed substantially to China’s economic growth. Based on a systematic review of the historical data and policies for EDZs in China, this report creates a unique classification system for the development path of these zones and identified four distinct phases.
• After the 2008 tax reform, 10–14 percent less FDI flowed into the zones relative to the other areas in their host cities. The results differ to some extent across zones.

• EDZs have been able to partially offset the effects of the 2008 change in tax policy.

Find the full document at www.rand.org/t/RGSD320

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**China’s Foreign Aid and Government-Sponsored Investment Activities: Scale, Content, Destinations, and Implications**

Charles Wolf, Jr., Xiao Wang, and Eric Warner

RR-118 (2013)

• This report analyzes trends in Chinese foreign direct investment abroad and make predictions about future engagement.

• Because Chinese economic growth depends on supplies of natural resources, especially energy-related resources, much of China’s foreign aid has sought to expand supplies of such resources.

• Newly pledged aid from China was $124.8 billion in 2009, $168.6 billion in 2010, and $189.3 billion in 2011—all far above the $1.7 billion it pledged in 2001.

• Latin America received more aid than any other region between 2001 and 2011.

• In Africa, aid has been focused on a mix of natural resource programs and infrastructure.

• Middle East countries have received aid aimed at debt forgiveness, oil and gas projects, and railway construction.

• Aid in South Asia has focused on infrastructure and financial aid.

• Central Asia received relatively little aid. Most assistance was offered to fund oil, natural gas, and mining projects.

• Aid to East Asia reflected a more balanced approach than those taken in other regions, with a primary focus on infrastructure.

• Whether the scale of China’s aid will increase, decrease, or remain the same in coming years is unclear.

• Facing slower economic growth, some policymakers in China may seek to maintain or even increase aid as a valuable stimulus for exports.

• If China’s industrial demands for natural resources continue to grow, China may have incentives to expand supplies through aid agreements with developing countries and regions.

• Competing claimants on domestic, government-financed resources may view reductions of aid as a way to free resources to meet these other claims.

Find the full report at www.rand.org/t/RR118
The Military Potential of China’s Commercial Technology

Roger Cliff

MR-1292-AF (2001)

- China’s economy is expected to grow over the next 20 years at a rate that will make it larger than the U.S. economy at the end of that period. This suggests that China has the economic potential to be a U.S. military rival by the year 2020. But can it become such a rival? At present, China’s military hardware is largely based on 1950s Soviet technology. To produce weaponry technologically comparable to U.S. weaponry by 2020, China would have to improve its technological capabilities through internal, defense-industry efforts and/or other avenues: direct transfers of military technology from abroad, imports of components and equipment, and diffusion from China’s civilian industries. Of these three, the third (diffusion from civilian industries) is the most promising over the long run. This report explores this option, examining China’s current commercial technology in eight industries (microelectronics, computers, telecommunications equipment, nuclear power, biotechnology, chemicals, aviation, and space) that have the most potential for supporting military technology development, and assessing the prospects for technological progress (in terms of capabilities, effort, incentives, and institutions) over the next 10 to 20 years.

- Even though China’s military will not be the U.S. military’s technological equal by 2020, the United States still must prepare for a Chinese military whose capabilities will steadily advance in the next ten to twenty years, perhaps developing capabilities in certain niches that will present difficulties for the U.S. military in some potential-conflict scenarios.

Find the full report at www.rand.org/t/MR1292

Getting to Yes with China in Cyberspace

Scott W. Harold, Martin C. Libicki, and Astrid Stuth Cevallos

RR-1335-RC (2016)

- Can the United States and China achieve meaningful outcomes through formal negotiations over norms and rules in cyberspace? And, if so, what areas are most likely to yield agreement and what might be exchanged for what?

- Chinese and U.S. views of cybersecurity have very little overlap.
  - The United States and China have very different perspectives on cyberspace. The United States emphasizes extending the rule of law internationally. China stresses the maintenance of state sovereignty.
  - The most important U.S. interest on the bilateral agenda is for China to eliminate espionage for commercial gain and modulate its other cyber-espionage activities. The hack of the Office of Personnel Management was a particular sore point.
  - Within the bilateral relationship, the United States places more importance on cyberspace issues than China does. Chinese behavior in cyberspace is often the top item on the bilateral agenda; U.S. behavior in cyberspace rarely makes China’s top-ten list.
Avoiding targeting or carrying out espionage on critical infrastructure provides prospects for negotiating a set of norms.

- The Chinese appear interested in norms against countries attacking one another’s critical infrastructure. They also understand that such a norm would also have to forbid espionage against critical infrastructure (distinguishing espionage from implanting attacks is very hard).
- The United States believes it can catch Chinese cheating and would like some process by which cheating, once discovered, is acknowledged—with possible consequences to follow.
- The Chinese believe they are unlikely to catch cheating by the United States and are apprehensive of any agreement that would put them at a corresponding disadvantage.
- Any serious agreement would need a process that both sides could trust and may require some way to increase China’s confidence it is own attribution capabilities.

Find the full report at www.rand.org/t/RR1335

**China’s Evolving Nuclear Deterrent: Major Drivers and Issues for the United States**

Eric Heginbotham, Michael S. Chase, Jacob L. Heim, Bonny Lin, Mark R. Cozad, Lyle J. Morris, Christopher P. Twomey, Forrest E. Morgan, Michael Nixon, Cristina L. Garafola, and Samuel K. Berkowitz

RR-1628-AF (2017)

- This report includes a description of the evolution of Chinese nuclear policy and an analysis of future trends.
- China’s approach to nuclear deterrence has been broadly consistent since its first nuclear test in 1964.
  - China has, however, recently accelerated nuclear force–building and modernization.
- Chinese nuclear strategists still key primarily on nuclear developments in the United States.
  - Strategists are especially concerned about the development of U.S. missile defenses and conventional prompt global strike capabilities.
  - But planners are also concerned about the growth of nuclear inventories in Asia and the complex nuclear dynamics emerging there.
  - Some strategists say privately that China might not accept a push from India for nuclear parity, should New Delhi embark on such a course.
- Bureaucratic processes and politics are likely to affect the development of Chinese nuclear forces and thinking.
  - Civilian leaders are reportedly less involved than they once were in the details of decisionmaking about nuclear research, development, and production.
  - The nuclear constituency within the PLA is also gaining increased status and voice.
  - There is no firewall between China’s conventional and nuclear missile forces, and technologies and practices developed for the former are already being applied to the nuclear forces.
  - In the future, this may give China some limited counterforce capability.
China is likely to increase emphasis on nuclear deterrence and nuclear forces in the coming years.

- Although unlikely to change formal policy formulations, China may adjust its definitions of key terms or add caveats.
- It may, for example, hedge its language on no-first-use to include a conventional attack on its nuclear forces as “first use,” thus permitting a nuclear response.

Find the full report at www.rand.org/t/RR1628

**Domestic Factors Could Accelerate the Evolution of China’s Nuclear Posture**

Eric Heginbotham, Michael S. Chase, Jacob Heim, Bonny Lin, Mark R. Cozad, Lyle J. Morris, Christopher P. Twomey, Forrest E. Morgan, Michael Nixon, Cristina L. Garafola, and Samuel K. Berkowitz

RB-9956-AF (2017)

- China appears to be moving from a modest strategy of minimum deterrence toward a more robust strategy of assured retaliation. This brief focuses on three internal factors that could influence China’s nuclear direction.
- The following domestic drivers are likely to accelerate China’s nuclear modernization over the coming decade:
  - increased bureaucratic influence over nuclear force planning and policymaking
  - elevation of nuclear constituencies within the People’s Liberation Army
  - lack of organizational firewalls to prevent advances in conventional capability from influencing nuclear force structure

Find the full document at www.rand.org/t/RB9956

**Facing the Missile Challenge: U.S. Strategy and the Future of the INF Treaty**

David W. Kearn, Jr.

MG-1181-TSF (2012)

- The report attempts to explore and illuminate some potential responses of critical international actors, such as Russia, China, and America’s NATO and East Asian allies, to fully understand the expected costs that may be incurred over time.
- It appears to make little sense for the United States to withdraw from the INF Treaty.
  - Despite the existence of other regional threats, only the challenge of China’s expansive missile forces would seem to warrant the consideration of an in-kind response by the United States.
  - Given the potentially stringent requirements and significant costs of a new conventional IRBM program, alternative existing and future programs may prove more operationally flexible and cost-effective.
  - Two states that have had previously questionable records in the proliferation arena—Russia and China—may have fewer concerns about maintaining robust export controls on missile technologies, and engage in further proliferation.
  - The perpetuation of the INF Treaty reinforces global trends that have limited the number of states with intermediate-range missile capabilities.
- U.S. withdrawal would likely also seriously undermine the Missile Technology Control Regime.
Such a move would mark a dramatic reversal of the more cooperative policies of the Obama administration and the progress toward resetting the U.S.-Russia relationship as exemplified by the New Strategic Arms Reduction Treaty (START) treaty. It also is likely to be most controversial in Europe, where it has visibly contributed to stability and security.

- The INF Treaty has clearly contributed to the security and stability of regions critical to U.S. national interests, most importantly Europe, and thus provides clear, if often taken-for-granted benefits for the United States.
  - At the same time, a U.S. decision to unilaterally withdraw from the INF Treaty or cooperatively dissolve the treaty with Russia, could be viewed as destabilizing and create real challenges for America’s allies in the East Asia region.

Find the full document at www.rand.org/t/MG1181

**Ramifications of DARPA’s Programming Computation on Encrypted Data Program**

Martin C. Libicki, Olesya Tkacheva, Chaoling Feng, and Brett Hemenway

RR-567-OSD (2014)

- RAND was asked to evaluate whether Programming Computation on Encrypted Data (PROCEED) program—which expands the knowledge base of the global cryptographic community—is likely to provide more benefits to the United States than it does to its global rivals.

- Given government approval of PROCEED technologies, their diffusion will be more rapid in China than in Russia.
  - The research team examined the correlation between different types of trust and online searches for information about data encryption, information security, and data protection in Russia and China.
  - In China, the demand for information about data encryption is higher in regions with lower levels of interpersonal trust.
  - In Russia, the demand for information about data protection and information security is higher in regions with lower levels of trust toward the government and law enforcement officials.
  - This suggests that the diffusion of PROCEED technologies in China will be stimulated by cultural factors, which remain persistent over time, and in Russia by popular attitudes toward authorities, which are less resilient.
  - In both countries, the governments tightly regulate the encryption technology markets.

- Whether PROCEED technologies will be adopted in the face of associated processing penalties is difficult to determine at this time.
  - Although the prospect of being able to combine data from multiple parties or use third-party services while keeping data protected is an attractive one, there are many alternatives to using PROCEED that allow potential customers to make a range of trade-offs between economics and security.
  - Nevertheless, there are many use cases for which PROCEED may be favored.

- If PROCEED is adopted, it is likely to be adopted more rapidly in the United States (and similar developed countries) than it is in Russia and China.
  - Primarily, this is because PROCEED is compatible with the U.S. political culture.
  - Secondly, it is because it better accords to the U.S. business environment.

Find the full report at www.rand.org/t/RR567
**Chasing the Dragon: Assessing China’s System of Export Controls for WMD-Related Goods and Technologies**

Evan S. Medeiros

MG-353 (2005)

- This monograph examines the structure and operation of the Chinese government’s system of controls on exports of items that could be used in the production of weapons of mass destruction (WMD) and WMD-related delivery systems.

- China’s export controls on sensitive equipment, materials, and technologies used to produce WMD have evolved significantly since the early 1980s. The author identifies the key organizations involved in export control decisionmaking, the laws and regulations that form the basis of the Chinese government’s system of controls, and the interactions among government organizations involved in vetting sensitive exports. The author assesses the strengths and weaknesses of the system’s ability to implement and enforce government export controls and identifies several challenges that the Chinese government currently faces in improving the current functioning of its nascent export control system.

Find the full document at www.rand.org/t/MG353

**Deterrence and First-Strike Stability in Space: A Preliminary Assessment**

Forrest E. Morgan

MG-916-AF (2010)

- Space stability is a fundamental U.S. national security interest. Unfortunately, that stability may be eroding. Potential enemies understand the high degree to which space systems enhance U.S. conventional warfighting capabilities, and a growing number of them are acquiring the ability to degrade or destroy those systems. However, the risk is not the same for all space systems in all types of crises or at all levels of war. Some systems are more vulnerable than others, and different types of attacks offer different cost-benefit payoffs to attackers. Therefore, each space system has a different threshold at which efforts to deter attacks on it could fail.

- The United States can raise the thresholds of deterrence failure in crises and at some levels of limited war by implementing a coordinated national space deterrence strategy designed to operate on both sides of a potential adversary’s cost-benefit decision calculus simultaneously. This strategy should begin with a national space policy that declares that the United States will punish space aggressors in ways, times, and places of its choosing. The United States should also take steps to reduce the benefits an enemy might expect to gain in attacking U.S. space systems. Future research will determine the most effective and affordable mix of strategies, policies, and systems for strengthening space deterrence.

Find the full document at www.rand.org/t/MG916
**The Creation of the PLA Strategic Support Force and Its Implications for Chinese Military Space Operations**

Kevin L. Pollpeter, Michael S. Chase, and Eric Heginbotham  
RR-2058-AF (2017)

- This report explores the missions and organization of China’s military space enterprise, focusing on the organizational structure of the People’s Liberation Army (PLA) Strategic Support Force (SSF).
- A major part of China’s reform of its military was the creation in 2015 of the SSF, a new organization designed to better integrate space, cyber, and electronic warfare capabilities into PLA operations.
- The SSF appears to be a unique organization tasked with the inherently joint mission of supporting all services with its space, cyber, and electronic warfare capabilities.
- The SSF’s command, control, communications, computers, intelligence, surveillance and reconnaissance capabilities enable the PLA to effectively conduct joint operations and successfully prosecute “system vs. system” warfare, which it characterizes as essential to winning modern wars.
- The SSF appears to be charged with launching and operating China’s satellite architecture, carrying out the co-orbital counterspace mission involving satellite-on-satellite attacks, and perhaps other counterspace missions.
- Creation of the SSF made one organization responsible for the development of the PLA’s space and information warfare forces to better integrate their capabilities into a joint force.
- Information warfare, including space warfare, long identified by PLA analysts as a critical element of warfare, appears to have entered a period of significant development that could critically affect U.S. military operations.

Find the full report at www.rand.org/t/RR2058

**Fighting Shadows in the Dark: Understanding and Countering Coercion in Cyberspace**

Quentin E. Hodgson  
RR-2961-OSD (2019)

- The authors of this report explore how four nation-states—Russia, China, Iran, and North Korea—have used cyber operations, and whether that use constitutes cyber coercion.
- Cyber operations intended to coerce are a small subset of overall cyber operations globally.
- Espionage remains the predominant purpose of states’ cyber operations.
- Russian cyber operations appear to have had some coercive intent in Ukraine and Montenegro.
- Chinese cyber operations show a continued focus on espionage, but potentially with some coercive intent as a secondary objective.
- Iranian cyber operations appear more focused on retaliating against regional neighbors and the West rather than serving a direct coercive purpose.
- North Korea has routinely engaged in coercive acts in the physical world and sees cyber operations as another means to coerce others.
- The assessment of these cases indicates how the threat, threat actor, and the desired change in behavior are often unclear or ambiguous, although this ambiguity does not appear to prevent countries from pursuing these coercive campaigns.

Find the full report at www.rand.org/t/RR2961
Additional Reference
