

PLA Military Modernization: Drivers, Force Restructuring, and Implications

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Testimony of Cortez A. Cooper III¹
The RAND Corporation²

Before the U.S.-China Economic and Security Review Commission

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Under Xi Jinping, the Chinese Communist Party (CCP) has launched the most extensive restructuring of China's national defense establishment since the reforms of the 1980s under Deng Xiaoping. While Xi's predecessors, Jiang Zemin and Hu Jintao, made significant contributions to People's Liberation Army (PLA) strategy, doctrine, and force modernization, the changes underway since early 2016 are far more ambitious in terms of aligning China's military prowess with its regional and global interests. Xi's principal objective in restructuring is to ensure the absolute loyalty of the PLA to the CCP and to Xi personally as the party's paramount leader. His organizational and structural changes, if successful, also address major command, control, and operational deficiencies that have plagued the PLA for decades.³ Xi sees both objectives as essential to reinforcing CCP control and guiding China's ascendance as a great, global power. Xi refers to this broader grand strategic vision as the "Chinese Dream."

In Xi's explanation, the Chinese Dream is "the goal of completing the building of a wealthy, powerful, democratic, civilized, and harmonious socialist modernized nation" by the 100th anniversary of the People's Republic of China in 2049.⁴ Interim goals to achieving the "dream" are encapsulated in a set of policy objectives to be achieved by 2021 (the centennial of the CCP's

¹ The opinions and conclusions expressed in this testimony are the author's alone and should not be interpreted as representing those of the RAND Corporation or any of the sponsors of its research.

² The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest.

³ Michael S. Chase, Jeffrey Engstrom, Tai Ming Cheung, Kristen Gunness, Scott Warren Harold, Susan Puska, and Samuel K. Berkowitz, *China's Incomplete Military Transformation: Assessing the Weaknesses of the People's Liberation Army (PLA)*, Santa Monica, Calif.: RAND Corporation, RR-893-USCC, 2015.

⁴ "Xi Jinping Addresses Exhibition on China's Renaissance," *Xinhua*, November 29, 2012. As of January 30, 2018: http://news.xinhuanet.com/politics/2012-11/29/c_113852724.htm.

founding) and 2035, spanning political, military, social, cultural, and economic fields.⁵ To realize these objectives and overcome opposition from powerful vested interests, Xi has consolidated power over the key organs of party, military, and state to guide structural, systemic reforms aimed at improving China's ability to control its domestic population, compete in the global economy, and defend China's expanding array of national interests. Structural reform stood out as the primary focus of the Third Plenum of the 18th CCP Congress in November 2013, and this continues to pervade much of Xi's agenda. With the start of China's 13th Five-Year Program in 2016, Xi set in motion the massive PLA restructuring effort that will define missions and determine capabilities for the Chinese military over the coming decades.

Defense spending patterns and Xi's personal interest in PLA restructuring indicate that the Chinese military will meet many of the modernization goals it seeks to achieve between 2020 and 2049. These goals focus on giving the PLA capabilities to conduct what Chinese military strategists call informatized, integrated joint operations.⁶ By 2035, if not before, the PLA likely will be able to contest all domains of conflict—ground, air, sea, space, cyberspace, and electromagnetic—throughout the Indo-Pacific region, greatly increasing the risks and costs of U.S. and allied responses to regional contingencies.

U.S. responses to PLA modernization should plan to fund and deploy the capabilities to meet these challenges and mitigate future risk to U.S. interests and forces posed by PLA modernization. Such responses should, on the one hand, maintain or even increase China's perception of the prohibitive risk involved in using force to settle regional disputes or threaten U.S. interests, and on the other, signal to China that the United States and its allies will maintain the edge in applying advanced technologies to military purpose. In both areas, U.S. actions will drive Chinese reactions. Congress, in its oversight of the Intelligence Community and the Departments of Defense and State, may wish to stress the importance of assessments that evaluate Chinese responses to counter U.S. and allied security initiatives.

In terms of maintaining or increasing Chinese risk aversion, the United States should consider the following responses:

- Develop a menu of proportional response options linked to various levels of Chinese coercion or aggression in the region. Such options could include increased Freedom of

⁵ “Full Text of 18th Party Congress Report,” *Xinhua*, November 17, 2012. As of December 15, 2017: http://news.xinhuanet.com/english/special/18cpnc/2012-11/17/c_131981259.htm. The general military milestones include the following:

The first step is to lay a solid foundation by 2010, the second is to make major progress around 2020, and the third is to basically reach the strategic goal of building informatized armed forces and being capable of winning informatized wars by the mid-21st century.

“China's National Defense in 2006,” *Xinhua*, December 29, 2006. As of December 15, 2017: http://www.chinadaily.com.cn/china/2006-12/29/content_771191.htm.

⁶ The U.S. Department of Defense (DoD) describes “informatization” as “conditions in which modern military forces use advanced computer systems, information technology, and communication networks to gain operational advantage over an opponent” and interprets the concept as referring to “high-intensity, information-centric regional military operations of short duration.” See Office of the Secretary of Defense, *Military and Security Developments Involving the People's Republic of China*, Washington D.C.: U.S. Department of Defense, 2011, p. 3. See also Information Office of the State Council, *China's National Defense in 2010*, March 2011.

Navigation Operations (FONOPS) in the South China Sea; semipermanent air, naval, and special operations forces rotations to the Philippines, Singapore, and Australia; exercises or joint patrols with Vietnam; and legal and economic disincentives for unilateral Chinese effort to increase military and paramilitary presence and infrastructure in contested areas.

- Increase the number and/or scope of bilateral and multilateral training exercises with regional allies and partners to rapidly deploy forces to new, austere, dispersed locations near regional hot spots.
- Demonstrate improved capabilities and new operational concepts for sea control operations and mobile defense of maritime features and lines of communication.
- Demonstrate command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) capabilities and concepts of operation that provide flexible communications and intelligence to widely dispersed forces in the Indo-Pacific.
- Prioritize funding for existing or repurposed systems that have the potential to disrupt Chinese plans, concepts, and operations but are currently insufficient in quantity, such as extended range cruise missiles, mobile integrated air and missile defenses, multirole unmanned aerial and undersea vehicles, and improved protective measures for high-value platforms and bases.⁷

Although the resource weight that the CCP and Chinese state put behind the development of militarily applicable disruptive technologies is of growing concern, most of the military modernization underway in China corresponds to achieving what the United States has already attained in its networked, precision-strike capabilities. To ensure that China doesn't "leapfrog" the United States and its allies in future capabilities, the United States should:

- clearly signal the intent to lead in any military application of disruptive technologies through DoD innovation programs or other channels
- consider defense authorization guidance that calls for a comprehensive assessment of how China defines and prioritizes the utility of specific civil-military technologies
- through appropriations and oversight auspices, consider building an integrated government-commercial sector counterintelligence effort to mitigate the compromise of U.S. intellectual, technical, and industrial capital.

The remainder of this testimony is organized into four sections. The first section analyzes the drivers of PLA modernization and the current restructuring effort. The second section provides an overview of the consolidation of Xi's power through PLA restructuring. The third section reviews the operational implications of restructuring, and the associated timelines. The final section considers implications and recommendations for the United States.

⁷ For a more complete discussion of potential options and associated costs, see David Ochmanek, Peter A. Wilson, Brenna Allen, John Speed Myers, and Carter C. Price, *U.S. Military Forces and Capabilities for a Dangerous World: Rethinking the U.S. Approach to Force Planning*, Santa Monica, Calif.: RAND Corporation, RR-1782-RC, 2017. In this study, the authors posit that increasing the U.S. defense budget by \$50 billion (to 3.5 percent of GDP) to fund additional systems as noted on this list, would provide significant improvements in U.S. conventional deterrence *vis-a-vis* China, Russia, Iran, and North Korea.

PLA Modernization Drivers: Restructuring to Meet the Threat

As was the case with his predecessors, Xi's military modernization programs and priorities are based on concepts delineated in CCP strategic guidelines to the military. Over the course of the People's Republic of China's history, three iterations of these guidelines represented major new military strategies, and several others represented adjustments to the strategy existing at the time.⁸ The most recent major or new guideline, issued in 1993 and encapsulated by the directive to the PLA to prepare for "winning local wars under high-technology conditions," has been adjusted twice, once in 2004 and again in 2015. The 2004 adjustment directed the PLA to prepare to "win local wars under conditions of informatization," and the current guidance, as revealed in China's 2015 defense white paper, directs the PLA to "win informatized local wars" with emphasis on struggle in the maritime domain.⁹

Chinese military science sources describe key modernization efforts as driven by an "information system-based system-of-systems" approach, akin to U.S. network-centric warfare.¹⁰ The "system-of-systems" and "informatization" approaches have focused on the development and employment of an integrated network for information collection, fusion, dissemination, and command decision in joint campaign operations as well as the formation of task-based organizations to conduct the "integrated joint operations" (IJO) enabled by such a network.¹¹ In addition to the focus on local, informatized war, the latest strategy also highlights the importance of "active defense"—a term that has deep historical roots in Chinese military thought but has evolved to conform to a new security environment and a new era in warfare. Active defense in its current form requires offensive, regional force projection capabilities to defend China's interests beyond her land borders.¹² The 2015 strategy particularly stresses the importance of projecting capabilities in the maritime and informational domains.

China's leaders have developed the strategic guidelines largely based on perceived threats to national interests given changes to the geostrategic environment and the evolving nature of

⁸ M. Taylor Fravel, "China's New Military Strategy: 'Winning Informatized Local Wars,'" *China Brief*, Vol. 15, No. 13, July 2, 2015.

⁹ For the official English translation of the white paper, see "Full Text: China's Military Strategy," *China Daily*, May 26, 2015. As of February 6, 2018: http://www.chinadaily.com.cn/china/2015-05/26/content_20820628.htm.

¹⁰ DoD's 2013 China report describes the system of systems concept as: "This concept requires enhancing systems and weapons with information capabilities and linking geographically dispersed forces and capabilities into an integrated system capable of unified action." Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China*, Washington, D.C.: U.S. Department of Defense, 2013, p. 12.

¹¹ For a discussion of system of systems operational capability, see Kevin McCauley, "System of Systems Operational Capability: Key Supporting Concepts for Future Joint Operations," *China Brief*, Vol. 12, No. 19, October 5, 2012. China's interpretation of IJO focuses on the development of joint command organizations with integrated command networks to enable rapid combat decision and execution. See the Academy of Military Science's journal, *Zhongguo Junshi Kexue*, Vol. 4, October 2010.

¹² For a discussion of the "active defense" concept, see Timothy R. Heath, Kristen Gunness, and Cortez A. Cooper, *The PLA and China's Rejuvenation: National Security and Military Strategies, Deterrence Concepts, and Combat Capabilities*, Santa Monica, Calif.: RAND Corporation, RR-1402-OSD, 2016, pp. 34–35.

warfare.¹³ PLA force transformation and modernization are therefore inextricably tied to and driven by CCP threat perceptions as promulgated through multiple official channels. These threats were expressed in the Mao, Deng, and early Jiang years via many documents to include military strategic guidelines. From 1998 to the present, China's biennial defense white papers have been a primary conduit for delineation of the threats to Chinese national interests and objectives, both domestic and foreign, for which the PLA must prepare and modernize.

China's national interests revolve around stability of political (i.e., CCP) and social systems, national sovereignty, national security, territorial integrity, national unification, and economic and social development. Chinese leaders often speak of three specific core interests, summarized by Xi during a 2014 meeting with the PLA's delegates to the National People's Congress as "national sovereignty, security, and development interests."¹⁴ Security generally refers to the maintenance of CCP control over the breadth and depth of the Chinese state. Sovereignty refers to territorial integrity and national unification interests, focused specifically on Taiwan, Tibet, and Xinjiang;¹⁵ but also bearing on maritime sovereignty claims in the East and South China Seas.¹⁶ Development concerns those economic and other interests deemed vital to sustained economic growth critical to the nation's development. The 2013 defense white paper points out the increasing importance of protecting resources, trade routes, and citizens overseas.¹⁷ In March 2017, Xi participated in a meeting of the PLA delegation to the National Party Congress, where he and the delegates discussed the importance of protecting China's overseas interests.¹⁸ Authoritative sources also make the same argument with regards to China's interests in new strategic domains, such as space and cyberspace.¹⁹

¹³ Fravel, 2015.

¹⁴ "Xi Jinping Attends PLA Delegation Plenary Meeting" [习近平出席解放军代表团全体会议], *People's Daily* [人民网], March 11, 2014. As of January 30, 2018: <http://lianghui.people.com.cn/2014npc/n/2014/0312/c376707-24609511.html>

¹⁵ Embassy of the People's Republic of China in the United States of America [中华人民共和国驻美利坚合众国大使馆], "MND: Adjustments to Mainland Military Disposition Toward Taiwan Will Depend on the Situation" [国防部: 大陆对台湾军事部署是否调整视情况而定], January 20, 2008. As of January 30, 2018: <http://www.china-embassy.org/chn/zgyw/glyw/t709316.htm>

¹⁶ Caitlin Campbell, Ethan Meick, Kimberly Hsu, and Craig Murray, *China's "Core Interests" and the East China Sea*, U.S.-China Economic and Security Review Commission, May 10, 2013. As of December 15, 2017: <https://www.uscc.gov/sites/default/files/Research/China's%20Core%20Interests%20and%20the%20East%20China%20Sea.pdf>. "China's Core Interests Are Not to Be Challenged" [中国核心利益不容挑战], *People's Daily* [人民网], May 25, 2015. As of December 15, 2017: <http://politics.people.com.cn/n/2015/0525/c70731-27053920.html>

¹⁷ Ministry of National Defense of the People's Republic of China [中华人民共和国国防部], *National Defense White Paper: The Diversified Employment of China's Armed Forces* [国防白皮书: 中国武装力量的多样化运用], April 16, 2013. As of January 30, 2018: http://www.mod.gov.cn/affair/2013-04/16/content_4442839_3.htm

¹⁸ Wang Shibin [王士彬], "Xi Jinping Attends PLA Delegation Plenary Meeting and Delivers Important Speech" [习近平出席解放军代表团全体会议并发表重要讲话], Ministry of National Defense of the People's Republic of China [中华人民共和国国防部], March 12, 2017. As of December 15, 2017: http://www.mod.gov.cn/leaders/2017-03/12/content_4775317.htm

¹⁹ Xiao Tianliang, ed. [肖天亮主编], *Science of Strategy* [战略学], Beijing: National Defense University Publishing House [国防大学出版社], 2015, p. 2.

The 2013 and 2015 white papers include a fairly extensive list of “security threats and challenges” to China’s interests. These include:

- the U.S. adjusting its Asia-Pacific strategy to strengthen alliances and expand military presence
- a Japanese threat to territorial sovereignty and maritime rights
- Taiwan “separatism”
- natural disasters, security accidents, and public health incidents
- factors affecting social harmony and stability
- increasing risk to China’s overseas investments
- major powers developing more sophisticated space and cyber technologies.²⁰

Through examining threat perception patterns across the defense white papers and other authoritative sources, it is possible to discern Beijing’s “top priorities” for adjustments to strategy and subsequent modernization initiatives. Taiwan separatism figures prominently, and most white papers cite general separatism, including in Tibet and Xinjiang, as a threat. The United States is directly mentioned in a threat context, and every version of the white paper cites “hegemonism” as a threat—an oblique reference to the United States. There are also mentions of “power politics,” “neo-colonialism,” “color revolutions,” and even “neo-gunboat diplomacy” that likely are indirect references to the United States. Combined, all these references put the United States above all other listed threats. All versions also cite advanced military technologies as posing a threat to Chinese national security.

U.S. and Japanese alliance actions in the Asia-Pacific region are grouped as a general threat. Defense white papers and other authoritative sources have mentioned the United States increasing its military presence in the region in conjunction with Japan pursuing remilitarization. In effect, whenever the United States does the former, it emboldens Japan to do the latter.²¹ China’s concern about improvements in military technologies (the Revolution in Military Affairs) also follows this logic. The more technologies improve, the more states will pursue them to gain a strategic advantage over their competitors or to at least avoid losing ground, thereby sparking a possible global arms race and increasing the possibility that local wars will become more disruptive to the global economy.

To be sure, PLA modernization is not always linked to specific threats. CCP leaders from Deng forward have stressed the goal of establishing a strong army in conjunction with creating a wealthy nation. However, this Strong Army Concept and the threat-based logic of PLA modernization are not mutually exclusive and are even interconnected. Official CCP and PLA writings stress the need for a strong army not for its own sake but rather to guard against threats in an increasingly complex security environment and preserve China’s economic gains. The 2015 *China’s Military Strategy* white paper argues that a “Strong Army” is part of the Chinese dream, necessary to protect the nation and deal with a range of threats.²²

²⁰ Ministry of National Defense of the People’s Republic of China, 2013, p. 2.

²¹ Ge Dongsheng [葛东升], *On National Security* [国家安全战略论], Beijing: Military Science Publishing House [军事科学出版社], 2006, pp. 30–39.

²² Ministry of National Defense of the People’s Republic of China, 2013.

PLA doctrine follows from the threat-based strategic guidelines. Operational regulations that likely represent PLA doctrine followed each of the three major guidelines—another set of new regulations was issued following an adjustment to guidelines in the 1970s.²³ The 1993 guidelines drove the development of the fourth and current set of PLA operational regulations, which were issued in 1999 and included campaign guidance documents that for the first time included both service-specific and joint campaigns.²⁴ Although “fifth generation” operational regulations have not been issued, there is evidence that doctrine is in a period of flux and new regulations bearing the mark of Xi’s restructuring goals likely are imminent.²⁵ These regulations will almost certainly stress improved joint capabilities in line with current restructuring efforts.

The path from party strategic guidelines to the formation of doctrine carries forward to defense research, development, and acquisition (RDA), force structure adjustments, training guidance, and development of new capabilities and concepts for deterrence and combat operations. This is particularly in evidence from the issuance of the 1980 guidelines to the present. The trajectory of strategic guidance, operational regulations, force structure changes, and defense programs since 1980 clearly indicate Chinese leaders’ understanding of the fundamental changes to the nature of warfare due to information technology and the “revolution in military affairs.” Party threat perceptions from 1999 to the present indicate a particularly acute sense of vulnerability in the maritime, electro-magnetic, space, and cyberspace domains.

These vulnerabilities appear even more acute considering the potential for China’s forces to come into conflict with the U.S. military in a regional contingency. Most of China’s short- to mid-term defense industrial programs are driven by a CCP requirement for the PLA to address capability gaps faced by the force should it be called upon to defeat a regional adversary with competing sovereignty or territorial claims, and confront U.S. or allied forces responding to such a contingency. The warfighting potential presented by U.S. operational forces in support of Taiwan is largely behind China’s successful drive to extend PLA capacity to find, fix, and target forces and installations in the region to hundreds of kilometers from Chinese shores and borders. A large body of Chinese professional military education materials make clear that China has absorbed lessons learned from U.S. performance in contemporary conflicts and harnessed those insights to shape its development of an informatized reconnaissance-strike capability.²⁶

The full military modernization that the CCP expects by mid-century, if achieved, will be completed because the PLA achieves networked C4ISR and counter-C4ISR capabilities that enable very complex combinations of systems and subsystems to kinetically or nonkinetically defeat or paralyze key points and nodes in enemy operational systems, all within the enemy’s decision cycle.²⁷ Priority programs include but are not limited to:

²³ Elsa B. Kania, “When Will the PLA Finally Update Its Doctrine?,” *The Diplomat*, June 6, 2017.

²⁴ Wang An and Fang Ning, *Textbook on Military Regulations and Ordinances*, Beijing: Military Science Press, 1999, pp. 124–138.

²⁵ Kania, 2017.

²⁶ Michael S. Chase, Cristina L. Garafola, and Nathan Beauchamp-Mustafaga, “Chinese Perceptions of and Responses to Conventional Military Power,” *Asian Security*, 2017, p. 5.

²⁷ McCauley, 2012.

- an integrated air defense systems (IADS) to defend against American airpower over Chinese territory or on its periphery
- large numbers of conventional land attack and antiship ballistic missiles to threaten U.S. land-based aircraft in the region, aircraft carrier operations, and U.S. basing and supply chains
- platforms, such as the new Type 055 cruiser's vertical launching system, to launch cruise missiles in quantities to overwhelm U.S. or allied defenses
- an undersea sensor system and improvements to China's relatively weak antisubmarine warfare capability to detect, track, and degrade U.S. submarines operations off the Chinese coast
- long-range radar, jamming, antisatellite, and cyber capabilities to detect U.S. movements and blind, jam, and/or incapacitate U.S. space and radar systems
- unmanned aerial vehicles and other systems to conduct ISR missions as well as strikes and battle damage assessment.²⁸

Chinese strategists clearly believe that the threat of regional conflict, particularly involving the U.S. and/or Japan, will require a much higher level of interservice integration and survivable, multipurpose command and control (C2) systems and networks than the PLA has ever managed. Closely analyzing PLA campaign literature paints a picture of a force that will use a blend of offensive and defensive concepts to gain information dominance at the outset of conflict, and to use this advantage to conduct long-range precision strikes against a technologically advanced enemy's most valued high-tech weapons systems and supply lines.²⁹

Restructuring Command and Control: Consolidating the Chairman's Power

Since 2014, Chinese media references to the "Central Military Commission [CMC] Chairman Responsibility System" have forcefully driven home the degree to which Xi, as chairman of the CMC, exercises direct control over disciplinary, administrative, and operational activities of the PLA.³⁰ Although Xi inherited and is forwarding the logic and direction of modernization discussed earlier in this paper, he alone among the post-Tiananmen leaders has been able to overcome bureaucratic hurdles to force the organizational changes needed to realize modernization objectives. The first objective is to sustain the absolute loyalty of the PLA to the CCP in the person of the CMC chairman, and the second is to achieve a C2 structure at all levels of the PLA that enables joint operations in informatized local war.

With the reorganization set in motion in early 2016, Xi places the PLA more tightly under

²⁸ For more information on specific systems, please see 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, *The U.S.-China Military Scorecard*, Santa Monica, Calif., RAND Corporation, RR-392-AF, 2015, pp. 28–35.

²⁹ Wang Houqing and Zhang Xingye, eds., *On Military Campaigns*, Beijing: National Defense University Press, 2000.

³⁰ See James Mulvenon, "The Yuan Stops Here: Xi Jinping and the 'CMC Chairman Responsibility System,'" *China Leadership Monitor*, No. 47, Summer 2015. As of February 1, 2018: <https://www.hoover.org/publications/china-leadership-monitor/summer-2015-issue-47>

the institutional control of the CCP and makes it more personally obedient to him. Xi laid the groundwork for restructuring in large part via his anticorruption campaign. The anticorruption sweep to date has netted over 50 general officers, including the most senior general officers to have been purged in the last 20 years.³¹ Although undoubtedly aimed at destroying corrupt patron-client links and abuses of privilege associated with control over administrative and resource decisions, the anticorruption campaign has also, at least to this point, given Xi the power needed to clear obstructions to his reorganization goals.

In terms of eradicating alternate power centers to Xi and the CMC, the key changes are the elimination of the four PLA General Departments and streamlining of the seven Military Regions (MRs) into five Theater Commands. The old General Department functions are subsumed by 15 functional organs established directly under a revamped CMC, centralizing C2 in the CMC and its chairman.³² While transitioning the MR system to a more joint Theater Command structure may be primarily oriented to improve interservice operability, it also enhances CCP control. With the change, the PLA services are now principally responsible to the CMC for manning, equipping, and training activities, while the theaters assume operational control of forces under the supreme command of the CMC.³³ Along with the anticorruption drive, having separate entities to manage administrative and operational functions may enable CMC efforts to break up relationships based on bribery and corrupt procurement practices.³⁴ It remains to be seen if the PLA will rotate officers among different theaters to inculcate a joint culture, but such activity would further weaken old patron-client relationships.

Any reform of this magnitude, which also includes a force reduction of 300,000 personnel, entails risk to the reformer. Xi has softened the blow by not only continuing the trend of double-digit defense budget increases, but also through several initiatives to raise both the standard of living of servicemembers and their status in the eyes of Chinese society. He has actively promoted the importance of the PLA through a schedule of visits to PLA units across China that dwarfs those of his predecessors. Presiding over a massive military parade marking the 90th birthday of the PLA this past summer, Xi dressed in camouflage and expressed his pride in the PLA as guarantor of China's security and prosperity—a coming-out party reinforcing both Xi's control and the PLA's priority in party and state resource decisions.³⁵

³¹ Li Xiaoting, "Cronyism and Military Corruption in the Post-Deng Xiaoping Era: Rethinking the Party-Commands-the-Gun Model," *Journal of Contemporary China*, Vol. 25, No. 107, 2017, pp. 696–687.

³² Chien-wen Kou, "Xi Jinping in Command: Solving the Principal-Agent Problem in CCP-PLA Relations?" *China Quarterly*, No. 232, December 2017, p. 7.

³³ See Joel Wuthnow and Phillip C. Sanders, "Chinese Military Reforms in the Age of Xi Jinping: Drivers, Challenges, and Implications," *China Strategic Perspectives 10*, Washington D.C.: National Defense University Press, March 2017, p. 19.

³⁴ Li Shaomin, "Assessment of an Outlook on China's Corruption and Anticorruption Campaigns: Stagnation in the Authoritarian Trap," *Journal of Contemporary China*, Vol. 24, No. 2, 2017, p. 142.

³⁵ Kou, 2017, pp. 8–9.

Restructuring Theaters and Services: Preparing for Integrated Joint Operations

With greater centralization of military authority, Xi desires to make the PLA a more effective and capable fighting force by revamping combat formations for joint, informatized operations. The primary impediment to progress for the PLA on its path to integrated joint operations was the MR organizational structure, which had both operational and administrative obligations and was heavily geared to ground force dominance. On February 1, 2016, the CMC officially replaced the MR system with four Theater Commands responsible for operations in each of the cardinal directions and a fifth responsible for defense of Beijing. The reorganization also established a distinct PLA Army headquarters, granted military service status for the PLA Rocket Force (formerly 2nd Artillery Force), established a Joint Logistics Support Force, and created a Strategic Support Force that consolidates many intelligence, space, cyber and electronic warfare organs and responsibilities. The reorganization is a major step toward reducing the dominance of the ground forces while promoting joint organizations with greater Navy and Air Force leadership and re-engineering logistics and support systems.

While the command lines from Theater headquarters to the separate service units are nascent and somewhat unclear, each theater has a joint operations command center (JOCC) to exercise operational C2 of its forces. The CMC also has a JOCC in its Joint Staff Department to exercise joint C2 at the supreme command level. Assigning responsibility for joint planning and C2 at theater echelon is in part justified by the need to push C2 closer to the operational space, particularly considering the requirement to operate outside the traditional confines of China's borders.³⁶ The Theater Command system, complemented by the establishment of a central PLA JOCC, potentially provides full-time joint planning staffs in strategic directions along its periphery. The PLA also will have the opportunity to achieve more effective C2 to integrate joint C4ISR capabilities and plan for multiregion campaigns that require subordination of one command to another.³⁷

The MR system emphasized “mechanized and semimechanized” warfare with fixed boundaries and armor operations.³⁸ This downplayed air and naval operations and inhibited the development of training and concepts to contend with operations that occur outside the territorial boundaries. By instituting a JOCC at each theater, Beijing has put the structures in place both for managing crises and conflict on the periphery, as well as potentially for overseas deployments over the coming decades. Possibly the most consequential progress from the restructuring will come from the development over time of joint force packages for overseas operations in line with the CMC's expectation of “unprecedented global change.”³⁹

³⁶ “Hu Jintao Urges Army to Perform ‘Historical Mission,’” *People's Daily*, March 14, 2005. As of August 31, 2017: http://en.people.cn/200503/14/eng20050314_176695.html

³⁷ Liu Wei, ed., *Theater Joint Operations Command* [战区联合作战指挥], Beijing, National Defense University Press, 2016.

³⁸ Wei, 2016.

³⁹ “Central Military Commission Opinion on Deepening the Reform of National Defense and the Armed Forces,” *Xinhua*, January 1, 2016. As of August 31, 2017: http://news.xinhuanet.com/mil/2016-01/01/c_1117646695.htm

The C4ISR and the air and naval capabilities needed to support expeditionary operations—i.e., operations thousands of miles from China’s shores—likely remain beyond China’s grasp for at least the next decade. Combined with the structural reforms underway, however, China’s advances in space-based capabilities, drone technology, and information processing could provide sufficient means to provide targeting quality data to deployed Chinese forces anywhere in the world by 2030 or 2035.⁴⁰ China can build on the experience of a near-continuous naval presence in the Gulf of Aden for over a decade. Although China has only just begun to negotiate with foreign governments for the rights and authorities needed for overseas basing and operations, the PLA’s recent establishment of a base in Djibouti could provide an initial basis for deploying forward command staffs, facilities, and even forces.

PLA restructuring is very likely to improve joint operational capabilities in the next five to ten years, but available sources are unclear about the unit levels at which “jointness” will occur and the specific concepts for issues such as force allocation, deconfliction, and lower-level C2. China’s ability to achieve the types of effects and capabilities they have observed in U.S. operations will largely depend on continuing to evolve away from large maneuver elements of the MR system to smaller, more flexible units with more combat and combat support capability at the tactical level. For example, the PLA Army is currently experimenting with battalion-level formations that have artillery, reconnaissance, armor, intelligence, and air defense assets under battalion command. While this is notable progress and represents advances within a service to improve combined arms operations—translating this to “jointness” remains a time- and resource-intensive endeavor that will consume at least the next decade and probably beyond.

In addition to the time it will take to fully restructure national and theater C2, complete joint organizational experimentation and implementation, and establish doctrine and training regulations, the PLA faces the following hurdles to the realization of restructuring goals:

- Adapting to restructuring and reorganization demands will produce some level of turmoil in war mobilization plans and processes.
- Creating a “joint-minded” officer corps remains aspirational for the PLA. The PLA has not established a culture that develops commanders to manage complex joint operations in an information-saturated environment, and the rate of change driven by information technology compounds the problem.
- China’s ground force-centric culture appears to be changing, but revamping thought processes and the professional military education system across the force will be tortuous.
- The CCP’s ubiquitous focus on internal security responsibilities may divert resources from a more outward-looking PLA as economic growth slows.⁴¹

⁴⁰ I base this assessment on activities to date in the Gulf of Aden deployments and the establishment of the Djibouti base; advances in China’s space-based C4ISR architecture; increasing deployments by the PLA Navy beyond the first island chain in the Pacific and into the Indian Ocean; and perhaps most importantly, on the goals for 2035 stated by Xi in his opening speech at the 19th party congress of the CCP. In this speech, Xi expressed that the PLA would be “modernized by 2035,” in keeping with his intent for China to have pioneering global influence between 2035 and 2050. Zhao Lei, “Xi Calls New PLA Branch a Key Pillar,” *China Daily*, August, 30, 2016. As of January 11, 2018: http://www.chinadaily.com.cn/china/2016-08/30/content_26635294.htm

⁴¹ For a discussion of persistent shortfalls that will potentially plague PLA reform efforts, see Chase et al., 2015.

Beyond the restructuring itself, perhaps most important for the PLA to attain joint, informatized capabilities will be the marriage of new and potentially disruptive technologies to military concepts. Historically, China's military scientists are active and productive when CCP leadership provides priority and resources. The priority and resources are available now, and barring a more severe economic downturn than expected, this likely will remain the case for at least the next 15 to 20 years. The PLA's weapons and equipment plan for that period is not openly available, but Chinese science and technology priorities and civil-military integration goals clearly indicate that China intends to achieve military advantage from key technologies such as quantum computing and communications, hypersonics, artificial intelligence, big data applications, cloud computing, 3D printing, nanomaterials, and biotechnology.⁴² Success in these areas will to great extent determine the nature of U.S.-Chinese military competition over the next three decades.

Based on the trajectory of PLA reform and reorganization efforts to date, China likely will achieve a high level of proficiency commensurate with integrated joint operations goals by the mid-2030s or a little beyond—approximately a decade ahead of CCP mid-century objectives. This may render by 2035 (if not before) a PLA that is capable of greatly increasing the risks and costs of U.S. and allied contingency responses throughout the Indo-Pacific region. The PLA in this time frame likely will be able to contest all domains of conflict—ground, air, sea, space, cyberspace, and the electro-magnetic environment.

Implications and Recommendations for the United States

In developing responses to PLA modernization, given both the path of advanced military technologies and major restructuring, U.S. decisionmakers should remember two salient facts. First, China recognizes that major war with the United States would likely be ruinous in terms of China's stated national development objectives. The logic of China's defense policy and security strategy suggests a growing, but still low, tolerance for risk, and China's risk acceptance is to some extent tied to the willingness of the United States and its allies to confront Chinese behavior in hot spots, such as the South and East China Seas. Second, most of the military modernization underway in China corresponds to achieving the types of capabilities the United States has already attained. Many of China's capability development programs are direct responses to U.S. programs and capabilities that have been demonstrated from the first Gulf War to the present. Activities or initiatives to deter China from resolving regional or, in the future, global disagreements through military force should take into consideration these points.

Maintaining or increasing China's risk aversion may be increasingly difficult as PLA military capabilities improve, and some Chinese sources on crisis management and war control indicate that China's risk perception might already be changing in ways detrimental to peaceful resolution of regional disputes.⁴³ The precise nature of this change is difficult to assess, but likely involves Chinese perceptions both of an increase in Chinese strength relative to the United States

⁴² Lei, 2016.

⁴³ See Heath et al., 2016, pp. 17–27.

and its allies and of reduced U.S. willingness to pay the price of extended deterrence in Asia. The strength of our alliances, defense capacity of our allies and partners, and our military presence in the region impacts China's risk analysis. U.S. and allied leaders and planners should develop a menu of relatively proportional response options to various levels of Chinese coercion and aggression in the region, and should clearly exhibit in training and in actual crisis situations below the threshold of open combat the capability and will to confront China.⁴⁴

Such options could include an increase in FONOPS in the South China Sea; semipermanent air, naval, and special operations forces rotations to the Philippines, Singapore, and Australia; exercises or joint patrols with Vietnam; and pursuit of legal and economic disincentives for unilateral Chinese effort to increase military and paramilitary presence and infrastructure in contested areas. While there is escalation risk even in proportional responses, the capacity of the United States and its allies to have and use such options might increase China's perception of risk, complicating Beijing's security calculus. Specifically, U.S. decisionmakers could consider:

- increasing the frequency of bilateral and multilateral training exercises with regional allies and partners to rapidly deploy forces to new, austere, dispersed locations near regional hot spots
- demonstrating improved capabilities and new concepts for sea control operations and mobile defense of maritime features and sea lines of communication
- demonstrating C4ISR capabilities and new concepts of operation in training and exercises to provide flexible communications and intelligence to widely dispersed forces in the Indo-Pacific and highlighting them in media and strategic communications channels.

These same activities and demonstrated U.S. and partner capabilities will also impact the direction of Chinese RDA and capabilities development, particularly in high-technology areas. Adjustments to U.S. force posture in the Asia-Pacific region, better integration with Japanese and South Korean forces, and transformation of Japanese concepts of collective self-defense influence how the PLA invests in its future weapons programs, including hypersonic vehicles and other disruptive technologies. If it chose to do so, Congress, in its oversight of the Departments of Defense and State, and the Intelligence Community may wish to stress the importance of assessing how China responds to counter U.S. and allied security initiatives.

Perhaps most importantly for deterrence is ensuring that the U.S. invests wisely in the systems and capabilities today that can bolster extended conventional deterrence in the Indo-Pacific. This is primarily a matter of funding, not of technology. Congress may wish to consider appropriations for existing or repurposed systems that have the potential to disrupt the Chinese plans, concepts and operations described earlier in this testimony.⁴⁵ China is concerned about a future U.S. "third offset," but there are systems and capabilities at our disposal today that

⁴⁴ The recent stand-off between China and India in the Doklam region of Bhutan is potentially instructive in this regard. India combined back-channel diplomacy with China while its troops confronted PLA forces on the ground to maintain status quo in disputed territory. See Narayani Basu, "Diplomacy in Doklam: New Strategic Ground for India in South Asia," *The Diplomat*, September 2, 2017.

⁴⁵ For a discussion of specific systems, see David Ochmanek, *Recommendations for a Future National Defense Strategy*, Santa Monica, Calif: RAND Corporation, CT-484, November 30, 2017. As of January 30, 2018: <https://www.rand.org/pubs/testimonies/CT484.html>.

potentially cause Chinese planners to question their capability to execute the campaigns they have outlined in their doctrinal writings—there are just insufficient quantities of them to accomplish this effect. Additional funding for extended range cruise missile systems, mobile integrated air and missile defenses, multirole unmanned aerial and undersea vehicles, and improved protective measures for high-value platforms and bases would help in this regard.

Regarding China's ability to attain capabilities learned from U.S. joint operations and advanced weapons programs, it is incumbent upon U.S. leaders to ensure that we maintain technological and operational superiority and prevent China from "leapfrogging" us in networked, precision-strike capability through their "system-of-systems" approach. Whether through "third offset" innovation or other channels, the United States must clearly signal the intent to lead in any military application of potentially disruptive technologies. This will be difficult, given the resource weight that the CCP and the Chinese state put behind the development of artificial intelligence, super-computing, and bio-technology programs, but the United States cannot afford complacency. In this regard, Congress may wish to consider defense authorization guidance to DoD that calls for assessing and evaluating how China defines and prioritizes the utility of specific civil-military technologies, considering their "system-of-systems" approach.

A necessary first step to maintaining U.S. technological superiority is to shore up U.S. counterintelligence and law enforcement efforts that protect U.S. defense and dual-use technologies. Congress, through appropriations and oversight auspices, may wish to focus on building an integrated government-commercial effort to counter the compromise of U.S. intellectual, technical, and industrial capital. This involves, but is not limited to, cyber espionage threats and Chinese strategies to gain competitive advantage via state-sponsored economic initiatives.

U.S. defense planners should assume that China's restructuring and modernization programs will produce a PLA capable of conducting the informatized, integrated joint operations clearly described in military science sources. Defense spending patterns and Xi's personal interest in PLA restructuring indicate that the Chinese bureaucracy will see various priority military goals met between 2020 and 2040. The inherent difficulties and even contradictions in and between some of these priorities, however, are daunting. U.S. policymakers and decisionmakers must strive to fund and deploy the capabilities that will hold Chinese "informatized" joint plans and concepts at risk into the future and show the intent to maintain the strength of key alliances and the technological superiority that have underpinned regional stability and prosperity in the Indo-Pacific region for over six decades.