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China's Military: The People's Liberation Army (PLA)

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China's Military: The People's Liberation Army (PLA)

China's military modernization is a major factor driving some observers' concerns about China's rise, China's intentions toward the United States and its allies and partners, and the role China aspires to play in the world. China's military progress also informs the widely-held view that the United States and China are engaged in a "great power competition." Congressional actions on these issues could shape, and be shaped by, U.S. defense strategy, budgets, plans, and programs; U.S. policy toward China, U.S. partners and allies in the Indo-Pacific, and the region more generally; and U.S. defense industrial policies, among other things.

The People's Republic of China's (PRC's or China's) ruling party, the Chinese Communist Party (CCP), is modernizing, reforming, and reorganizing its military, the People's Liberation Army (PLA), to defend the Party's interests and meet defense requirements set by China's leaders. These interests and defense requirements have expanded in recent decades as China's economic and geopolitical power and ambitions have grown.

The CCP's national defense priorities include defending the Party; protecting what it views as China's sovereignty, territorial integrity, and unity; protecting China's growing overseas interests; deterring nuclear attacks and maintaining a nuclear counterattack capability; and deterring and countering acts it views as terrorism. Some of the Party's national defense objectives, such as safeguarding the CCP's control over the country and deterring nuclear attacks, have been in place for several decades. Others are more recent, such as safeguarding China's overseas interests and its interests in space and cyberspace.

China presents its military posture as purely defensive, serving only to protect China's legitimate sovereign interests. It calls its national military strategy "active defense," a concept that prescribes the ways in which China can defend its interests and prevail over a militarily superior adversary. This strategy allows for the use of offensive operational and tactical approaches, and the PLA has and continues to develop capabilities to wage offensive operations across a range of domains.

China's current military modernization push began in 1978 and accelerated in the 1990s. Xi Jinping, the General Secretary and "core leader" of the CCP, Chairman of the CCP's Central Military Commission, and State President, has continued to make military modernization a priority and has linked military modernization to his signature issue: the "China Dream" of a modern, strong, and prosperous country. In 2017, Xi formalized three broad goals for the PLA: (1) to achieve mechanization of the armed forces and to make significant progress toward what the United States would call a "networked" force by 2020; (2) to "basically complete" China's military modernization process by 2035; and (3) to have a "world-class" military by 2049, the centenary of the establishment of the PRC. Xi has initiated the most ambitious reform and reorganization of the PLA since the 1950s, in an effort to transform the military into a capable joint force as well as to further consolidate control of the PLA in the hands of Xi and the CCP.

After decades of modernization supported by steady defense budget increases and other policies that promote military-technological advances, the PLA has become a formidable regional military with growing power projection capabilities. China's armed forces are improving capabilities in every domain of warfare, have superior capabilities to other regional militaries in many areas, and are eroding U.S. military advantages in certain areas. China's missile force, in particular, can put at risk a large range of targets in the region, including U.S. and allied bases. The PLA faces significant challenges and limitations, however, including a lack of combat experience, insufficient training in realistic combat scenarios, a limited ability to conduct joint operations, limited expeditionary capabilities, a new and largely untested organizational structure, and a dependence on foreign suppliers for certain military equipment and materials.

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Introduction

The People's Republic of China's (PRC's or China's) ruling party, the Chinese Communist Party (CCP), has built itself a modern and regionally powerful military. Decades of military modernization have transformed the People's Liberation Army (PLA) from a bloated, low-technology, ground forces-centric force to a leaner, more networked, high-technology force.¹ Increasingly capable across multiple warfare domains, the PLA has reached parity with the U.S. military in several areas and is strengthening its ability to “counter an intervention by an adversary in the Indo-Pacific region and project power globally,” according to the U.S. Department of Defense (DOD).² Outside observers and the PLA itself also acknowledge that the PLA faces uncertainties and limitations, many of which the PLA is seeking to address, including through an ambitious reform and reorganization initiative begun in 2015.

U.S. policymakers and observers increasingly describe China's military buildup as a threat to U.S. and allied interests. This view reflects concerns about PLA capabilities—many of which appear designed specifically to counter U.S. military power—China's growing economic and geopolitical power, and uncertainty about China's regional and global intentions. Some Members of both parties in Congress have argued that meeting this perceived challenge requires the United States to strengthen its military advantages, and address major vulnerabilities, vis-à-vis China. Congressional decisions on this issue could shape, and be shaped by, U.S. defense strategy, budgets, plans, and programs, and the U.S. defense industrial base, among other things.

This report discusses issues for Congress related to the PLA, the PLA's ongoing reform and reorganization efforts, the PLA's roles in advancing China's national security interests, major features of China's strategic outlook, PLA capabilities and modernization, uncertainties related to PLA capabilities, and the resources that fuel PLA modernization. In order to cover a wide range of topics in a concise format, the report does not go into great depth on some topics and omits other topics that might be considered germane.

CRS products that provide additional background on issues related to China's military include

- CRS In Focus IF11719, *China Primer: The People's Liberation Army (PLA)*, by Caitlin Campbell
- CRS In Focus IF11712, *China Primer: U.S.-China Military-to-Military Relations*, by Caitlin Campbell
- CRS Report R43838, *Renewed Great Power Competition: Implications for Defense—Issues for Congress*, by Ronald O'Rourke
- CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, by Ronald O'Rourke
- CRS Report R42784, *U.S.-China Strategic Competition in South and East China Seas: Background and Issues for Congress*, by Ronald O'Rourke
- CRS Report R45898, *U.S.-China Relations*, coordinated by Susan V. Lawrence
- CRS In Focus IF10275, *Taiwan: Political and Security Issues*, by Susan V. Lawrence

¹ For additional information on the history of China's military transformation, see, for example, Roy Kamphausen and Andrew Scobell, eds., *Right-Sizing the People's Liberation Army: Exploring the Contours of China's Military* (Carlisle, PA: U.S. Army War College Strategic Studies Institute), September 2007.

² U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, pp. vi, 38.

- CRS Report R41007, *Understanding China's Political System*, by Susan V. Lawrence and Michael F. Martin

Issues for Congress

U.S. policymakers and observers, including some Members of Congress, increasingly describe China's military buildup as a threat to U.S. and allied interests. Top defense officials in the Trump and Biden administrations have identified China as the U.S. military's "pacing threat."³ This view reflects concerns about PLA capabilities (many of which appear designed specifically to counter U.S. military power), China's growing economic and geopolitical power, and uncertainty about China's regional and global intentions. Competition with China is emerging as a primary driver of U.S. defense planning, budgeting, and programming.⁴ Some Members of both parties in Congress have asserted that meeting this perceived challenge requires the United States to strengthen its military advantages and address major vulnerabilities vis-à-vis China. Congressional attention to this issue is marked by, among other things, hearings, briefings, reports, and defense bills.

Implications of a Modernizing PLA for U.S. Interests

Several public government and nongovernmental assessments conclude that China's military capabilities are maturing to a point where the PLA increasingly is able to challenge U.S. military superiority in some areas. Such a dynamic arguably enhances the PLA's ability to deter or impose significant costs on the U.S. military in certain plausible scenarios. Observers continue to debate whether China could prevail in a regional conflict in the coming years.⁵

- At a March 2021 public event, then-U.S. Indo-Pacific Command (INDOPACOM) Commander Admiral Philip S. Davidson said that China's military modernization is making the military balance of power in the Indo-Pacific "more unfavorable" for the United States and its allies such that it could possibly "forcibly change the status quo in the region" by 2026.⁶
- According to DOD's *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, the PLA in 2020 had "already achieved parity with—or even exceeded—the United States" in areas such as shipbuilding, land-based conventional ballistic and cruise missiles, and integrated air defense systems. It also stated, "The PLA's evolving capabilities and concepts continue to strengthen the PRC's ability to counter an

³ Air Force Magazine, "Austin Highlights China Threat in First Briefing," February 19, 2021, at <https://www.airforcemag.com/austin-highlights-china-threat-in-first-briefing/>; Jim Garamone, "Esper Discusses Moves Needed to Counter China's Malign Strategy," DOD News, August 27, 2020, at <https://www.defense.gov/Explore/News/Article/Article/2326863/esper-discusses-moves-needed-to-counter-chinas-malign-strategy/>.

⁴ CRS Report R43838, *Renewed Great Power Competition: Implications for Defense—Issues for Congress*, by Ronald O'Rourke.

⁵ William Cole, "China Could Soon Outgun U.S. in Western Pacific, Indo-Pacific Chief Says," *Honolulu Star-Advertiser*, March 6, 2021, at <https://news.yahoo.com/amphml/china-could-soon-outgun-u-170800040.html>; Center for Strategic and International Studies, "China's Power: Up for Debate 2020—Debate 4; Proposition: Within the Next Five Years, China Will Use Significant Military Force Against a Country on Its Periphery," December 9, 2020, at <https://www.csis.org/events/online-event-chinas-power-debate-2020-debate-4>.

⁶ American Enterprise Institute, "A Conversation with US Indo-Pacific Command's Adm. Philip Davidson," March 4, 2021, at <https://www.aei.org/events/a-conversation-with-us-indo-pacific-commands-adm-philip-davidson/>.

- intervention by an adversary in the Indo-Pacific region and project power globally.”⁷
- Although the PLA is increasingly competitive with the U.S. military in some warfighting areas, it lags behind in others. According to one long-time observer of the PLA, in 2019, “in certain areas, such as some categories of ballistic and cruise missiles, air defense, electronic warfare, and cyber capabilities, the PLA ranks among the world’s leaders. However, in many other battlefield functions, the PLA trails advanced militaries by one to multiple decades of experience.”⁸ In 2015, the RAND Corporation assessed that China had achieved approximate parity or an advantage vis-à-vis the United States in some operational areas relevant to U.S.-China conflict scenarios involving Taiwan or the South China Sea’s Spratly Islands. The RAND study concluded that the PLA “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.”⁹
 - Official PRC public assessments of China’s relative military power tend to downplay current capabilities, and emphasize the urgent need to rectify perceived shortcomings. China’s 2019 defense white paper claims, “The PLA still lags far behind the world’s leading militaries.”¹⁰

Select Congressional Action Related to China’s Military

National Defense Authorization Acts

One indication of congressional interest in China in the context of U.S. national security is the increasing attention to China in national defense authorization acts (NDAAs): there were more references to China in the FY2020 and FY2021 NDAAAs than in the previous 15 NDAAAs combined (see **Figure 1**).

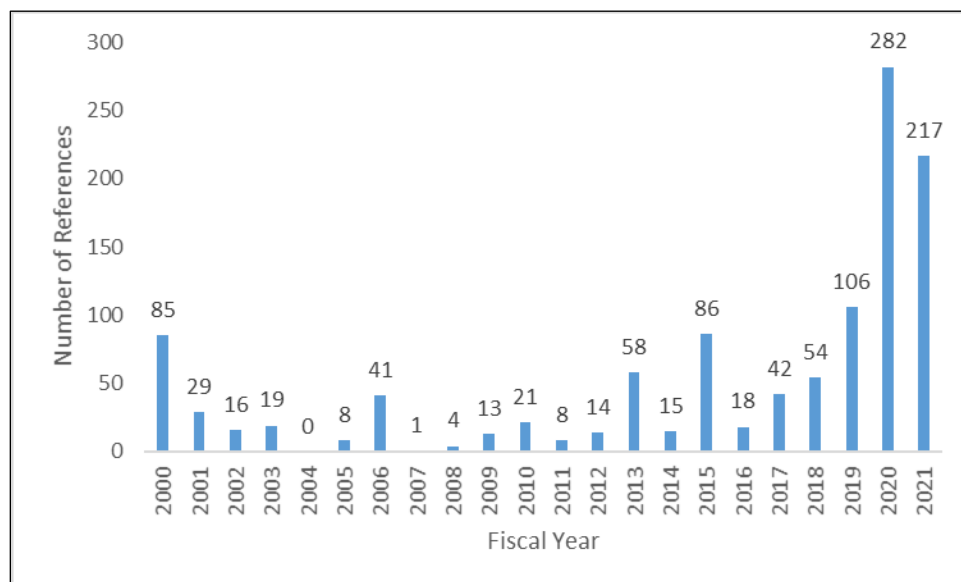
⁷ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2020*, August 21, 2020, p. 38.

⁸ Testimony of independent analyst and former U.S. army attaché to Beijing and Hong Kong Lieutenant Colonel (ret.) Dennis J. Blasko, in U.S.-China Economic and Security Review Commission, *What Keeps Xi Up at Night: Beijing’s Internal and External Challenges*, hearings, February 7, 2019.

⁹ Eric Heginbotham et al., “The U.S.-China Military Scorecard: Forces, Geography, and the Evolving Balance of Power, 1996-2017,” RAND Corporation, 2015.

¹⁰ PRC State Council Information Office, *China’s National Defense in the New Era*, July 2019. See also Dennis J. Blasko, “The Chinese Military Talks to Itself, Revealing Doubts,” *War on the Rocks*, February 18, 2019, at <https://warontherocks.com/2019/02/the-chinese-military-speaks-to-itself-revealing-doubts/>.

Figure I. References to China in National Defense Authorization Acts (NDAA)
FY2000–FY2021



Source: Enacted National Defense Authorization Acts, FY2000–FY2021.

Notes: Includes references to “China,” “Chinese,” “Taiwan,” and “Hong Kong.”

The NDAA is the primary legislative vehicle by which Congress can act to enhance the United States’ ability to compete with China in the national security realm. Recent NDAA have included numerous provisions that reference China (and Taiwan) directly, as well as provisions that relate or could relate to China. For example, the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (P.L. 116-283) includes 40 provisions with explicit references to China, Taiwan, or Hong Kong on such issues as space capabilities, U.S. arms sales to Taiwan, nuclear weapons, cyber theft, and semiconductor supply chain security. Dozens of other provisions arguably relate to or have implications for U.S. policy toward China, but do not refer to it explicitly. Many of these are related to enhancing U.S. competitiveness in existing and emerging technologies, advanced manufacturing capabilities, and basic research and development with military applications, among other issues.

The FY2021 NDAA also includes a “Pacific Deterrence Initiative” (Section 1251) that authorizes around \$2.2 billion to increase U.S. and allied military capabilities in the Indo-Pacific region in FY2021; requires DOD to report to the congressional defense committees on future year activities and resources for the initiative no later than February 15, 2021; requires DOD to include a detailed budget display for the initiative beginning with the FY2022 budget request; and requires DOD to brief the congressional defense committees on the initiative’s budget and programs no later than March 1, 2021, and annually thereafter. The initiative, which “pushes back on Chinese aggression,” according to then-Senate Armed Services Committee Chairman Senator Jim Inhofe (R-OK) and then-Ranking Member Jack Reed (D-RI), seeks to establish, oversee, and fund a long-term strategic approach to the region. A February 2021 report to Congress detailing INDOPACOM’s investment plan for the Pacific Deterrence Initiative noted the initiative aims to “enhance budget transparency and oversight while focusing resources on vital military capabilities to deter China.”¹¹

¹¹ U.S. Indo-Pacific Command, “National Defense Authorization Act (NDAA) 2021 Section 1251 Independent

Appropriations

Beginning with the Obama Administration's "rebalance to Asia" policies, U.S. Administrations have sought to increase resources—including defense resources—aimed at advancing U.S. interests in response to China's rise.¹² Through examination of the President's budget request and defense appropriations, Congress can approve, reject, or modify budgets proposed by the administration for addressing perceived defense requirements related to competition with China.

Report Requirements

Congress requires both regular and one-time reports by the executive branch and other entities to inform its decisionmaking related to China's military.

DOD Annual Reports on China: Since 2001, pursuant to the NDAA for FY2000 (P.L. 106-65, as amended), Congress has required DOD to submit an annual report on military and security issues related to China, called the *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China*. (DOD often refers to it as the "China Military Power Report.") Congress has expanded and adjusted the content requirements for this report over the years.

U.S.-China Economic and Security Review Commission Reports: The bipartisan U.S.-China Economic and Security Review Commission, created by the NDAA for FY2001 (P.L. 106-398), conducts public hearings and is mandated to issue a public annual report and recommendations to Congress on a range of topics. Congress has expanded the Commission's mandate over the years. It currently includes coverage of the following topics: China's role in weapons proliferation; the impact on U.S. national security of U.S.-China economic activities; China's energy and natural resource security; U.S. investment in China and Chinese investment in the United States; China's military strategy and activities; China's cyber capabilities and operations; China's foreign relations and issues related to Taiwan; China's compliance with bilateral and multilateral commitments; freedom of speech and access to information in China; and food, drug, and other product safety in China.¹³

Other Reports: Congress also requires one-time reports on a range of issues related to China. The NDAA for FY2021, for example, requires reports focused in full or in part on China and Taiwan (see **Table 1**).

Table 1. China-Related Report Requirements in the NDAA for FY2021

Section	Topic
283	National security researcher recruitment by China
1078	Preventing the resale of Chinese forced labor products in DOD commissaries and exchanges
1260B	U.S.-Taiwan medical security cooperation
1260C	China's defense industrial base

Assessment Executive Summary: Indo-Pacific Command's Investment Plan, Pacific Deterrence Initiative, Fiscal Years 2022 and 2023-2027," February 27, 2021.

¹² For example, DOD released a report in February 2020 summarizing the results of a "Defense Wide Review" of DOD organizations and activities with the goal of identifying resources that could be redirected to higher-priority DOD programs, particularly those for countering PRC and Russian military capabilities. U.S. Department of Defense, *Report to Congress: FY2021 Defense Wide Review*, January 6, 2020, pp. 2-6.

¹³ For a full list of the topics listed in the Commission's charter, see U.S.-China Economic and Security Review Commission, "Charter," at <https://www.uscc.gov/charter>.

Section	Topic
1260F	The effectiveness of the U.S. National Cyber Strategy to deter industrial espionage and cyber theft
1260G	China's United Front Work Department
1260H	Chinese military companies operating in the United States
1291	China's military influence in Africa
1299H	The transparency of China's defense budget
1299M	United States-Israel Defense Acquisition Advisory Group efforts to prevent Chinese acquisition of intellectual property or military technology associated with U.S.-Israel S&T cooperation
1614	Competition with China in space
1634	China's nuclear weapons program
6507	PRC money laundering
8424	China's military capabilities in the Arctic
9414	China's influence on the development of international standards for emerging technologies
9904	The involvement of Chinese entities in the U.S. microelectronics industrial base

Source: William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (P.L. 116-283).

The NDAA for FY2021 also includes report requirements that do not refer to China explicitly but that likely will yield reports with coverage of China or U.S. interests related to China. Such topics include U.S. military training range exercises in the Indo-Pacific region (Section 1073), “the use of distant-water fishing fleets by foreign governments as extensions of such countries’ official maritime security forces” (Section 1260I), and efforts by “authoritarian countries” to exploit the U.S. financial system (Section 6505).

Oversight of U.S.-China Military-to-Military Relations

The United States and China established formal military-to-military (mil-mil) ties in 1979, a year after the two countries established diplomatic relations. Since then, mil-mil relations have waxed and waned, with one side or the other periodically limiting ties in response to perceived transgressions. In recent years, military ties have encompassed regularly-scheduled dialogues and exchanges, a handful of military exercises, and ongoing confidence-building measures.¹⁴ Congress has passed legislation to limit, and enhance oversight of, these mil-mil relations with China.

The NDAA for FY2000 prohibits the Secretary of Defense from authorizing any military contact with the PLA that would “create a national security risk due to an inappropriate exposure” of the PLA to 12 operational areas of the U.S. military:

- force projection operations,
- nuclear operations,
- advanced combined-arms and joint combat operations,
- advanced logistical operations,
- chemical and biological defense and other capabilities related to weapons of mass destruction,

¹⁴ For more information on U.S.-China mil-mil relations, see CRS In Focus IF11712, *China Primer: U.S.-China Military-to-Military Relations*, by Caitlin Campbell.

- surveillance and reconnaissance operations,
- joint warfighting experiments and other activities related to transformations in warfare,
- military space operations,
- other advanced capabilities,
- arms sales or military-related technology transfers,
- release of classified or restricted information, and
- access to a DOD laboratory.

Previously, in the aftermath of the 1989 Tiananmen Square crackdown, the Foreign Relations Authorization Act for FY1990-1991 (P.L. 101-246) prohibited a range of U.S.-China mil-mil activities, including arms sales. Although some of these restrictions have been lifted, prohibitions remain on the issuance of export licenses for U.S. Munitions List items and crime control equipment to China. Congress has on several occasions prohibited the export of dual-use items to China as well.

Overview of the PLA

A force of approximately two million men and women, the PLA is divided into four services: the PLA Army, PLA Navy, PLA Air Force, and the PLA Rocket Force, as well as two sub-service forces, the Strategic Support Force (which is responsible for cyber, electronic, information, and space and counterspace operations), and the Joint Logistics Support Force.

Established in 1927 and reconstituted in 1949 with the end of the Chinese Civil War and founding of the PRC,¹⁵ the PLA is the armed wing of China's ruling party, the CCP.¹⁶ The CCP controls all levers of power in China, and its control of the military is absolute. As a "party army," the PLA serves the Party rather than the state, making the PLA unique among modern advanced militaries. Echoing Mao Zedong's famous assertion that "political power grows out of the barrel of a gun," China's 2019 defense white paper states the PLA is entrusted with "provid[ing] strategic support for consolidating the leadership of the [CCP] and the socialist system."¹⁷ China's leader, General Secretary and "core leader" of the CCP and State President Xi Jinping, has warned that the PLA "must never lose sight of the fact that following the Party's command is its core duty."¹⁸ As one defense analyst notes, "Unlike a national army dedicated to the defense of a state and its people, the PLA's purpose is to create political power for the Party."¹⁹ Perhaps the most vivid example of the CCP's use of the PLA to protect the Party was when it called on the PLA to end anti-government demonstrations in and around Tiananmen Square in 1989. Political education and oversight—including through the presence of political officers and other Party entities at every level of the PLA leadership hierarchy—are key features of the PLA's organization and activities.

¹⁵ The CCP established the PRC on October 1, 1949, after winning a civil war against the Nationalist (also known as Kuomintang or KMT) forces of the Republic of China, led by Chiang Kai-shek.

¹⁶ Timothy R. Heath, "Chapter 1: An Overview of China's National Military Strategy," in *China's Evolving Military Strategy*, ed. Joe McReynolds (Washington, DC: Jamestown Foundation, 2017), p. 8.

¹⁷ PRC State Council Information Office, *China's National Defense in the New Era*, July 2019.

¹⁸ Xi Jinping, "Build Strong National Defense and Powerful Military Forces," *Quishi*, December 8, 12, 2012 (excerpted from Xi Jinping, *The Governance of China*), at http://en.qstheory.cn/2020-12/18/c_575524.htm.

¹⁹ Edwin S. Cochran, "China's 'Three Warfares': People's Liberation Army Influence Operations," *International Bulletin of Political Psychology*, vol. 20, no. 3, September 7, 2020, p. 15.

The CCP exercises civilian oversight of the PLA through its Central Military Commission (CMC), China's top military decisionmaking body, which is roughly equivalent to the U.S. Joint Chiefs of Staff.²⁰ Xi has chaired the CMC since becoming the CCP General Secretary in 2012. Unlike DOD's relationship with the U.S. military, China's Ministry of National Defense—a civilian agency—does not govern the PLA, but instead manages the PLA's interactions with foreign militaries and defense agencies.²¹

China's military modernization drive began in earnest in 1978 during the “reform and opening” period ushered in by then-Chinese leader Deng Xiaoping. Reform and opening policies helped create the economic and fiscal conditions for the PRC to increase its defense spending. “National defense” was among the “four modernizations” goal initially set by former PRC leader Zhou Enlai and later championed by Deng, along with agriculture, industry, and science and technology.²² Since then, and particularly since the 1990s, China has engaged in a sustained and broad effort to transform the PLA from an infantry-heavy, low-technology, ground forces-centric military into a high-technology, networked force with an increasing emphasis on joint operations and naval and air power projection.²³

Xi, like his predecessors, has made military modernization a high priority. In late 2017, midway through his ambitious reform and reorganization of the PLA (discussed below), Xi formalized three milestone goals for China's armed forces by 2020, 2035, and “the mid-21st century.” He described them thus:

[We] will upgrade our military capabilities, and see that, by the year 2020, mechanization is basically achieved, [information technology] application has come a long way, and strategic capabilities have seen a big improvement. In step with our country's modernization process, we will modernize our military across the board in terms of theory, organizational structure, service personnel, and weaponry. We will make it our mission to see that by 2035, the modernization of our national defense and our forces is basically completed; and that by the mid-21st century our people's armed forces have been fully transformed into world-class forces.²⁴

Xi's signature effort, achieving the “China Dream” of a modern, strong, and prosperous country, includes “the dream of a strong military.” According to Xi, “To achieve the great revival of the Chinese nation, we must ensure there is unison between a prosperous country and strong military.”²⁵

²⁰ Andrew Scobell, “China's Real Strategic Culture: A Great Wall of the Imagination,” *Contemporary Security Policy*, vol. 35, no. 2 (2014), p. 215. China has both a Party and a State CMC, with identical memberships, but the State CMC exists in name only.

²¹ CRS Report R41007, *Understanding China's Political System*, by Susan V. Lawrence and Michael F. Martin.

²² Communiqué of the Third Plenary Session of the 11th Central Committee of the Communist Party of China, December 29, 1978, at http://www.bjreview.com/Special_Reports/2018/40th_Anniversary_of_Reform_and_Opening_up/Timeline/201806/t20180626_800133641.html.

²³ Analysts have identified three events in the 1990s as particularly driving China's accelerated military buildup: the U.S. military's display of overwhelming high-technology military force during the first Gulf War; the U.S. deployment of two aircraft carrier strike groups to waters near Taiwan in response to PRC military pressure against Taiwan in 1996; and the United States' accidental bombing of China's embassy in Belgrade in 1999.

²⁴ Xinhua, “Full text of Xi Jinping's report at 19th CPC National Congress,” November 3, 2017, at http://www.xinhuanet.com/english/special/2017-11/03/c_136725942.htm.

²⁵ Jeremy Page, “For Xi, a ‘China Dream’ of Military Power,” *Wall Street Journal*, March 13, 2013, at <https://www.wsj.com/articles/SB10001424127887324128504578348774040546346>.

Key Documents and Sources for Understanding the PLA

Unlike the United States, China does not publicize a single document that might be referred to as a national military strategy.²⁶ China's most important strategic military document is the **military strategic guideline**, which is not publicly available, although major contours of these guidelines can be identified from other documents and speeches.²⁷ The CMC has updated the military strategic guideline nine times since 1949, most recently in 2014.²⁸

Publicly-available documents that explain China's military strategy, organization, and activities include

Defense white papers: Published by China's State Council Information Office and largely intended for international audiences, defense white papers contain information about China's national security interests and military activities. They do not follow a particular format or consistently cover the same themes or topics. The most recent defense white papers were published in 2015 and 2019.

Science of Military Strategy: This product is authored by the Academy of Military Science, a PLA-affiliated research center. It is not an official PRC government or PLA document, but it "represents the apex of the PLA's professional military literature on the study of war" and "highlights the views of many of the PLA's leading strategists, some of whom are involved in the formulation of strategy or operational doctrine," according to one U.S. scholar of the PLA.²⁹ PLA scholars consider the *Science of Military Strategy* to be authoritative.³⁰ The most recent *Science of Military Strategy* is from 2013 (with previous editions in 1987 and 2001), so its insights may be dated. China's National Defense University, a PLA academic organization, also publishes its own *Science of Military Strategy* (with editions or revisions issued in 1999, 2015, 2017, and 2020).³¹ References in this report are to the Academy of Military Science's *Science of Military Strategy*.

Science of Campaigns: According to the U.S. Air University's China Aerospace Studies Institute, the *Science of Campaigns* is "a core document for Chinese military officer education" and describes the "thoughts, principles, and fighting methods" for 17 different military campaigns, among other things. It was last published in 2006 by China's National Defense University.³² Like the *Science of Military Strategy*, it is considered authoritative but is not published by the Chinese government or PLA.

Plans, speeches, and other documents: In addition to these core documents, details of China's military strategy and activities can be found in five-year plans and other plans, major speeches (such as by leaders to Party Congresses), as well as statements by PLA and Ministry of National Defense officials.

Comprehensive National Security Concept: Introduced by Xi in 2014 and issued internally in 2015, this document refers to China's national security strategy, broadly defined (rather than military strategy). It is viewed

²⁶ M. Taylor Fravel, *Active Defense: China's Military Strategy Since 1949* (New Jersey: Princeton University Press, 2019), p. 29.

²⁷ For an in-depth assessment of China's military strategic guidelines, see M. Taylor Fravel, *Active Defense: China's Military Strategy Since 1949* (New Jersey: Princeton University Press, 2019).

²⁸ Some scholars of China's military suggest China may have updated the military strategic guideline again since 2014. M. Taylor Fravel, "China's Military Strategy in the New Era," presentation at Fairbank Center for Chinese Studies, Harvard University, Cambridge, MA, April 25, 2021, at <https://www.youtube.com/watch?v=Am8l7uZ3UCk&t=2630s>; Joel Wuthnow, "What I Learned from the PLA's Latest Strategy Textbook," *Jamestown Foundation China Brief*, May 25, 2021, at <https://jamestown.org/program/what-i-learned-from-the-plas-latest-strategy-textbook/>.

²⁹ M. Taylor Fravel, "Chapter 2: China's Changing Approach to Military Strategy: The Science of Military Strategy from 2001 and 2013," in *China's Evolving Military Strategy*, ed. Joe McReynolds (Washington, DC: Jamestown Foundation, 2017), p. 43.

³⁰ American Mandarin Society, "Self-Study Syllabus on the Chinese People's Liberation Army," updated in September 2019, p. 7.

³¹ According to one scholar of the PLA, "It is unclear whether [the Academy of Military Science] will publish future editions of the [Science of Military Strategy]. PLA interlocutors have suggested that there may be a new division of labor where [the National Defense University] focuses on strategic level issues and [the Academy of Military Science] focuses on lower levels of warfare." Joel Wuthnow, "What I Learned from the PLA's Latest Strategy Textbook," *Jamestown Foundation China Brief*, May 25, 2021, at <https://jamestown.org/program/what-i-learned-from-the-plas-latest-strategy-textbook/>.

³² China Aerospace Studies Institute, "Science of Campaigns (2006)," In Their Own Words: Foreign Military Thought series. Translation.

by some as China's first national security strategy, and indicative of a new grand strategy for China, as envisioned by Xi.³³

Ongoing PLA Reform and Reorganization

In late 2015 and early 2016, Xi announced the most ambitious reform and reorganization of the PLA since the 1950s.³⁴ The reforms have two overarching objectives: (1) enabling joint operations—one of the force's persistent weaknesses—by reshaping and improving the PLA's command and control structure;³⁵ and (2) ensuring the PLA is loyal to the CCP and Xi.³⁶ According to one U.S. analyst of the PLA, the reforms will enable China to meet the aforementioned modernization goals and

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.³⁷

The PLA already has taken several steps in pursuit of the first objective, optimizing its structure for joint operations. Party leaders streamlined the PLA's command and control structures, giving more control to the CMC and its chairman, Xi.³⁸ They reorganized the military services to create a more equitable structure: elevating the missile force, originally known as the Second Artillery, to a full service and renaming it the PLA Rocket Force, and creating the sub-service Strategic Support Force and Joint Logistics Support Force to enable the other services to operate together more seamlessly. In addition, the CMC has sought to facilitate jointness by distributing resources more equitably among the services, including by reducing both troop numbers and the overall influence of the PLA Army, which had long been the dominant service of the PLA.³⁹ The reforms

³³ Testimony of Associate Professor at the Lyndon B. Johnson School of Public Affairs, University of Texas at Austin, Sheena Chestnut Greitens, in U.S.-China Economic and Security Review Commission, *U.S.-China Relations at the Chinese Communist Party's Centennial*, hearings, January 28, 2021, pp. 2-8.

³⁴ M. Taylor Fravel, "Chapter 2: China's Changing Approach to Military Strategy: The Science of Military Strategy from 2001 and 2013," in *China's Evolving Military Strategy*, ed. Joe McReynolds (Washington, DC: Jamestown Foundation, 2017), p. 40.

³⁵ The concept of jointness, defined by DOD as "activities, operations, organizations, etc., in which elements of two or more Military Departments participate," is a central feature of U.S. military organization and doctrine. U.S. Department of Defense, *DOD Dictionary of Military and Associated Terms (as of April 2018)*, p. 121. The PLA formally incorporated the concept of jointness into existing military theory in 1999. Wanda Ayuso and Lonnie Henley, "Aspiring to Jointness: PLA Training, Exercises, and Doctrine, 2008-2012," in *Assessing the People's Liberation Army in the Hu Jintao Era*, ed. Roy Kamphausen, David Lai, and Travis Tanner (Carlisle, PA: U.S. Army War College Press, 2014), p. 174.

³⁶ Testimony of Senior International/Defense Research at the RAND Corporation Cortez A. Cooper III, in U.S.-China Economic and Security Review Commission, *China's Military Reforms and Modernization: Implications for the United States*, hearings, February 15, 2018, pp. 1, 8, 9.

³⁷ Testimony of Senior International/Defense Research at the RAND Corporation Cortez A. Cooper III, in U.S.-China Economic and Security Review Commission, *China's Military Reforms and Modernization: Implications for the United States*, hearings, February 15, 2018, p. 2.

³⁸ Testimony of Senior International/Defense Research at the RAND Corporation Cortez A. Cooper III, in U.S.-China Economic and Security Review Commission, *China's Military Reforms and Modernization: Implications for the United States*, hearings, February 15, 2018, p. 9; U.S.-China Economic and Security Review Commission, *2016 Annual Report to Congress*, November 16, 2016, p. 205.

³⁹ The reduction of 300,000 troops, aimed at making the PLA leaner and more effective, focused primarily on the PLA Army. In addition, the PLA is striving to promote officers from the other services to top leadership positions that in the

replaced the PLA's seven military regions, which had been optimized for peacetime administrative functions and dominated by the ground forces, with five theater commands with delineated geographic responsibilities and a structure more conducive to joint operations (see **Figure 2**).⁴⁰

In addition to changes to the top levels of the PLA, significant “below the neck” structural changes are taking place. These include reorganizing troops from divisions and regiments into brigades, and standardizing these units within each of the services. The PLA also adjusted its training guidance and practices to reflect these structural changes.⁴¹

Although the reforms originally were slated to conclude by 2020, officials have more recently suggested that they will be ongoing through 2021-2022 as the PLA tests and fine-tunes major changes.⁴² It likely will take even longer to institutionalize these sweeping changes, shed longstanding bureaucratic and cultural tendencies, and achieve jointness.⁴³

past were occupied almost entirely by PLA Army officers. U.S.-China Economic and Security Review Commission, *2017 Annual Report to Congress*, November 15, 2017, pp. 169-170.

⁴⁰ Testimony of Senior International/Defense Research at the RAND Corporation Cortez A. Cooper III, in U.S.-China Economic and Security Review Commission, *China's Military Reforms and Modernization: Implications for the United States*, hearings, February 15, 2018, pp. 9-10; U.S.-China Economic and Security Review Commission, *2016 Annual Report to Congress*, November 16, 2016, pp. 205-206.

⁴¹ U.S.-China Economic and Security Review Commission, *2017 Annual Report to Congress*, November 15, 2017, pp. 169-170.

⁴² U.S. Department of Defense, *Annual Report to Congress on Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 160.

⁴³ David M. Finkelstein, “Initial Thoughts on the Reorganization and Reform of the PLA,” CNA, January 15, 2016, p. 22; testimony of independent analyst and former U.S. army attaché to Beijing and Hong Kong Lieutenant Colonel (ret.) Dennis J. Blasko, in U.S.-China Economic and Security Review Commission, *What Keeps Xi Up at Night: Beijing's Internal and External Challenges*, hearings, February 7, 2019, p. 14.

Figure 2. Map of China and the PLA Theater Commands

Source: Created by CRS. Map generated by CRS Visual Information Specialist Amber Wilhelm.

Note: China reorganized the seven military regions into five theater commands in 2016.

Xi appears to have made significant gains toward a second objective of consolidating Party control over and ensuring the loyalty of the armed forces. Xi has extended his national anti-corruption campaign to the military. This is widely seen as having allowed him to simultaneously curb waste and corruption and marginalize political rivals, strengthening his personal control over the armed forces.⁴⁴ Still, there are indications that Xi and other top leaders remain concerned, as PLA self-assessments in recent years have continued to question the loyalty of some unnamed PLA leaders to the CCP.⁴⁵ Some observers have raised the prospect that Xi's and the PLA's preoccupation with political loyalty could be undermining other elements of the military's modernization drive. According to one U.S. analyst, "from the operational perspective I suspect

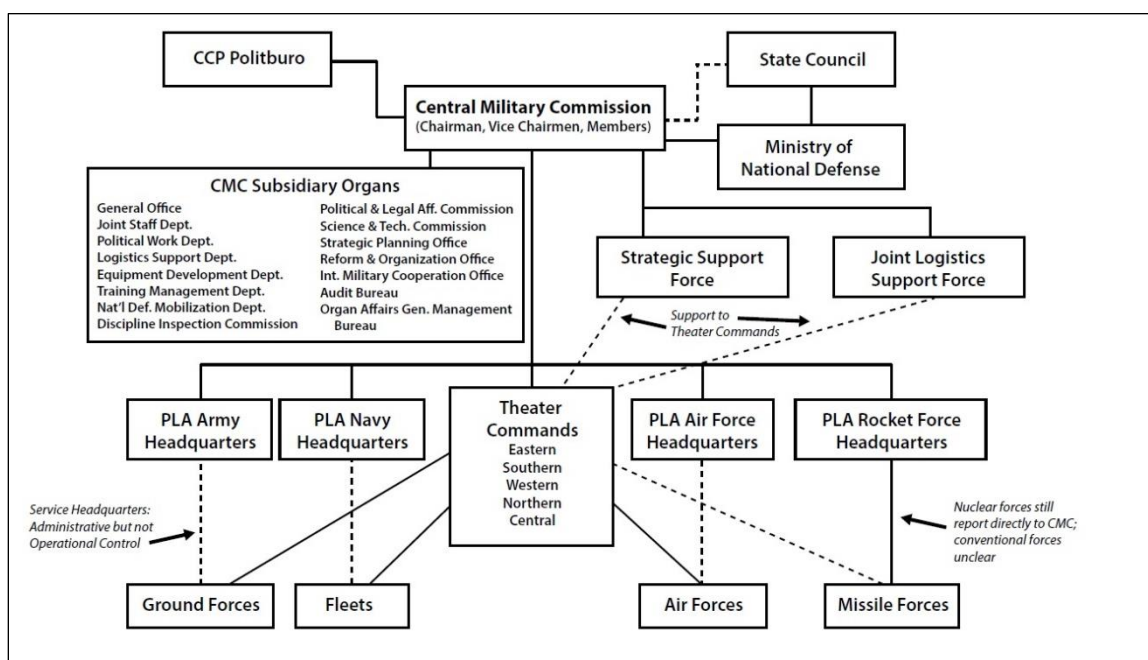
⁴⁴ Testimony of Cortez A. Cooper III, in U.S.-China Economic and Security Review Commission, *China's Military Reforms and Modernization: Implications for the United States*, hearings, February 15, 2018, p. 9.

⁴⁵ Testimony of independent analyst and former U.S. army attaché to Beijing and Hong Kong Lieutenant Colonel (ret.) Dennis J. Blasko, in U.S.-China Economic and Security Review Commission, *What Keeps Xi Up at Night: Beijing's Internal and External Challenges*, hearings, February 7, 2019, p. 3.

[the emphasis on political loyalty] deprives military leaders of scope for creativity and shifts their focus inward.”⁴⁶

Some of the aforementioned organizational changes (see **Figure 3**) aimed at facilitating jointness also serve to centralize the power and influence of Xi, the CCP, and the CMC.⁴⁷ In 2018, for example, the Party brought China's non-military armed forces—including the China Coast Guard and the People's Armed Police—under the control of the CMC.

Figure 3. Organizational Chart of the People's Liberation Army



Source: Joel Wuthnow and Phillip C. Saunders, “Chairman Xi Remakes the PLA,” in Phillip C. Saunders et al., eds., *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms* (Washington, DC: National Defense University Press), 2019, p. 6.

The PLA's Roles in Advancing China's National Security Interests

China's “National Defense Aims”

The PLA's missions and modernization path are informed by Party leaders' assessments of China's strategic priorities and the threats facing the Party and the country. China's most recent defense white paper, *China's National Defense in the New Era*, articulates China's national security interests. Published in July 2019 and written with foreign audiences in mind, the white paper lists the following as China's “national defense aims:”

⁴⁶ Franz-Stefan Gady, “Interview: Ben Lowson on Chinese PLA Ground Forces,” *The Diplomat*, April 8, 2020, at <https://thediplomat.com/2020/04/interview-ben-lowson-on-chinese-pla-ground-forces/>.

⁴⁷ Testimony of Senior International/Defense Research at the RAND Corporation Cortez A. Cooper III, in U.S.-China Economic and Security Review Commission, *China's Military Reforms and Modernization: Implications for the United States*, hearings, February 15, 2018, p. 9.

[T]o deter and resist aggression; to safeguard national political security, the people's security and social stability; to oppose and contain "Taiwan independence"; to crack down on proponents of separatist movements such as "Tibet independence" and the creation of "East Turkestan"; to safeguard national sovereignty, unity, territorial integrity and security; to safeguard China's maritime rights and interests; to safeguard China's security interests in outer space, electromagnetic space and cyberspace; to safeguard China's overseas interests; and to support the sustainable development of the country.⁴⁸

Some of these "national defense aims," such as safeguarding national political and social security and opposing efforts to formalize Taiwan's separation from mainland China, have been in place for several decades. Others are more recent, such as safeguarding China's overseas interests and its interests in space and cyberspace.

The PLA is one of many Party and state government organizations responsible for advancing China's national defense aims. In some cases it plays a primary security role (e.g., ensuring China can deter military action against it by a foreign adversary); in some cases it is not a major player (e.g., most domestic security activities, including campaigns against religious minorities in the name of countering domestic terrorism); and in some it serves as a back-up to civilian or paramilitary forces (e.g., asserting China's maritime claims).

Categories of PLA Operations

The PLA supports China's national defense aims through a range of activities, which China's leaders broadly categorize as war and non-war operations. China's concept of non-war operations is similar to the U.S. concept of military operations other than war.⁴⁹

War: This refers to all-out military conflict. The PLA has fought in three wars since the 1945-1949 Chinese Civil War: the Korean War (1950-1953), the 1962 China-India war, and the 1979 China-Vietnam war. It engaged in skirmishes with Vietnam through the 1980s.

Non-war: Non-war operations are military actions that occur below the threshold of all-out conflict. They range from regularly-scheduled activities, such as patrols, military diplomacy, and peacekeeping operations, to crisis-response activities, such as operations to counter perceived threats to China's borders, evacuation operations, responses to terrorist incidents, and humanitarian assistance/disaster relief operations. Some crisis-response activities—especially those related to perceived challenges to China's sovereignty or territorial integrity—could have the potential to escalate to war.⁵⁰ Recent examples of crisis management-related non-war military actions include the June 2020 clash between the PLA and Indian military along the contested China-India border, and the PLA's involvement in China's initial domestic response to Coronavirus Disease 2019 (COVID-19).

The PLA's counterpiracy patrols in the Gulf of Aden, ongoing since 2008, and its involvement in U.N. peacekeeping missions, have provided overseas operational experience. China currently is the ninth-largest contributor of peacekeepers to U.N. missions (as well as the top contributor among permanent U.N. Security Council members), and contributed more than 40,000 armed forces service members⁵¹ to 25 U.N. missions from 1990 to 2020.⁵²

⁴⁸ PRC State Council Information Office, *China's National Defense in the New Era*, July 2019.

⁴⁹ U.S. Department of Defense, *Annual Report to Congress on Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 32.

⁵⁰ Alastair Iain Johnston, "The Evolution of Interstate Security Crisis-Management Theory and Practice in China," *Naval War College Review*, vol. 69, no. 1 (Winter 2016), pp. 36-38; testimony of independent analyst Kevin McCauley, in U.S.-China Economic and Security Review Commission, *China's Military Power Projection and U.S. National Interests*, hearings, February 20, 2020 (Washington, DC), pp. 5, 9.

⁵¹ In addition to the PLA, the People's Armed Police also contributes personnel to U.N. peacekeeping missions.

⁵² PRC State Council Information Office, *China's Armed Forces: 30 Years of UN Peacekeeping Operations*, September 2020; United Nations Peacekeeping, "Troop and Police Contributors," updated January 31, 2021, at <https://peacekeeping.un.org/en/troop-and-police-contributors>.

Selected PRC national defense aims, and the PLA's role in advancing them, are summarized below.

Protecting China's Sovereignty, Territorial Integrity, and Unity

Bringing Taiwan Under PRC Control⁵³

Taiwan, which officially calls itself the Republic of China (ROC), is a self-ruled island democracy of 23.6 million people, located across the Taiwan Strait from mainland China. Although the PRC has never controlled Taiwan, it claims sovereignty over Taiwan, maintaining that mainland China and Taiwan are parts of "one China" whose sovereignty cannot be divided. China's leaders view Taiwan's permanent separation from the Mainland as the greatest challenge to its "core interest" of preserving China's "sovereignty and territorial integrity"⁵⁴ and "a long term-hidden danger obstructing the Chinese nation from realizing its great revival," according to an authoritative PRC strategy document, the 2013 edition of the *Science of Military Strategy*. PRC leaders and strategists believe U.S. support for Taiwan seeks to exploit and exacerbate the cross-Strait divide in order to contain China.⁵⁵

The CCP's highest national defense priority is unifying mainland China with Taiwan (to include, if necessary, unification by force). Ensuring that China can achieve its goals vis-à-vis Taiwan has been the primary aim of PRC military modernization for decades, and China's military strategic guidelines have identified Taiwan as the "operational target" of military preparations since 1993.⁵⁶ China's leaders anticipate that a military confrontation with Taiwan would entail "powerful enemy interference," a reference to the United States.⁵⁷

Even as China's military capabilities arrayed against Taiwan expand, and the balance of military power across the Strait increasingly favors the PRC,⁵⁸ China's leaders are increasingly concerned about Taiwan's status. These concerns are driven primarily by domestic political developments in Taiwan, as well as moves by the United States to upgrade its unofficial relations (including

⁵³ For more background on Taiwan, cross-Strait relations, and Taiwan's relations with the United States, see CRS Report R44996, *Taiwan: Issues for Congress*, by Susan V. Lawrence and Wayne M. Morrison; CRS In Focus IF10275, *Taiwan: Political and Security Issues*, by Susan V. Lawrence; and CRS In Focus IF10256, *U.S.-Taiwan Trade Relations*, by Karen M. Sutter.

⁵⁴ In 2003, Chinese officials began using the term "core interest" in reference to certain major national priorities. It has been used to describe Taiwan, Tibet, Xinjiang, the South China Sea, and the East China Sea, among other things. In 2009, a Chinese official defined "core interests" as: "[Firstly], uphold[ing] our basic systems, our national security; and secondly, the sovereignty and territorial integrity; and thirdly, economic and social sustained development." Hillary Rodham Clinton, Timothy Geithner, Dai Bingguo, and Wang Qishan, "Closing Remarks for U.S.-China Strategic and Economic Dialogue," Washington, DC, July 28, 2009.

⁵⁵ Shou Xiaosong, ed., *The Science of Military Strategy* (Beijing, China: Military Science Press, 2013). Translation. The U.S. Department of Defense assesses, "The PLA continues to prepare for contingencies in the Taiwan Strait to deter, and if necessary, compel Taiwan to abandon moves toward independence. The PLA also is likely preparing for a contingency to unify Taiwan with the mainland by force, while simultaneously deterring, delaying, or denying any third-party intervention on Taiwan's behalf." U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 96.

⁵⁶ M. Taylor Fravel, *Active Defense: China's Military Strategy Since 1949* (New Jersey: Princeton University Press, 2019), pp. 34-35.

⁵⁷ Shou Xiaosong, ed., *The Science of Military Strategy* (Beijing, China: Military Science Press, 2013). Translation. See also Nathan Beauchamp-Mustafaga, "Dare to Face the 'Strong Enemy 强敌': How Xi Jinping Has Made the PLA Talk About the United States," March 4, 2021, Sinocism, at <https://sinocism.com/p/dare-to-face-the-strong-enemy-how>.

⁵⁸ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, pp. 164-166.

defense ties) with Taiwan. China's 2019 defense white paper notes, "The fight against separatists"—an apparent reference to Taiwan's current elected government—"is becoming more acute."⁵⁹

Amid an uptick in PLA exercises and patrols near Taiwan since 2020, and in the context of Beijing's greater willingness to use economic and political tools to coerce Taiwan and its other neighbors in recent years, some observers wonder whether Beijing has concluded that the time will soon come to use military force against Taiwan.⁶⁰ The U.S. intelligence community's *Annual Threat Assessment* for 2021 states, "Beijing will press Taiwan authorities to move toward unification and will condemn what it views as increased U.S.-Taiwan engagement."⁶¹ In March 2021, the *Financial Times* quoted an anonymous "senior U.S. official" as saying, "China appears to be moving from a period of being content with the status quo over Taiwan to a period in which they are more impatient and more prepared to test the limits and flirt with the idea of unification."⁶²

Others portray China's leaders as reluctant to use force against Taiwan imminently, arguing that Beijing's current top priority is deterring independence—which it arguably has done successfully—rather than compelling unification by force.⁶³ Some further caution against the notion that Beijing has a timeline for unification with Taiwan, and the assumption that once China has sufficient military capability to prosecute a Taiwan invasion, it will do so. They argue that China's decision to use force against Taiwan likely would depend on factors such as political developments in Taiwan and U.S.-Taiwan relations, and whether China's leaders "perceive that the door to achieving their goal is opening, closing, or standing still."⁶⁴

Protecting "Unity" in Mainland China: Hong Kong, Tibet, and Xinjiang⁶⁵

Tibet and Xinjiang are autonomous regions (Tibet Autonomous Region and Xinjiang Uyghur Autonomous Region, respectively) in western China whose relations with Beijing have long been fraught. Both regions are home to ethnic minorities (including Tibetans in Tibet and Uyghurs and other minorities in Xinjiang) that have their own distinct religious, cultural, linguistic, and historical identities, and are home to groups that have advocated for greater autonomy within, and

⁵⁹ PRC State Council Information Office, *China's National Defense in the New Era*, July 2019.

⁶⁰ For an example of the arguments and questions surrounding China's capability and willingness to use military force, see Center for Strategic and International Studies ChinaPower, "Online Event: ChinaPower: Up for Debate 2020—Debate 4; Proposition: Within the Next Five Years, China Will Use Significant Military Force Against a Country on Its Periphery," December 9, 2020.

⁶¹ Office of the Director of National Intelligence, *Annual Threat Assessment of the U.S. Intelligence Community*, April 9, 2021.

⁶² Demetri Sevastopulo and Kathrin Hille, "U.S. Fears China Is Flirting with Seizing Control of Taiwan," *Financial Times*, March 26, 2021.

⁶³ Richard Bush, Bonnie Glaser, and Ryan Hass, "Opinion: Don't Help China by Hying Risk of War over Taiwan," NPR, April 8, 2021.

⁶⁴ Richard Bush, "From Persuasion to Coercion: Beijing's Approach to Taiwan and Taiwan's Response," The Brookings Institution, November 2019, p. 7; John Culver and Ryan Hass, "Understanding Beijing's Motives Regarding Taiwan, and America's Role: A 35-year CIA Officer's View," The Brookings Institution, March 30, 2021.

⁶⁵ For more information on China's outlook and policies toward Tibet and Xinjiang, see CRS Report R45956, *Human Rights in China and U.S. Policy: Issues for the 116th Congress*, by Thomas Lum and Michael A. Weber; and CRS In Focus IF10281, *China Primer: Uyghurs*, by Thomas Lum and Michael A. Weber. For more information on Hong Kong, see CRS In Focus IF11711, *Hong Kong: Key Issues in 2021*, by Michael F. Martin; CRS Report R46473, *China's National Security Law for Hong Kong: Issues for Congress*, by Susan V. Lawrence and Michael F. Martin; and CRS In Focus IF10956, *Hong Kong: Recent Developments and U.S. Relations*, by Michael F. Martin.

in some cases independence from, the PRC. The Hong Kong Special Administrative Region, which was a British colony from 1842 to 1997 before Britain transferred sovereignty to the PRC, also has a cultural and social identity distinct from that of the mainland, and legally enjoys a degree of autonomy from Mainland China (although Beijing has encroached on that autonomy in recent years). Many Hong Kong residents have protested the perceived erosion of their rights and freedoms by the Hong Kong government and PRC.⁶⁶

To assert control over these sometimes-restive areas in mainland China, Beijing frequently has employed policies of assimilation, coercion, and violence, often in the name of countering terrorism or separatism.⁶⁷ Although China's domestic security forces, not the PLA, are primarily responsible for these domestic "stability maintenance" operations, the PLA is tasked with "strengthen[ing] efforts in operations against infiltration, separatism and terrorism so as to maintain China's political security and social stability."⁶⁸ For example, the PLA's Western Theater Command, in addition to being responsible for contingencies involving South and Central Asian countries, is also tasked with domestic counterterrorism responsibilities in Tibet and Xinjiang.⁶⁹ In Hong Kong, the PLA operates a garrison, which historically has maintained a low profile, although analysts and diplomats reported increased troop numbers and a higher degree of readiness amid rising unrest in Hong Kong in 2019.⁷⁰ Counterterrorism constitutes a significant area of focus in the PLA's international activities (see "Countering Terrorism," below).

Defending and Advancing Claims over Areas Disputed Between China and Its Neighbors⁷¹

China has resolved many territorial disputes with its neighbors since the PRC's founding in 1949, but remains party to several land border and maritime disputes,⁷² some of which have become

⁶⁶ CRS In Focus IF11711, *Hong Kong: Key Issues in 2021*, by Michael F. Martin.

⁶⁷ Xi Jinping, the current General Secretary of the CCP and President of the PRC, has referred to Xinjiang as the "frontline" of China's counterterrorism efforts. The Trump and Biden administrations referred to China's policies in Xinjiang as genocide. Murray Scot Tanner and James Bellaqua, *China's Response to Terrorism*, CNA, June 2016, p. 12; U.S. Department of State, "Determination of the Secretary of State on Atrocities in Xinjiang," January 19, 2021, at <https://2017-2021.state.gov/determination-of-the-secretary-of-state-on-atrocities-in-xinjiang/index.html>; testimony of Secretary of State nominee Antony Blinken in Senate Foreign Relations Committee, *Nominations*, hearings, January 19, 2021; U.S. Department of State, "Department Press Briefing—March 8, 2021," March 8, 2021, at <https://www.state.gov/briefings/department-press-briefing-march-8-2021/>.

⁶⁸ PRC State Council Information Office, *China's Military Strategy*, May 27, 2015. Although the People's Armed Police and China Coast Guard are under control of the CMC since 2018, they are not part of the PLA, and are not discussed at length in this report.

⁶⁹ Kevin McCauley, "Snapshot: China's Western Theater Command," *Jamestown Foundation China Brief*, January 13, 2017, at <https://jamestown.org/program/snapshot-chinas-western-theater-command/>; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 104.

⁷⁰ Greg Torode, James Pomfret, and David Lague, "China Quietly Doubles Troop Levels in Hong Kong, Envoys Say," Reuters, September 30, 2019, at <https://www.reuters.com/investigates/special-report/china-army-hongkong/>.

⁷¹ CRS In Focus IF10281, *China Primer: Uyghurs*, by Thomas Lum and Michael A. Weber.

⁷² Since 1949, China has resolved 17 of its 23 territorial disputes. China has resolved all but two land border disputes (with India and Bhutan). China has disputes involving all eight of its maritime neighbors over four offshore areas: Taiwan, the Senkaku Islands in the East China Sea, the Paracel Islands in the South China Sea, and the Spratly Islands in the South China Sea. M. Taylor Fravel, "Territorial and Maritime Boundary Disputes in Asia," in Saadia M. Pekkanen, John Ravenhill, and Rosemary Foot, eds., *Oxford Handbook of the International Relations in Asia*, New York: Oxford University Press (2014).

more contentious in recent years. China's 2019 defense white paper states, "China surpasses most [other] countries in the number of neighboring countries, the length of land border, and the complexity of maritime security. Therefore, it is a daunting task for China to safeguard its territorial sovereignty, maritime rights and interests, and national unity."⁷³ Chinese officials, including Xi, have frequently insisted China will not give up "even one inch" of its claimed territory.⁷⁴

In the South China Sea, the PRC claims "indisputable sovereignty" over several island chains and geographic features—including the Paracel Island chain, the Spratly Island chain, and Scarborough Shoal—and these features' "adjacent waters." On maps, China depicts its claims with a dashed line (see **Figure 2**) that, if connected, would enclose an area covering approximately 62% of the sea, according to the U.S. Department of State. (The estimate is based on a definition of the South China Sea's geographic limits that includes the Taiwan Strait, the Gulf of Tonkin, and the Natuna Sea).⁷⁵ Some or all of these features also are claimed by Brunei, the Philippines, Malaysia, Taiwan, and Vietnam.⁷⁶ In the East China Sea, China claims the Senkaku Islands (which Japan calls the Senkaku-shoto, China calls the Diaoyu Dao, and Taiwan calls the Diaoyutai Lieyu), which also are claimed by Japan and Taiwan.⁷⁷ Tensions over these disputes have fluctuated in recent years, but generally have intensified since 2010, due in large part to China's efforts to defend and consolidate control over its claims.

China's land border with India, where Tibet and Xinjiang meet northern India in the Himalayas, features territorial disputes that sparked a war in 1962 and clashes in 1967, and that have been a major source of friction between China and India ever since. In 2020, an armed clash along the border resulted in the reported deaths of 20 Indian and 4 Chinese soldiers, the first combat-related deaths along the border since 1975.

The PLA's roles in defending these contested areas are varied. The PLA takes a leading role, for example, in both peacetime and wartime activities along contested areas of the China-India border. Here, ground, air, and rocket forces affiliated with the PLA's Western Theater Command are responsible for patrolling and conducting operations along the border (called the Line of Actual Control).⁷⁸ By contrast, the PLA generally plays a secondary role in the peacetime enforcement and defense of China's claims in the maritime realm, with the China Coast Guard and the People's Armed Forces Maritime Militia serving as the primary actors. (See textbox on "China's Three Maritime Forces" below for a more in-depth discussion of the division of labor among China's maritime forces.) The PLA conducts exercises regularly in the South China Sea and also operates equipment and forces on artificial islands China has built in the South China Sea since 2013.

⁷³ PRC State Council Information Office, *China's National Defense in the New Era*, July 2019.

⁷⁴ Phil Stewart, Ben Blanchard, "Xi Tells Mattis China Won't Give up 'Even One Inch' of Territory," Reuters, June 26, 2018, at <https://www.reuters.com/article/us-china-usa-defence/xi-tells-mattis-china-wont-give-up-even-one-inch-of-territory-idUSKBN1JN03T>.

⁷⁵ U.S. Department of State, "Limits in the Seas, No. 143, China: Maritime Claims in the South China Sea," December 5, 2014, p. 4.

⁷⁶ For background on the South China Sea disputes, see CRS In Focus IF10607, *China Primer: South China Sea Disputes*, by Ben Dolven, Susan V. Lawrence, and Ronald O'Rourke.

⁷⁷ For background on the Senkakus dispute, see CRS Report R42761, *The Senkakus (Diaoyu/Diaoyutai) Dispute: U.S. Treaty Obligations*, by Mark E. Manyin.

⁷⁸ Kevin McCauley, "Snapshot: China's Western Theater Command," *Jamestown Foundation China Brief*, January 13, 2017, at <https://jamestown.org/program/snapshot-chinas-western-theater-command/>.

Deterring Nuclear Attack and Maintaining Counterattack Capability

PRC leaders since Mao Zedong have argued that a nuclear arsenal is necessary to deter adversaries from using or threatening to use nuclear weapons against China, and failing that, to ensure the PRC can reliably launch a counterattack with its nuclear forces.⁷⁹ From the 1950s through the 1970s, China's leaders viewed the Soviet Union and the United States as the two nuclear threats facing China.⁸⁰ Since the Sino-Soviet rapprochement at the end of the Cold War, China's nuclear strategy and force modernization efforts have been aimed primarily at deterring and countering the United States.⁸¹ The 2013 *Science of Military Strategy* portrays the United States as seeking to undermine the PRC's nuclear deterrent and counterattack capabilities with the development of missile defense and conventional prompt global strike capabilities.⁸²

China has maintained a policy of “no first use” of nuclear weapons since it conducted its first nuclear weapons test in 1964 and declared, “The Chinese Government hereby solemnly declares that China will never at any time and under any circumstances be the first to use nuclear weapons.”⁸³ China later expanded on this pledge, promising it would not under any circumstance “use or threaten to use nuclear weapons against non-nuclear weapon states or nuclear-weapon-free zones.”⁸⁴ China has consistently reiterated these pledges, most recently in its 2019 defense white paper. China is the only nuclear power that has declared an unconditional no first use policy. Among some analysts in China and the West there is debate about the particulars, and possible evolution, of China's no first use policy.⁸⁵

The PLA has been tasked with maintaining strategic deterrence and the capability to carry out nuclear counterattack since 1966.⁸⁶ China's 2019 defense white paper states China pursues a nuclear strategy of “self-defense,” keeping its nuclear capabilities “at the minimum level” required to “maintain national strategic security by deterring other countries from using or threatening to use nuclear weapons against China.”⁸⁷ In 2020, DOD assessed that China's nuclear

⁷⁹ Xu Weidi, “China's Security Environment and the Role of Nuclear Weapons,” in *Understanding Chinese Nuclear Thinking*, ed. Li Bin and Tong Zhao (Washington, DC: Carnegie Endowment for International Peace, 2016), pp. 21-27; Gregory Kulacki, *The Chinese Military Updates China's Nuclear Strategy*, Union of Concerned Scientists, March 2015, p. 1.

⁸⁰ Xu Weidi, “China's Security Environment and the Role of Nuclear Weapons,” in *Understanding Chinese Nuclear Thinking*, ed. Li Bin and Tong Zhao (Washington, DC: Carnegie Endowment for International Peace, 2016), p. 23.

⁸¹ Shou Xiaosong, ed., *The Science of Military Strategy* (Beijing, China: Military Science Press, 2013). Translation; Fiona S. Cunningham and M. Taylor Fravel, “Assuring Assured Retaliation: China's Nuclear Posture and U.S.-China Strategic Stability,” *International Security* vol. 40, no. 2 (Fall 2015); Gregory Kulacki, *The Chinese Military Updates China's Nuclear Strategy*, Union of Concerned Scientists, March 2015, pp. 5-6.

⁸² Shou Xiaosong, ed., *The Science of Military Strategy* (Beijing, China: Military Science Press, 2013). Translation.

⁸³ “Statement of the Government of the People's Republic of China,” Wilson Center Digital Archive, October 16, 1964, at <https://digitalarchive.wilsoncenter.org/document/134359>.

⁸⁴ Statement by the Government of the People's Republic of China, “Statement by the Government of the People's Republic of China on the Question of Nuclear Testing. 5 October 1993.”

⁸⁵ Pan Zhengqiang, “China's No First Use of Nuclear Weapons,” in *Understanding Chinese Nuclear Thinking*, ed. Li Bin and Tong Zhao (Washington, DC: Carnegie Endowment for International Peace, 2016), pp. 67-72; Caitlin Talmadge, “The U.S.-China Nuclear Relationship: Why Competition is Likely to Intensify,” *The Brookings Institution*, September 30, 2019; Nan Li, “China's Evolving Nuclear Strategy: Will China Drop ‘No First Use?’” *Jamestown Foundation China Brief*, January 12, 2018, at <https://jamestown.org/program/chinas-evolving-nuclear-strategy-will-china-drop-no-first-use/>; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019*, May 2, 2019, p. 66.

⁸⁶ Federation of American Scientists, “Second Artillery Corps,” at <https://fas.org/nuke/guide/china/agency/2-corps.htm>.

⁸⁷ PRC State Council Information Office, *China's National Defense in the New Era*, July 2019.

modernization efforts suggest it is “on a trajectory to exceed the size of a ‘minimum deterrent’ as described in the PLA’s own writings,” although some nongovernmental analysts question whether this is the case.⁸⁸ (See “The PLA’s Nuclear Modernization and Arsenal” below for additional discussion of China’s nuclear forces.)

Countering Terrorism

Although, as noted earlier, PRC counterterrorism efforts predominantly focus on perceived domestic threats,⁸⁹ Beijing has increased attention on the international dimension of terrorism as China’s interests—and people—have become more globally dispersed.⁹⁰ PRC authorities frequently allege that “foreign forces” are a factor in reported acts of terrorism committed by Uyghurs,⁹¹ and Beijing has voiced concern about Uyghurs becoming radicalized overseas and then returning to China to commit acts of terror.⁹² (For example, China alleged that more than 100 Chinese nationals joined the Islamic State in Syria around 2016; estimates of Uyghur fighters that traveled to the Middle East to join terrorist networks during the mid-2010s range from around 100 to several thousand.⁹³) Chinese citizens traveling and working in foreign countries have been targeted by terrorists as well. In Pakistan, for example, groups that oppose China’s economic projects in the country and its treatment of Uyghurs in Xinjiang have, on multiple occasions, threatened, attempted, or carried out attacks on Chinese nationals and China-linked facilities or companies.⁹⁴ Four people died when members of a separatist Pakistani group attacked China’s consulate in Karachi, Pakistan, in 2018.⁹⁵ From 2006 to 2016, 40 PRC nationals were reported to have been killed in terrorist attacks outside China.⁹⁶

⁸⁸ U.S. Department of Defense, *Annual Report to Congress on Military and Security Developments Involving the People’s Republic of China 2020*, August 21, 2020, p. 88; Hans M. Kristensen and Matt Korda, “Chinese Nuclear Forces, 2020,” *Bulletin of the Atomic Scientists*, vol. 76, no. 6, December 10, 2020, p. 446.

⁸⁹ China’s 2019 defense white paper noted that since 2014, China’s internal security forces have been involved in “taking out 1,588 violent terrorist gangs and capturing 12,995 terrorists” in Xinjiang. PRC State Council Information Office, *China’s National Defense in the New Era*, July 2019.

⁹⁰ PRC State Council Information Office, *China’s National Defense in the New Era*, July 2019; Dawn Murphy, “China’s Approach to International Terrorism,” United States Institute of Peace *PeaceBrief* 235, September 2017, p. 2; Murray Scot Tanner and James Bellaqua, *China’s Response to Terrorism*, CNA, June 2016, p. 8.

⁹¹ Human Rights Watch, “China: The Details of Terrorism Convictions,” March 16, 2017, at <https://www.hrw.org/news/2017/03/16/china-disclose-details-terrorism-convictions>; Nicholas Dynon, “The Language of Terrorism in China: Balancing Foreign and Domestic Policy Imperatives,” *Jamestown Foundation China Brief*, January 9, 2014, at <https://jamestown.org/program/the-language-of-terrorism-in-china-balancing-foreign-and-domestic-policy-imperatives/>.

⁹² Sheena Chestnut Greitens, Myunghee Lee, and Emir Yazici, “Counterterrorism and Preventive Repression: China’s Changing Strategy in Xinjiang,” *International Security* vol. 44, no. 3 (Winter 2019/2020), pp. 32-36.

⁹³ Jeremy Page, “Over 100 Chinese Fighters have Joined Islamic State in Syria,” *Wall Street Journal*, July 25, 2016, at <https://www.wsj.com/articles/china-terror-claims-bolstered-by-new-evidence-1469435872>; Sheena Chestnut Greitens, Myunghee Lee, and Emir Yazici, “Counterterrorism and Preventive Repression: China’s Changing Strategy in Xinjiang,” *International Security* vol. 44, no. 3 (Winter 2019/2020), pp. 34-35.

⁹⁴ Zia Ur Rehman, “Pakistani Militants Shift Focus to Cities in Targeting of Chinese,” *Nikkei Asia*, December 27, 2020, at <https://asia.nikkei.com/Spotlight/Belt-and-Road/Pakistani-militants-shift-focus-to-cities-in-targeting-of-Chinese>; Saeed Shah, “Gunmen Attack Pakistan Stock Exchange, Citing Its Link to China,” *Wall Street Journal*, June 29, 2020, at <https://www.wsj.com/articles/gunmen-attack-pakistan-stock-exchange-11593427896>.

⁹⁵ BBC, “Karachi Attack: China Consulate Attack leaves four dead,” November 23, 2018, at <https://www.bbc.com/news/world-asia-46313136>.

⁹⁶ Mathieu Duchâtel, “Terror Overseas: Understanding China’s Evolving Counter-Terror Strategy,” European Council on Foreign Relations, October 26, 2016, at https://www.ecfr.eu/publications/summary/terror_overseas_understanding_chinas_evolution_counter_terror_strategy7160; Murray Scot Tanner and James

As noted previously, both the PLA and China's domestic security forces are tasked with conducting counterterrorism missions. PLA counterterrorism efforts are most visible through China's efforts to engage countries along its western frontier in ways that support Beijing's objectives in Xinjiang, primarily through participation in—and de facto leadership of—the Shanghai Cooperation Organization, the central focus of which is combatting terrorism in and around Central Asia.⁹⁷ Under the auspices of the Shanghai Cooperation Organization, the PLA has conducted numerous counterterrorism exercises, many of which also feature conventional combat operations such as air defense and strike operations.⁹⁸ The PLA also is party to a Quadrilateral Cooperation and Coordination Mechanism, which was established in 2016 with the militaries of Afghanistan, Pakistan, and Tajikistan, and is focused on countering terrorism.⁹⁹

Protecting China's Expanding Global Interests

Former Chinese leader Deng Xiaoping's policy of "reform and opening" of China to the world, launched in 1978, began the PRC's integration into the global economy. This trend has accelerated since 1999, when the CCP encouraged Chinese companies to "go global" and invest abroad.¹⁰⁰ China is now deeply involved in global trade, shipping, and investment, and it both influences and depends on global markets and shipping lanes. Protecting Chinese citizens, businesses, and investments overseas, sometimes in unstable parts of the world, has emerged as a relatively new challenge for China's government.¹⁰¹

In 2004, then-CCP leader Hu Jintao tasked the PLA with a new mission set reflecting this and other challenges. The four "new historic missions" posit that as China's economic interests expand geographically, the PLA needs to broaden the scope of its national defense missions in order to protect Chinese economic and human assets abroad.¹⁰² The new missions also acknowledge that as the forces of globalization integrate China into the international community,

Bellaqua, *China's Response to Terrorism*, CNA, June 2016, p. 5.

⁹⁷ The current member states of the Shanghai Cooperation Organization, established in 2001, are China, India, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Tajikistan, and Uzbekistan. For information on the Shanghai Cooperation Organization's evolution and China's objectives, see Matthew Southerland, Will Green, and Sierra Janik, "The Shanghai Cooperation Organization: A Testbed for Chinese Power Projection," U.S.-China Economic and Security Review Commission, November 12, 2020.

⁹⁸ Phillip P. Saunders and Jiunwei Shyy, "China's Military Diplomacy," in Scott D. McDonald and Michael C. Burgoyne, eds., *China's Global Influence: Perspectives and Recommendations* (Honolulu, HI: Asia Pacific Center for Security Studies), 2019, p. 216.

⁹⁹ According to a joint statement by the parties, the mechanism was established "to coordinate with and support each other in a range of areas, including study and judgment of counter terrorism situation, confirmation of clues, intelligence sharing, anti-terrorist capability building, joint anti-terrorist training and personnel training, and that the coordination and cooperation will be exclusive to the four countries." Yao Jianing, "Afghanistan, China, Pakistan, Tajikistan Issue Joint Statement on Anti-Terrorism," China Military Online, August 4, 2016, at http://english.chinamil.com.cn/news-channels/2016-08/04/content_7191537.htm.

¹⁰⁰ Organization for Economic Cooperation and Development, *China Going Global: Between Ambition and Capacity*, April 2017, p. 3.

¹⁰¹ Timothy R. Heath, *China's Pursuit of Overseas Security*, RAND Corporation, 2018, pp. 7-13.

¹⁰² The New Historic Missions can be summarized as (1) reinforcing the PLA's loyalty to the CCP; (2) ensuring China's economic development by defending China's sovereignty, territorial integrity, and domestic security; (3) defending China's expanding national interests, especially in the maritime, space, and cyberspace domains; and (4) preventing the outbreak of conflict by improving deterrence and through international security cooperation. Daniel M. Hartnett, "The 'New Historic Missions': Reflections on Hu Jintao's Military Legacy," in *Assessing the People's Liberation Army in the Hu Jintao Era*, ed. Roy Kamphausen et al. (Carlisle, PA: U.S. Army War College Press, 2014), pp. 33-34.

China increasingly needs to be able to respond to global crises.¹⁰³ Partly in response to this expansion of China's national interests, the PLA began incorporating non-war military operations in its mission set in 2008.¹⁰⁴

In addition to protecting China's global assets, observers are questioning whether and how the PLA might leverage or benefit from these assets in order to secure access or resources as it operates more globally. For example, some analysts have suggested the PRC could leverage projects—particularly port infrastructure—under its Belt and Road Initiative, an ambitious effort to boost economic links across continents, to facilitate points of access by the PLA.¹⁰⁵

Major Features of China's Strategic Outlook

The following concepts, trends, and priorities define or inform China's military strategy and strategic outlook. They are summarized here to contextualize enduring and recent features of China's military strategy and activities, and are not comprehensive.

Active Defense

The principle of “active defense” has been the defining element of Chinese strategic thought since 1949.¹⁰⁶ Originating with Mao Zedong, the strategy of active defense has evolved somewhat over time, but generally prescribes the ways in which China can defend itself and prevail over a militarily superior adversary.¹⁰⁷ China's 2019 defense white paper summarizes the concept thus:

The military strategic guideline for a new era adheres to the principles of defense, self-defense, and post-strike response, and adopts active defense. It keeps to the stance that “we will not attack unless we are attacked, but we will surely counterattack if we are attacked,” places emphasis on both containing and winning wars, and underscores the unity of strategic defense and offense at operational and tactical levels.¹⁰⁸

This was echoed in August 2020 remarks by PRC Vice Foreign Minister Le Yucheng, who said in a media interview focused on U.S.-China tensions, “Our guiding principles are very clear. We do not provoke, and we will not flinch from provocations, either.... We never fire the first shot.”¹⁰⁹

¹⁰³ Daniel M. Hartnett, “The ‘New Historic Missions’: Reflections on Hu Jintao's Military Legacy,” in *Assessing the People's Liberation Army in the Hu Jintao Era*, ed. Roy Kamphausen et al. (Carlisle, PA: U.S. Army War College Press, 2014), pp. 33-35, 49, 55, 57.

¹⁰⁴ Morgan Clemens, “Chapter 11: PLA Thinking on Military Operations Other Than War,” in *China's Evolving Military Strategy*, ed. Joe McReynolds (Washington, DC: Jamestown Foundation, 2017), p. 359.

¹⁰⁵ A 2018 DOD report, for example, assessed that some investments related to the Belt and Road Initiative “could create potential military advantages for China, should it require access to selected foreign ports to pre-position the necessary logistics support to sustain naval deployments to protect its growing interests in waters as distant as the Indian Ocean, Mediterranean Sea, and Atlantic Ocean.” U.S. Department of Defense, *Assessment on U.S. Defense Implications of China's Expanding Global Access*, December 2018, p. 12. For more on the Belt and Road Initiative, also called the “One Belt, One Road” initiative, see CRS In Focus IF11735, *China's “One Belt, One Road” Initiative: Economic Issues*, by Karen M. Sutter, Andres B. Schwarzenberg, and Michael D. Sutherland.

¹⁰⁶ PRC State Council Information Office, *China's Military Strategy*, May 27, 2015; M. Taylor Fravel, *Active Defense: China's Military Strategy Since 1949* (New Jersey: Princeton University Press, 2019), p. 62.

¹⁰⁷ M. Taylor Fravel, *Active Defense: China's Military Strategy Since 1949* (New Jersey: Princeton University Press, 2019), p. 61.

¹⁰⁸ PRC State Council Information Office, *China's National Defense in the New Era*, July 2019.

¹⁰⁹ PRC Ministry of Foreign Affairs, “Reviving the Cold War Is Anachronistic—Vice Minister Le Yucheng's Exclusive Interview with Guancha.cn,” August 12, 2020, at https://www.fmprc.gov.cn/mfa_eng/wjbxw/

The strategy of active defense does not preclude the use of offensive operations or tactics, as the white paper states, and China historically has conducted offensive military operations against other countries, most notably when it invaded Vietnam in 1979. Further, some Chinese strategists suggest China might employ offensive military operations in response to political, rather than military, events (for example, in response to moves toward *de jure* independence by Taiwan's government).¹¹⁰ According to DOD, "Active defense is neither a purely defensive strategy nor limited to territorial defense. Active defense encompasses offensive and preemptive aspects. It can apply to the PRC acting externally to defend its interests."¹¹¹ It remains to be seen whether the meaning of active defense, which presumes China's military inferiority, will be reimagined or even abandoned as the country's military power grows.¹¹²

The Importance of Advanced Technology and "Informatization"

In 1993, China updated its official military strategic guidance to reflect the growing importance of advanced technology in warfare and national defense. This was informed in large part by the success of U.S. military operations against Iraq in Operation Desert Storm in 1991, which demonstrated to Chinese strategists the enormous advantage that a high-technology force has over less technologically-advanced adversaries. The PRC revised China's military strategy again in 2004 and 2014 to focus specifically on "informatization,"¹¹³ the application of advanced information technology across all aspects of military operations, particularly in support of command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) capabilities.¹¹⁴ China's 2015 defense white paper assesses

The world revolution in military affairs (RMA) is proceeding to a new stage. Long-range, precise, smart, stealthy and unmanned weapons and equipment are becoming increasingly sophisticated. Outer space and cyber space have become new commanding heights in strategic competition among all parties. The form of war is accelerating its evolution to informationization. World major powers are actively adjusting their national security strategies and defense policies, and speeding up their military transformation and force restructuring. The aforementioned revolutionary changes in military technologies and the form of war have not only had a significant impact on the international political and military landscapes, but also posed new and severe challenges to China's military security.¹¹⁵

t1805747.shtml.

¹¹⁰ M. Taylor Fravel, *Active Defense: China's Military Strategy Since 1949* (New Jersey: Princeton University Press, 2019), pp. 62-63.

¹¹¹ U.S. Department of Defense, *Annual Report to Congress on Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 27.

¹¹² M. Taylor Fravel, *Active Defense: China's Military Strategy since 1949* (New Jersey: Princeton University Press, 2019), p. 63.

¹¹³ "Informatization" is sometimes translated as "informationization."

¹¹⁴ M. Taylor Fravel, *Active Defense: China's Military Strategy Since 1949* (New Jersey: Princeton University Press, 2019), p. 35; M. Taylor Fravel, "Shifts in Warfare and Party Unity: Explaining China's Changes in Military Strategy," *International Security*, vol. 42, no. 3 (Winter 2017/2018), pp. 79-82; Joe McReynolds and James Mulvenon, "The Role for Informatization in the People's Liberation Army Under Hu Jintao," in Roy Kamphausen, David Lai, and Travis Tanner, eds., *Assessing the People's Liberation Army in the Hu Jintao Era*, Strategic Studies Institute, US Army War College, April 1, 2014, pp. 207-256; Dennis J. Blasko, *The Chinese Army Today: Tradition and Transformation for the 21st Century*, (London: Routledge, 2006), pp. 12-13.

¹¹⁵ PRC State Council Information Office, *China's Military Strategy*, May 27, 2015.

According to two U.S. analysts of the PLA, “Informatization is the core of everything the [PLA] wants to accomplish. From high-tech missions in space and cyberspace, to long-range precision strike, ballistic missile defense, and naval deployments abroad, the ability to transmit, process, and receive information is a vital enabler.”¹¹⁶ China’s efforts to informatize the PLA extend to cultivating and integrating emerging technologies such as quantum computing and artificial intelligence as well.

Maritime, Cyber, and Space as “Critical Security Domains”

Official statements and Chinese strategic writings emphasize the growing importance of the maritime, cyber, and space domains in warfare. China’s 2015 defense white paper cemented the primacy of the maritime realm in China’s strategic planning, asserting, “The traditional mentality that land outweighs sea must be abandoned, and great importance has to be attached to managing the seas and oceans and protecting maritime rights and interests.”¹¹⁷ Top Chinese military thinkers predict China’s most likely and most important prospective armed conflicts would take place in the maritime realm.¹¹⁸

The 2015 defense white paper also highlights the growing importance of space and cyberspace in warfare, referring to them as “the new commanding heights” in strategic competition. The 2015 establishment of a Strategic Support Force to more comprehensively integrate space and cyberspace into PLA operations reflects Chinese military planners’ assessment that whoever occupies the strategic high ground of space and cyberspace will enjoy the advantage in a future armed conflict.¹¹⁹

The United States as a Likely Adversary

PRC strategists view the United States as one of China’s likeliest military adversaries.¹²⁰ Historically, PRC official statements rarely made this explicit, and PRC officials often publicly rejected the notion that the China is a strategic competitor or adversary of the United States.¹²¹ In recent years, however, PLA leaders and PLA-affiliated media have increasingly referred to the

¹¹⁶ Elsa Kania and John Costello, “China’s Quest for Informatization Drives PLA Reforms,” *The Diplomat*, March 4, 2017, at <https://thediplomat.com/2017/03/chinas-quest-for-informatization-drives-pla-reforms/>.

¹¹⁷ PRC State Council Information Office, *China’s Military Strategy*, May 27, 2015.

¹¹⁸ M. Taylor Fravel, “Chapter 2: China’s Changing Approach to Military Strategy: The Science of Military Strategy from 2001 and 2013,” in *China’s Evolving Military Strategy*, Joe McReynolds, ed. (Washington, DC: Jamestown Foundation, 2017), pp. 52-53.

¹¹⁹ Kevin L. Pollpeter, Michael S. Chase, and Eric Heginbotham, *The Creation of the PLA Strategic Support Force and Its Implications for Chinese Military Space Operations*, RAND Corporation, 2016.

¹²⁰ Shou Xiaosong, ed., *The Science of Military Strategy* (Beijing, China: Military Science Press, 2013). Translation; M. Taylor Fravel, “Chapter 2: China’s Changing Approach to Military Strategy: The Science of Military Strategy from 2001 and 2013,” in *China’s Evolving Military Strategy*, Joe McReynolds, ed. (Washington, DC: Jamestown Foundation, 2017), p. 51; Roger Cliff, et al., *Entering the Dragon’s Lair: Chinese Antiaccess Strategies and Their Implications for the United States*, RAND Corporation, 2007, p. 27; and Ryan D. Martinson, “The Courage to Fight and Win: The PLA Cultivates Xuexing for the Wars of the Future,” *Jamestown Foundation China Brief*, June 1, 2016, at <https://jamestown.org/program/the-courage-to-fight-and-win-the-pla-cultivates-xuexing-for-the-wars-of-the-future/>.

¹²¹ National Committee on U.S.-China Relations, “A Conversation with Politburo Member Yang Jiechi,” February 2, 2021, at <https://www.ncusr.org/event/conversation-with-yang-jiechi>; PRC Ministry of Foreign Affairs, “Wang Yi: The Current Difficulties in China-US Relations Are Completely Created by the US Side,” July 24, 2020, https://www.fmprc.gov.cn/mfa_eng/wjb_663304/wjbz_663308/activities_663312/t1800501.shtml; PRC Ministry of Foreign Affairs, “Wang Yi: It Is the US, Rather Than China, Is Threatening Others,” February 15, 2020, https://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1745348.shtml; and PRC State Council Information Office, *China’s National Defense in the New Era*, July 2019.

United States as the focal point of China's military modernization efforts and a likely adversary, using coded language, particularly "strong enemy."¹²² Xi appears to have used the term "strong enemy" for the first time publicly in a 2015 speech to a PLA Air Force bomber division, during which he reportedly told troops "we must dare to face the strong enemy."¹²³

Four years before the Trump Administration declared that the United States was in "great-power competition" with China, the 2013 *Science of Military Strategy* concluded that U.S. defense planners had already identified China as the United States' main adversary.¹²⁴ China's leaders appear to have concerns that the United States might seek to intervene in a conflict between China and another actor.¹²⁵ The United States is a treaty ally to three countries with which China is involved in maritime disputes—Japan, the Philippines, and South Korea—and is the primary defense partner of Taiwan. A key consideration in Chinese defense planning therefore is preparing for the possibility that the United States would come to the aid of these or other partners in the event of a conflict with China. Several (though not all) elements of China's military modernization aim to counter U.S. capabilities in East Asia.¹²⁶

PRC Perceptions of the Likelihood of War

Chinese strategic writings provide some insights into which kinds of military conflict China's leaders expect the country is most likely to face. An authoritative but somewhat dated source on this is the 2013 *Science of Military Strategy*, which outlines four potential categories of war China could face: (1) a "large-scale, high-intensity defensive war" against a "hegemonic nation"; (2) a "relatively large-scale, relatively high-intensity anti-separatist war" in order to "safeguard[] the reunification of the nation"; (3) a "small- to medium-scale, low- to medium-intensity self-defense and counterattack operation" against "main opponents on the periphery"; and (4) a "small-scale, low-intensity anti-terrorist, stability-maintenance, and rights-defending" war "of a relatively lower level."¹²⁷

¹²² The newspaper affiliated with the PLA, the *PLA Daily*, has referenced "strong enemy" more frequently in recent years. Articles referencing "strong enemy" did not exceed 50 per year from 2000 to 2011, but ranged from 50 to almost 250 in the years since. Nathan Beauchamp-Mustafaga, "Dare to Face the 'Strong Enemy' 强敌: How Xi Jinping Has Made the PLA Talk about the United States," March 4, 2021, Sinocism, at <https://sinocism.com/p/dare-to-face-the-strong-enemy-how>.

¹²³ Nathan Beauchamp-Mustafaga, "Dare to Face the 'Strong Enemy' 强敌: How Xi Jinping Has Made the PLA Talk about the United States," March 4, 2021, Sinocism, at <https://sinocism.com/p/dare-to-face-the-strong-enemy-how>.

¹²⁴ Shou Xiaosong, ed., *The Science of Military Strategy* (Beijing, China: Military Science Press, 2013). Translation; M. Taylor Fravel, "Chapter 2: China's Changing Approach to Military Strategy: The Science of Military Strategy from 2001 and 2013," in *China's Evolving Military Strategy*, Joe McReynolds, ed. (Washington, DC: Jamestown Foundation, 2017), pp. 51-52.

¹²⁵ Shou Xiaosong, ed., *The Science of Military Strategy* (Beijing, China: Military Science Press, 2013). Translation; Testimony of RAND Corporation Senior International Defense Researcher and Professor at the Pardee RAND Graduate School Mark R. Cozad, in U.S.-China Economic and Security Review Commission, *Hotspots Along China's Maritime Periphery*, hearings, April 13, 2017 (Washington, DC), p. 9; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2017*, May 15, 2017, p. 53.

¹²⁶ U.S. Department of Defense, *Annual Report to Congress [on] Military and Security Developments Involving the People's Republic of China 2017*, Washington, DC, p. 53; M. T. Fravel and C. P. Twomey, "Projecting Strategy: The Myth of Chinese Counter-Intervention," *The Washington Quarterly*, vol. 37, no. 4 (Winter 2015), p. 181.

¹²⁷ Shou Xiaosong, ed., *The Science of Military Strategy* (Beijing, China: Military Science Press, 2013). Translation. See also testimony of RAND Corporation Senior International Defense Researcher and Professor at the Pardee RAND Graduate School Mark R. Cozad, in U.S.-China Economic and Security Review Commission, *Hotspots Along China's Maritime Periphery*, hearings, April 13, 2017, p. 8.

The 2013 *Science of Military Strategy* concludes that “the most possible threat of war is a limited military conflict in the sea direction” and the threat that requires the greatest preparation is “a relatively large-scale, relatively high-intensity local war in the sea direction against the backdrop of nuclear deterrence.”¹²⁸ In other words, Chinese strategists appear to believe the likeliest war China would fight is a relatively small-scale conflict over contested maritime claims in the South or East China Sea, and that a larger-scale conflict over Taiwan with U.S. involvement should be the primary focus of the PLA’s war preparations.

PLA Capabilities and Modernization

PLA Modernization Across All Domains

The PLA is improving its capabilities in every domain of warfare. The following sections summarize missions, capabilities, and major features of China’s armed forces by service: the PLA Air Force, PLA Navy, PLA Army, and PLA Rocket Force. The two sub-service forces, the PLA Joint Logistics Support Force and the PLA Strategic Support Force, also are discussed.

PLA Air Force

China’s air power resides primarily in the PLA Air Force (PLAAF). Including the Naval Aviation branch of the PLA Navy (discussed in the next section), China’s air forces constitute the third-largest in the world, and the largest in the region.¹²⁹

Missions and tasks:

As China’s national interests and defense requirements have expanded, China’s air forces have evolved from their traditional role providing territorial air defense to the ground forces to a more expansive role encompassing both defensive and offensive air operations at greater distances from China’s land borders.¹³⁰ PRC strategists and leaders frequently refer to the PLAAF’s transformation into a “strategic air force,” reflecting the rise of the PLAAF’s status among the PLA services, the expansion of its capabilities, and growing expectations for its contributions to China’s overall national defense.¹³¹ According to the 2019 defense white paper,

In line with the strategic requirements of integrating air and space capabilities as well as coordinating offensive and defensive operations, the PLAAF is accelerating the transition of its tasks from territorial air defense to both offensive and defensive operations, and improving its capabilities for strategic early warning, air strikes, air and missile defense, information countermeasures, airborne operations, strategic projection, and integrated support, so as to build a strong and modernized air force.¹³²

According to the 2013 *Science of Military Strategy*, missions assigned to the PLAAF include conducting defensive and offensive operations against the threats emanating from the maritime

¹²⁸ Shou Xiaosong, ed., *The Science of Military Strategy* (Beijing, China: Military Science Press, 2013). Translation.

¹²⁹ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2020*, August 21, 2020, p. 50.

¹³⁰ PRC State Council Information Office, *China’s Military Strategy*, May 27, 2015.

¹³¹ Kenneth W. Allen and Cristina L. Garafola, *70 Years of the PLA Air Force*, China Aerospace Studies Institute, April 12, 2021, pp. 87-101; Michael S. Chase and Cristina Garafola, “China’s Search for a ‘Strategic Air Force,’” *Jamestown Foundation China Brief*, October 2, 2015, <https://jamestown.org/program/chinas-search-for-a-strategic-air-force/>.

¹³² PRC State Council Information Office, *China’s Armed Forces in the New Era*, July 2019.

southeast (primarily Taiwan); conducting homeland air defense; safeguarding China's maritime interests; conducting humanitarian, disaster relief, domestic stability, and other emergency operations; and participating in international operations such as peacekeeping, international rescue, escorts and evacuations, and military exercises with foreign militaries.¹³³ According to the U.S. Defense Intelligence Agency (DIA), the PLAAF was assigned a nuclear mission in 2017 (see discussion of the H-6N and H-20, below).¹³⁴

Capabilities:

Whereas as recently as the early 2000s, the PLAAF was assessed to be a “weak link” in China's armed forces,¹³⁵ today it is increasingly capable of conducting operations in China's immediate periphery. In particular, China's air forces are improving their ability to conduct offshore strike, air and missile defense, strategic mobility, and early warning and reconnaissance missions.¹³⁶ DOD assesses that the PLAAF's modernization strides are “eroding longstanding and significant U.S. military technical advantages vis-à-vis the PRC in the air domain.”¹³⁷ Further, one U.S. aerospace analyst concludes China's air forces are “having a real and dramatic affect today” on balances of power between militaries in Asia, including those belonging to U.S. allies and partners.¹³⁸

Key modernization features and developments:

- **Fighters:** In 2020 DOD reported the PLAAF “probably will become a majority fourth-generation¹³⁹ force within the next several years,” having already fielded more than 800 fourth-generation fighter aircraft (including the J-10, J-11, and J-16 and their variants).¹⁴⁰ Some of the PLAAF's fifth-generation J-20 stealth fighters are operational.¹⁴¹
- **Bombers:** Of the PLAAF's approximately 450¹⁴² bombers/attack aircraft, the most advanced—the H-6K—are “extended-range aircraft [that] can carry six [land-attack cruise missiles], providing the PLA a long-range, standoff, precision-

¹³³ Shou Xiaosong, ed., *The Science of Military Strategy* (Beijing, China: Military Science Press, 2013). Translation.

¹³⁴ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 37.

¹³⁵ Cristina L. Garafola, “Chapter 3: The Evolution of PLAAF Mission, Roles, and Requirements,” in *China's Evolving Military Strategy*, ed. Joe McReynolds (Washington, DC: Jamestown Foundation, 2017), p. 82.

¹³⁶ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 80.

¹³⁷ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 50.

¹³⁸ Testimony of Director of the China Aerospace Studies Institute Brendan S. Mulvaney, in U.S.-China Economic and Security Review Commission, *China's Military Reforms and Modernization: Implications for the United States*, hearings, February 15, 2018.

¹³⁹ China does not define its generations of aircraft according to Western military convention. What the United States and others would refer to as fifth-generation, for example, China refers to as fourth-generation. For the sake of easy comparison, this report uses the Western, not Chinese, convention.

¹⁴⁰ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 50.

¹⁴¹ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 85; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 50.

¹⁴² U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 166.

- strike capability that can reach Guam,” according to DIA.¹⁴³ A long-range strategic bomber revealed in 2019, the H-6N, appears to be nuclear-capable, according to DOD and others. Observers expect the H-6N and another developmental long-range stealth bomber dubbed the H-20 to complete China’s nuclear triad of land-, air-, and sea-based nuclear weapons delivery systems.¹⁴⁴
- **Early warning aircraft:** PLAAF airborne early warning and control aircraft (including the KJ-2000, KJ-200, and KJ-500) are “force multipliers,” “with the ability to stare at a target or track thousands of targets simultaneously,” providing “faster target acquisition time, more accurate target position data, and increased ability to detect low-observable targets,” according to DIA.¹⁴⁵
 - **Transport and aerial refueling:** Transport aircraft (including the Y-20 strategic heavy lift aircraft) and aerial refueling aircraft (including the IL-78 tanker imported from Russia) are expanding the PLAAF’s operational reach and extending expeditionary capabilities.¹⁴⁶
 - **Air and missile defense:** China has received two of an unknown number of S-400 surface-to-air missile (SAM) systems it is procuring from Russia, which expand the range and accuracy of China’s long-range air defenses and may be able to intercept some short-range ballistic missiles.¹⁴⁷ (In September 2018, the U.S. Treasury Department sanctioned the PLA’s Equipment Development Department for this purchase under the Countering America’s Adversaries through Sanctions Act (P.L. 115-44)).¹⁴⁸ Depending on how many batteries the PLAAF procures and where they are deployed, they could complicate air operations by the United States and other countries in the East and South China Seas, and near Taiwan.¹⁴⁹ China’s HQ-19 mid-course interceptor, currently in testing or possibly operational, likely offers ballistic missile defense capability and is designed to target ballistic missiles with ranges out to 3,000 km.¹⁵⁰

¹⁴³ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 85.

¹⁴⁴ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2020*, August 21, 2020, pp. 51, 80, 87; Zhang Tao, “Rear Admiral: China’s Development of H-20 Bomber Just in Time,” China Military Online, December 7, 2016, http://english.chinamil.com.cn/view/2016-12/07/content_7396601.htm; Ankit Panda, “Revealed: China’s Nuclear-Capable Air-Launched Ballistic Missile,” *The Diplomat*, April 10, 2018, at <https://thediplomat.com/2018/04/revealed-chinas-nuclear-capable-air-launched-ballistic-missile/>.

¹⁴⁵ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 85.

¹⁴⁶ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 87; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2018*, May 16, 2018, p. 34; U.S.-China Economic and Security Review Commission, *2018 Annual Report to Congress*, November 2018, p. 231; U.S.-China Economic and Security Review Commission, *2017 Annual Report to Congress*, November 2017, p. 209.

¹⁴⁷ Franz-Stefan Gady, “Russia Completes Delivery of Second S-400 Regiment to China,” *The Diplomat*, February 3, 2020, at <https://thediplomat.com/2020/02/russia-completes-delivery-of-second-s-400-regiment-to-china/>; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2019*, May 2, 2019, pp. 42, 55, 57.

¹⁴⁸ U.S. Department of the Treasury, “CAATSA—Russia-Related Designations,” September 20, 2018, at https://www.treasury.gov/resource-center/sanctions/OFAC-Enforcement/Pages/20180920_33.aspx.

¹⁴⁹ Janes, “China—Air Force—Air Defence Systems,” updated November 30, 2020.

¹⁵⁰ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 87; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2020*, August 21, 2020, pp. 52, 73.

- **Unmanned aerial vehicles (UAVs):** China's expanding fleet of armed and unarmed UAVs are enhancing the PLA's ability to conduct intelligence, surveillance, reconnaissance (ISR), electronic countermeasures, naval aviation, and combined reconnaissance/strike missions. The PLA is also testing what it claims is the world's first "large cargo UAV," which DOD assesses "may be especially suited to provide logistic support to PLA forces in the South China Sea."¹⁵¹

PLA Navy¹⁵²

The PLA Navy (PLAN) is the world's largest naval force by number of ships, with approximately 350 battle force ships. (The U.S. Navy, by comparison, has 293 battle force ships.)¹⁵³ The PLAN also includes a Naval Aviation branch with airpower assets. In recent years, Xi and PLA officials have called on the PLAN to become a "world-class navy," able to operate globally and to achieve "command of the seas."¹⁵⁴

Missions and tasks:

Previously focused on coastal defense and "offshore defense" of China's maritime periphery, China's navy has taken on new roles as China's interests have expanded geographically. As noted above, this shift has been ongoing since the mid-2000s. China's 2015 defense white paper formalized it for an international audience, asserting that the PLAN "will gradually shift its focus from 'offshore waters defense' to the combination of 'offshore waters defense' with 'open-seas protection.'"¹⁵⁵ As such, PLAN missions focus not only on scenarios involving coastal defense, Taiwan, and China's immediate maritime periphery, but also on tasks farther afield, such as sea lane protection in places like the Indian Ocean, naval diplomacy, and nontraditional security missions such as search and rescue and humanitarian assistance/disaster relief.¹⁵⁶ Perhaps the most illustrative example of the PLAN's expanding mission set is its activity in the Gulf of Aden, where it has been conducting continuous anti-piracy patrols since 2008, and where the PLA established its first-ever overseas military base, in Djibouti, in 2017.

PLA Naval Aviation missions include maritime strike, maritime patrol, antisubmarine warfare, airborne early warning, and logistics.¹⁵⁷ The PLAN Marine Corps, a branch under the PLAN, is responsible for amphibious assault, with a primary focus on island chains in the South China Sea. It also is tasked with rights protection and humanitarian assistance/disaster relief missions, and is

¹⁵¹ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, pp. 58, 69, 87; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019*, May 2, 2019, p. 58.

¹⁵² For a fuller account of China's Navy, see CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, by Ronald O'Rourke.

¹⁵³ U.S. Department of Defense, *Annual Report to Congress on Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 44.

¹⁵⁴ Shen Jinlong, "Thoroughly Implement the Spirit of the 19th Party Congress, Plan and Promote Transformational Construction for the Navy in the New Era," *People's Navy*, December 13, 2017, as cited in Ryan D. Martinson, "Deciphering China's 'World-class' Naval Ambitions," *Proceedings*, August 2020.

¹⁵⁵ PRC State Council Information Office, *China's Military Strategy*, May 27, 2015.

¹⁵⁶ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, pp. 65-67.

¹⁵⁷ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 73.

taking on an expeditionary role, as demonstrated by the PLAN Marine Corps' deployment of troops to the base in Djibouti.¹⁵⁸

Capabilities:

PLAN modernization is bringing China closer to its goal, stated by then-CCP leader Hu Jintao in 2012, of becoming a "maritime power." PLAN forces are becoming increasingly sophisticated and capable as the PLAN retires older ships and replaces them with advanced, multi-mission combatants. The PLAN's technological sophistication is, in some areas, on par with that of other modern navies, according to DIA.¹⁵⁹ A February 2020 assessment by the U.S. Office of Naval Intelligence projects China's naval force will reach 425 battle force ships by 2030.¹⁶⁰

According to DOD, "The PLAN's ability to perform missions beyond the First Island Chain¹⁶¹ is modest but growing as it gains more experience operating in distant waters and acquires larger and more advanced platforms."¹⁶² A 2019 report by the U.S.-China Economic and Security Review Commission assesses China will have a blue water force projection capability as early as 2025,¹⁶³ and one analyst notes, "If current trends continue, it may not be long before the PLAN, working in concert with the other services, can operate unmolested in any likely scenario."¹⁶⁴ DIA assesses the PLAN Marine Corps is the "most capable amphibious force of any South China Sea claimant" and "can simultaneously seize multiple islands in the Spratlys."¹⁶⁵ The PLAN's amphibious capabilities likely are sufficient to launch an invasion of some Taiwan-held islands, though mounting a full amphibious assault of Taiwan would involve significant geopolitical and military risks.¹⁶⁶

Key modernization features and developments:

- **Aircraft carriers:** The PLAN has two operational aircraft carriers, is constructing a third, and almost certainly will build at least one more.¹⁶⁷ China's first carrier (*Liaoning*), refurbished from a Ukrainian hull, entered service in 2012. Its second—and first domestically-developed—carrier (*Shandong*) entered

¹⁵⁸ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, pp. 47-48; U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, pp. 79-80.

¹⁵⁹ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 70.

¹⁶⁰ U.S. Office of Naval Intelligence, Farragut Technical Analysis Center Naval Platforms Department, "(U) UPDATED China: Naval Construction Trends vis-à-vis U.S. Navy Shipbuilding Plans, 2020-2030," February 6, 2020, requested by Federation of American Scientists via Freedom of Information Act, at <https://fas.org/irp/agency/oni/plan-trends.pdf>.

¹⁶¹ The so-called first island chain refers to islands that roughly mark the eastern bounds of the Yellow Sea, East China Sea, and South China Sea, from the Kuril Islands, through Taiwan, to Borneo. The so-called second island chain refers to the islands out to Guam that roughly mark the eastern bounds of the Philippine Sea. See **Appendix** for a map depicting the first and second island chains.

¹⁶² U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 79.

¹⁶³ U.S.-China Economic and Security Review Commission, *2019 Annual Report to Congress*, November 2019, p. 292.

¹⁶⁴ Ryan D. Martinson, "Deciphering China's 'World-class' Naval Ambitions," *Proceedings*, August 2020.

¹⁶⁵ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 82.

¹⁶⁶ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 114.

¹⁶⁷ Lu Zhenhua, "Update: Navy-Affiliated Academic Confirms China's Plan for Two More Aircraft Carriers," *Caixin*, September 7, 2020, at <https://www.caixinglobal.com/2020-09-07/navy-affiliated-academic-confirms-chinas-plan-for-two-more-aircraft-carriers-101602169.html>.

service in 2019. Construction on China's second domestically-developed carrier, which is to be larger and equipped with a catapult launch system, began in 2018;¹⁶⁸ the U.S. Office of Naval Intelligence projected in 2020 that it would be commissioned by 2024.¹⁶⁹ DIA projects this carrier will facilitate PLA power projection in the South China Sea and possibly the Indian Ocean.¹⁷⁰

- **Amphibious ships:** Facilitating the PLAN's expeditionary capabilities are large-deck amphibious ships such as the new Yushen-class (Type 075) landing helicopter assault ships (one launched in 2019 and two more under construction) and at eight Yuzhao-class (Type 071) amphibious transport docks.¹⁷¹ These large vessels are capable of embarking several Yuyi-class air-cushion landing craft, helicopters, tanks and other vehicles, as well as large numbers of marines.¹⁷²
- **Submarines:** According to DOD, the PLAN's submarine force in 2019 comprised 4 Jin-class nuclear-powered ballistic missile submarines, 6 nuclear-powered attack submarines, and 46 diesel-powered attack submarines¹⁷³ (2 more Jin-class submarines entered service in 2020, according to media reports, bringing the total number of Jin-class submarines to 6).¹⁷⁴ The Jin-class nuclear-powered ballistic missile submarine, paired with the JL-2 submarine-launched ballistic missile, is China's first credible sea-based deterrent. DOD expects China's submarine force to number 65-70 total for the next decade, "replacing older units with more capable units on a near one-to-one basis."¹⁷⁵
- **Multi-role surface combatants:** The modern Luyang III-class (Type 052D) guided missile destroyer and Jiangkai II-class (Type 054A) guided missile frigate have advanced anti-ship and anti-air weapons and sensors, boosting the PLAN's area air defense and anti-surface warfare capabilities. Smaller combatants, in particular the Jiangdao-class (Type 056) corvette, also pose a threat to adversary surface vessels near China's coast. In 2019, DIA reported that "every major PLAN surface combatant under construction" can carry at least one helicopter,

¹⁶⁸ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 47.

¹⁶⁹ U.S. Office of Naval Intelligence, Farragut Technical Analysis Center Naval Platforms Department, "(U) UPDATED China: Naval Construction Trends vis-à-vis U.S. Navy Shipbuilding Plans, 2020-2030," February 6, 2020, requested by Federation of American Scientists via Freedom of Information Act, at <https://fas.org/irp/agency/oni/plan-trends.pdf>.

¹⁷⁰ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 34.

¹⁷¹ Janes, "China—Navy—Amphibious Forces," updated May 4, 2021; Nick Childs and Douglas Barrie, "Chinese military enablers benefit from sustained investment," International Institute for Strategic Studies *Military Balance Blog*, March 5, 2021, at <https://www.iiss.org/blogs/military-balance/2021/03/chinese-military-enablers>.

¹⁷² U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 47.

¹⁷³ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 165; International Institute of Strategic Studies, *Military Balance+* database. Of note, p. 45 of DOD's report estimates 50 diesel-powered attack submarines; it is not clear what accounts for the apparent discrepancy between the two different figures cited on different pages of the report.

¹⁷⁴ Minnie Chan, "Chinese Navy Puts Two New Nuclear Submarines into Service," *South China Morning Post*, April 29, 2020, at <https://www.scmp.com/news/china/military/article/3082195/chinese-navy-puts-two-new-nuclear-submarines-service>.

¹⁷⁵ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 45.

enhancing the fleet's ability to conduct over-the-horizon targeting, anti-submarine warfare, and search and rescue.¹⁷⁶

- **Naval aviation:**

- *Carrier aviation:* The PLAN Naval Aviation branch's aircraft carrier-based aircraft, including up to 24 J-15 fourth-generation fighters embarked on China's first carrier, and possibly more than 24 J-15s on its second carrier, as well as several helicopters, will extend PLA power projection capabilities.¹⁷⁷ A variant of the developmental fifth-generation FC-31 stealth fighter¹⁷⁸ is expected to operate from future aircraft carriers.¹⁷⁹ The developmental carrier-borne KJ-6000 airborne early warning and control aircraft is expected to enhance carrier fleet situational awareness.¹⁸⁰
- *Bombers:* PLAN Naval Aviation operates H-6 bombers, the latest variant of which (the land-based H-6J) has a combat radius extending to the second island chain and can carry a larger number of YJ-12 anti-ship cruise missiles.¹⁸¹

¹⁷⁶ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 69.

¹⁷⁷ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 75; CSIS China Power, "What Do We Know (So Far) about China's Second Aircraft Carrier?" updated August 26, 2020.

¹⁷⁸ This developmental aircraft is sometimes referred to as the J-31 or J-35.

¹⁷⁹ Rick Joe, "003 and More: An Update on China's Aircraft Carriers," *The Diplomat*, September 29, 2020, at <https://thediplomat.com/2020/09/003-and-more-an-update-on-chinas-aircraft-carriers/>; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 50.

¹⁸⁰ Rick Joe, "003 and More: An Update on China's Aircraft Carriers," *The Diplomat*, September 29, 2020, at <https://thediplomat.com/2020/09/003-and-more-an-update-on-chinas-aircraft-carriers/>.

¹⁸¹ Franz-Stefan Gady, "China's Navy Deploys New H-6J Anti-Ship Cruise Missile-Carrying Bombers," *The Diplomat*, October 12, 2018, at <https://thediplomat.com/2018/10/chinas-navy-deploys-new-h-6j-anti-ship-cruise-missile-carrying-bombers/>; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 76.

China's Three Maritime Forces

The major PRC maritime entities operating in China's maritime periphery are the PLAN, the China Coast Guard, and the People's Armed Forces Maritime Militia. Since 2018, both the coast guard and the maritime militia have been under military command, reporting to the Central Military Commission, although they are not part of the PLA. The three actors sometimes train and patrol together and are showing signs of increasing interoperability.¹⁸²

China primarily has used the coast guard and maritime militia to enforce its claims in the South and East China Seas. In many cases where these actors engage with foreign vessels, PLA Navy ships deploy nearby to provide overwatch, deter escalation, and, if necessary, intervene. This approach, in which the military takes a back seat to the coast guard and maritime militia, allows China to deploy forces flexibly and use "gray zone" coercion against other claimants, while putting the onus of escalation on these claimants—most of which have far less powerful coast guards and militaries. In the case of the maritime militia, which often operates under the cover of civilian fishing flotillas, it can also provide plausible deniability of PLA or PRC government direction.¹⁸³

PLA Navy: Although the PLA Navy has rarely been involved in confrontations with other claimants, PLA Navy ships frequently "show the flag" in disputed areas through patrols, presence operations, and military exercises, sometimes jointly with other PLA services, such as the PLA Air Force, or with foreign counterparts such as Russian Navy.¹⁸⁴

China Coast Guard: The China Coast Guard is the world's largest coast guard, with 130 large patrol ships, more than 70 fast patrol combatants, more than 400 coastal patrol craft, and approximately 1,000 inshore and riverine vessels.¹⁸⁵ Many of the fleet's large patrol ships are well-armed and capable of conducting operations in distant waters. With a mission to enforce China's sovereignty claims, the China Coast Guard regularly patrols disputed waters.¹⁸⁶

People's Armed Forces Maritime Militia: Part of China's national militia, the People's Armed Forces Maritime Militia is a reserve civilian force of mariners trained to enforce China's maritime claims and to support the PLA Navy when called to do so. It is the world's largest such force. According to the RAND Corporation, China's maritime militia has been involved in "nearly every [PLA Navy and China Coast Guard] operation to harass maritime counter-claimants at disputed features or to seize the features from them."¹⁸⁷

PLA Army

The PLA Army (PLAA) is the largest ground force in the world, even after a 55% troop reduction between the years of 1997 and 2018.¹⁸⁸

¹⁸² U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China*, May 2, 2019, p. 52.

¹⁸³ Two scholars note, however: "While not all [maritime militia] activities at sea are directly controlled by the PLA in real time, the ones of greatest concern to the United States and its allies and security partners are PLA-affiliated." Conor M. Kennedy and Andrew S. Erickson, "China's Third Sea Force, the People's Armed Forces Maritime Militia: Tethered to the PLA," *China Maritime Report* 1 (March 2017), p. 8.

¹⁸⁴ Sam LaGrone, "China, Russia Kick Off Joint South China Sea Naval Exercise; Includes 'Island-Seizing' Drill," USNI News, September 12, 2016, at <https://news.usni.org/2016/09/12/china-russia-start-joint-south-china-sea-naval-exercise-includes-island-seizing-drill>; Ryan Browne, "US Navy Has Had 18 Unsafe or Unprofessional Encounters with China Since 2016," CNN, November 3, 2018, at <https://www.cnn.com/2018/11/03/politics/navy-unsafe-encounters-china/index.html>.

¹⁸⁵ U.S. Defense Intelligence Agency, *China Military Power Report*, January 3, 2019, p. 78.

¹⁸⁶ Shun Niekawa, "Chinese ships set 65-day record for closing in on Senkaku waters," *The Asahi Shimbun*, June 17, 2020, at <http://www.asahi.com/ajw/articles/13465411>.

¹⁸⁷ Derek Grossman and Logan Ma, "A Short History of China's Fishing Militia and What It May Tell Us," *The RAND Blog*, April 6, 2020, at <https://www.rand.org/blog/2020/04/a-short-history-of-chinas-fishing-militia-and-what.html>.

¹⁸⁸ Dennis J. Blasko, "The Biggest Loser in Chinese Military Reforms," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, Phillip C. Saunders et al., eds. (Washington, DC: National Defense University Press, 2019), p. 345; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 40.

Missions and tasks:

The PLAA is the primary ground force of the PLA. Its missions include safeguarding China's sovereignty and other security interests at home and abroad, engaging in multinational security cooperation, ensuring China's political and social stability, and responding to emergencies through rescue and disaster relief operations.¹⁸⁹ The ground forces would be essential to a Taiwan invasion operation should amphibious forces secure initial access to the island.¹⁹⁰ China's leaders have called on the PLAA to become a "new-type army," characterized as a thorough transformation into a fully modern, networked force capable of flexibly leveraging advanced technologies and capabilities in order to prosecute a larger range of missions over greater distances and in unfamiliar settings.¹⁹¹ The service seeks to improve its ability to "deploy in different terrain environments while bringing ample firepower in combat scenarios beyond China's borders," according to DOD.¹⁹²

Capabilities:

The sophistication of the ground forces' armaments has advanced to among the best in the world, and the PLAA's capabilities are increasing. One U.S. observer of the PLAA writes

New weapons and technologies allow army units to move faster over more difficult terrain, including bodies of water; shoot farther and faster; and integrate their capabilities with those found in the other services more than ever before. Army commanders now have a variety of means to attack opponents out to 150 kilometers beyond their frontlines, including long-range multiple rocket launchers and artillery, attack helicopters, [special operations forces] teams, nonlethal electronic warfare and possibly cyber weapons, and supporting PLA Air Force aircraft and armed UAVs.¹⁹³

Key modernization features and developments:

- **Tanks:** The Type 15 light battle tank, fielded in 2018, is capable of traversing mountainous terrain and likely will enhance the PLAA's ability to conduct operations along the disputed China-India border.¹⁹⁴ The PLAA's most capable tanks are the Type 96A and Type 99.¹⁹⁵
- **Army Aviation:** Most of the PLA's helicopters are assigned to the PLAA, and are advancing the service's ability to project power.¹⁹⁶ DOD anticipates the Z-20

¹⁸⁹ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 55.

¹⁹⁰ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 116.

¹⁹¹ Testimony of U.S. Air Force China advisor Ben Lowsen, in U.S.-China Economic and Security Review Commission, *China's Military Reforms and Modernization: Implications for the United States*, hearings, February 15, 2018.

¹⁹² U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 116.

¹⁹³ Dennis J. Blasko, "The Biggest Loser in Chinese Military Reforms," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, Phillip C. Saunders et al., eds. (Washington, DC: National Defense University Press, 2019), p. 363.

¹⁹⁴ Liu Xuanzun, "PLA expands high-altitude arsenal to address border threat," *Global Times*, May 31, 2020, at <https://www.globaltimes.cn/content/1190083.shtml>; Kyle Mizokami, "What You Need to Know About China's New Tank," *Popular Mechanics*, January 2, 2019, at <https://www.popularmechanics.com/military/weapons/a25728271/china-new-tank-type-15/>.

¹⁹⁵ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 59.

¹⁹⁶ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 77; Peter Wood and Cristina Garafola, "Counting Z's: The

medium lift helicopter, which made its first public appearance in 2019 and resembles the U.S. Black Hawk helicopter, “will enhance aviation and air assault brigades’ ability to perform rapid air insertion operations, light infantry force projection, and expedited logistics.”¹⁹⁷

- **Amphibious forces:** PLAA amphibious forces prepare, sometimes alongside PLAN amphibious forces, for amphibious assault operations, with an emphasis on a Taiwan conflict scenario. DOD believes the PLAA “will likely increase its ability to establish, defend, and exploit a beachhead lodgment” in a Taiwan invasion mission.¹⁹⁸

Quality over Quantity

China’s military modernization efforts generally have emphasized quality over quantity in both equipment and personnel (even so, the PLAN and PLAA are the largest navy—by number of ships—and ground force in the world, and China’s air forces are the largest in the region).¹⁹⁹ Total numbers of troops and platforms (e.g., surface vessels, tanks, and fighter aircraft) have declined from their 1990s levels in many categories, but the PLA’s overall capabilities have increased. Many of the PLA’s older major weapons systems are legacy platforms from the Cold War era, when Chinese defense technology lagged far behind that of the United States and other modern militaries, but the ratio of modern to older platforms is steadily increasing. For example, China’s inventory of combat aircraft decreased by half between 1994 and 2018, but the majority of the force likely will be fourth-generation or higher in the coming years.²⁰⁰ In personnel terms, the PLA has shrunk significantly from its estimated size of 5 million troops in 1949, to 3 million in 1992, to about 2 million active personnel today.²⁰¹

PLA Rocket Force

The PLA Rocket Force (PLARF) is responsible for China’s strategic land-based nuclear and conventional missiles. The PLAN and PLAAF are responsible for operating sea- and air-launched missiles, respectively. The PLARF likely is responsible for warhead management for all of the services.²⁰²

Missions and tasks:

The PLA’s missile forces are central to China’s efforts to deter and counter third-party intervention in a regional conflict. Previously an independent branch of the military called the Second Artillery, China’s missile forces were elevated in 2015 to a full service (on par with the

Gradual Expansion of China’s Helicopter Force,” *Jamestown Foundation China Brief*, April 12, 2013, at <https://jamestown.org/program/counting-zs-the-gradual-expansion-of-chinas-helicopter-force/>.

¹⁹⁷ Liu Zhen, “China’s Z-20 Black Hawk lookalike and flying saucer concept craft star at helicopter expo,” *South China Morning Post*, October 16, 2019, at <https://www.scmp.com/news/china/military/article/3033088/chinas-z-20-black-hawk-lookalike-and-flying-saucer-concept>; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2020*, August 21, 2020, p. 43.

¹⁹⁸ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2020*, August 21, 2020, p. 117.

¹⁹⁹ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2018*, May 16, 2018, pp. 24, 28, 33.

²⁰⁰ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2018*, May 16, 2018, p. 33; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2020*, August 21, 2020, p. 50; Kenneth W. Allen, et. al., *China’s Air Force Enters the 21st Century*, RAND Corporation, 1995, p. 135.

²⁰¹ *The Military Balance 1992-1993*, International Institute for Strategic Studies (London: Brassey’s, 1992), p. 145; M. Taylor Fravel, *Active Defense: China’s Military Strategy Since 1949*, Princeton University Press, 2019, p. 39.

²⁰² International Institute for Strategic Studies, *Military Balance+* database.

PLAA, PLAN, and PLAAF), and renamed the Rocket Force. In addition to its longstanding, and central, mission of nuclear deterrence and counterattack, the Rocket Force today is responsible for conducting conventional precision strikes.²⁰³ Xi has referred to the Rocket Force as the “core of strategic deterrence, a buttress to the country’s position as a major power, and an important aspect of national security.”²⁰⁴ DOD’s 2019 *Missile Defense Review* assesses, “A key component of China’s military modernization is its conventional ballistic missile arsenal designed to prevent U.S. military access to support regional allies and partners.”²⁰⁵

Capabilities:

The PLA is working to improve the range, accuracy, survivability, and lethality of its missiles, enhance its deterrence and counterstrike capabilities, and incorporate technologies to enhance targeting options and evade missile defenses. Since the mid-1990s, China’s missile inventory has grown from a small number of ballistic missiles to what the 2019 *Missile Defense Review* called “one of the most active and diverse ballistic missile development programs in the world.”²⁰⁶

The U.S. defense establishment generally assesses that China’s missile forces have undergone rapid and impressive progress in recent years. The PLARF is improving its ability to conduct more precise strikes against targets increasingly far from the PRC homeland, including U.S. and allied bases in the region.²⁰⁷ In 2018 testimony to the House Armed Services Committee then-Commander of Pacific Command (now Indo-Pacific Command) Admiral Harry B. Harris argued, “Perhaps nowhere is the PLA making more dramatic progress than in ballistic missiles.” Describing which PLA missiles would likely be employed against the United States in the event of a conflict, he listed “[short range ballistic missiles] against Taiwan and U.S. carrier strike groups operating at sea, [intermediate-range ballistic missiles] against U.S. bases in Japan and Guam, and [intercontinental ballistic missiles] against the continental U.S.”²⁰⁸

The PLA’s Nuclear Modernization and Arsenal

China’s current estimated nuclear arsenal, capabilities, and stated policies amount to a much smaller and less diverse nuclear posture than that of the United States or Russia. Nevertheless, China’s nuclear modernization is yielding a larger and more capable nuclear force, and the United States has argued that China’s lack of transparency surrounding its nuclear modernization efforts generates uncertainty about its intentions.²⁰⁹

China does not publicize the size of its nuclear arsenal, but DOD reported in 2020 that China’s estimated operational nuclear warhead stockpile was “in the low-200s.”²¹⁰ DIA estimated in 2019

²⁰³ PRC State Council Information Office, *China’s Military Strategy*, May 27, 2015, at http://english.gov.cn/archive/white_paper/2015/05/27/content_281475115610833.htm; U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 91; Michael S. Chase, “Chapter 5: PLA Rocket Force: Executors of China’s Nuclear Strategy and Policy,” in *China’s Evolving Military Strategy*, Joe McReynolds, ed. (Washington, DC: Jamestown Foundation, 2017), pp. 159-160.

²⁰⁴ Dong Zhaohui, “President Xi Jinping Inspects PLA Rocket Force,” ChinaMil.com, September 26, 2016, at http://eng.chinamil.com.cn/view/2016-09/26/content_7277940.htm.

²⁰⁵ U.S. Department of Defense, “2019 Missile Defense Review,” January 19, 2019, p. 19.

²⁰⁶ U.S. Department of Defense, “2019 Missile Defense Review,” January 19, 2019, p. 13.

²⁰⁷ U.S. Department of Defense, “2019 Missile Defense Review,” January 19, 2019, p. iv.

²⁰⁸ Testimony of Harry Harris, then-Commander, U.S. Pacific Command, in U.S. Congress, House Armed Services Committee, *U.S. Pacific Command Posture*, hearings, 115th Cong., 2nd sess., February 14, 2018.

²⁰⁹ U.S. Department of Defense, *Nuclear Posture Review*, 2018, p. 11.

²¹⁰ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the*

that China may at least double its stockpile “over the next decade.”²¹¹ Some analysts expressed skepticism about DIA’s estimate (which has since been repeated by DOD),²¹² and others caution against expectations that China could seek to “sprint to parity” with the United States, citing China’s limited stock of fissile material, among other things.²¹³ One nongovernmental estimate suggests the PLA’s stockpile numbers around 350 nuclear warheads.²¹⁴ The same source estimates delivery vehicles for China’s nuclear warheads include about 240 land-based ballistic missiles, 48 missiles on 4 ballistic missile submarines, and 20 gravity bombs assigned to bomber aircraft.²¹⁵ Further, this source estimates China fields approximately 150 land-based missiles that can strike the United States with approximately 190 warheads (with 90 missiles/130 warheads capable of striking the continental United States).²¹⁶ DOD estimates that by around 2025, the PLA will field approximately 200 intercontinental ballistic missiles capable of threatening the United States.²¹⁷

China also has made qualitative advances to its nuclear forces. These include a shift from liquid-fueled and silo-based missiles to solid-fueled and increasingly mobile missiles; progress toward what DOD calls a “viable nuclear triad” of land-, air-, and sea-based nuclear weapons delivery systems;²¹⁸ the development of strategic early warning systems; improvements in nuclear command and control; and improvements in warhead penetration (including the deployment of multiple independently targetable re-entry vehicles).

These developments appear to reflect PRC concerns about advances in U.S. missile defense and long-range precision conventional weapons. PRC strategists argue that U.S. capabilities could undermine the ability of China’s nuclear forces to survive an attack and to launch a nuclear

People’s Republic of China 2020, August 21, 2020, p. 85. The Federation of American Scientists estimates the following total nuclear warhead inventories for regional nuclear powers: United States (5,500 warheads), Russia (6,257 warheads), China (350), India (160), Pakistan (165), and North Korea (45). Federation of American Scientists, “Status of World Nuclear Forces,” updated May 2021, at <https://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/>.

²¹¹ The Hudson Institute, “Transcript: The Arms Control Landscape ft. DIA Lt. Gen. Robert P. Ashley, Jr.” May 31, 2019, <https://www.hudson.org/research/15063-transcript-the-arms-control-landscape-ft-dia-lt-gen-robert-p-ashley-jr>. See also U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2020*, August 21, 2020, p. 85.

²¹² Hans Kristensen, “DIA Estimates for Chinese Nuclear Warheads,” Federation of American Scientists, May 31, 2019, at <https://fas.org/blogs/security/2019/05/chinese-nuclear-stockpile/>.

²¹³ David C. Logan, “Hard Constraints on a Chinese Nuclear Breakout,” *Nonproliferation Review*, vol. 24, no. 1-2, 13-30 (2017).

²¹⁴ M. Kristensen and Matt Korda, “Chinese Nuclear Forces, 2020,” *Bulletin of the Atomic Scientists*, vol. 76, no. 6 (2020), p. 443. This discrepancy may be attributed in part to DOD not including in its estimate warheads expected to be assigned to platforms that have not yet become operational.

²¹⁵ Hans M. Kristensen and Matt Korda, “Chinese nuclear forces, 2019,” *Bulletin of the Atomic Scientists*, vol. 75, no. 4 (2019), pp. 171-172. As noted previously, two more Jin-class submarines entered service in 2020, according to media reports, bringing the total number of Jin-class submarines to 6. This would presumably bring the future number of ballistic missile submarine-launched missiles to 72 in the future. Minnie Chan, “Chinese navy puts two new nuclear submarines into service,” *South China Morning Post*, April 29, 2020, <https://www.scmp.com/news/china/military/article/3082195/chinese-navy-puts-two-new-nuclear-submarines-service>

²¹⁶ Hans M. Kristensen and Matt Korda, “Chinese nuclear forces, 2020,” *Bulletin of the Atomic Scientists*, vol. 76, no. 6 (2020), p. 447.

²¹⁷ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2020*, August 21, 2020, p. 55.

²¹⁸ Currently, the PLA has operational land- and sea-based systems and is developing a nuclear-capable air-launched ballistic missile that could be launched from bomber aircraft. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2020*, August 21, 2020, p. 87.

counterattack.²¹⁹ Others, however, argue that China may be pursuing a more coercive approach to its nuclear policy by developing capabilities that could threaten U.S. forces in the region.²²⁰

Key modernization features and developments:

- **Conventional missile inventory:** According to DOD, the PLA's ballistic missile inventory includes 600 or more short-range ballistic missiles (SRBMs, with ranges of 300-1,000 km) paired with 250 launchers, 150 or more medium-range ballistic missiles (MRBMs, with ranges of 1,000-3,000 km) paired with 150 launchers, 200 or more intermediate-range ballistic missiles (IRBMs, with ranges of 3,000-5,500 km) paired with 200 launchers, and 100 intercontinental-range ballistic missiles (ICBMs, with ranges greater than 5,500 km) paired with 100 launchers, as well as submarine-launched ballistic missiles. The PLA fields hundreds of cruise missiles as well.²²¹
- **DF-26 IRBM:** According to DOD, this missile, which entered service in 2015, is a road-mobile IRBM that can conduct nuclear and conventional precision strikes against ground targets and conventional strikes at naval targets in the Western Pacific, South China Sea, and Indian Ocean.²²² Some analysts argue that the apparent ability to swap out conventional and nuclear warheads quickly could create ambiguity and create opportunities for dangerous inadvertent escalation.²²³ DOD revised its estimate of DF-26 launchers from 80 in 2019 to 200 in 2020.²²⁴
- **DF-41 ICBM:** DOD and others estimate that this intercontinental ballistic missile, which is "currently in various stages of development and deployment" according to the International Institute for Strategic Studies,²²⁵ could have a range of 12,000-15,000 km.²²⁶ DOD notes it is road-mobile and suggests it could be launched from silos and transported via rail. It is capable of carrying multiple independently targetable reentry vehicles.²²⁷ Other ICBMs the PLARF currently

²¹⁹ Shou Xiaosong, ed., *The Science of Military Strategy* (Beijing, China: Military Science Press, 2013). Translation. See also Eric Heginbotham, *China's Evolving Nuclear Deterrent: Major Drivers and Issues for the United States*, The RAND Corporation, 2017, pp. 61-67; "How Is China Modernizing Its Nuclear Forces?" ChinaPower, updated October 28, 2020, at <https://chinapower.csis.org/china-nuclear-weapons/>; Hans M. Kristensen and Matt Korda, "Chinese Nuclear Forces, 2020," *Bulletin of the Atomic Scientists*, vol. 76, no. 6 (2020).

²²⁰ Nancy Gallagher, "China on Arms Control, Nonproliferation, and Strategic Stability," University of Maryland Center for International and Security Studies at Maryland, August 2019, pp. 7-8.

²²¹ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 166. According to one source, "From time to time, U.S. military publications have asserted somewhat ambivalently that one or more of China's cruise missiles might have nuclear capability. However, we assess that although China might have developed warhead designs for potential use in cruise missiles, it does not have any active nuclear cruise missiles in its stockpile." Hans M. Kristensen and Matt Korda, "Chinese Nuclear Forces, 2020," *Bulletin of the Atomic Scientists*, vol. 76, no. 6 (2020), p. 454.

²²² U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, pp. 56, 59, 73.

²²³ Ankit Panda, "China's Dual-Capable Missiles: A Dangerous Feature, Not a Bug," *The Diplomat*, May 13, 2020, at <https://thediplomat.com/2020/05/chinas-dual-capable-missiles-a-dangerous-feature-not-a-bug/>.

²²⁴ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 166; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019*, May 2, 2019, p. 117.

²²⁵ International Institute for Strategic Studies, *Military Balance+* database.

²²⁶ Missile Threat: CSIS Missile Defense Project, "DF-41 (Dong Feng-41 / CSS-X-20)," at <https://missilethreat.csis.org/missile/df-41/>.

²²⁷ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the*

fields include the road-mobile DF-31 and the DF-5, the PLA's oldest and longest-range ICBM, variants of which can carry up to five multiple independently targetable reentry vehicles, according to DOD.²²⁸

- **Hypersonic glide vehicles:** China has invested heavily in and is testing a hypersonic glide vehicle, the DF-ZF, which, according to DOD and other observers, would be paired with the DF-17 medium-range missile system.²²⁹ The DF-17/DF-ZF likely is aimed at evading ballistic missile defenses,²³⁰ and could be the first intermediate-range hypersonic glide vehicle to be fielded (the United States is developing hypersonic glide vehicles as well, and Russia announced it had deployed its first such weapon in 2019). In 2020, a U.S. military commander appeared to suggest that the DF-41 also could carry a nuclear hypersonic glide vehicle.²³¹
- **CJ-100/DF-100 cruise missile:** Unveiled at the PLA's October 2019 National Day military parade, the CJ-100 is a ground launched cruise missile that some observers expect to have a 6,000 km strike range if paired with the PLAAF's H-6N bomber.²³²
- **SRBMs:** China's SRBM force, which is improving its range, accuracy, and payload sophistication, would have particular relevance at the outset of a Taiwan conflict. Among these is the DF-16 (which DOD refers to as an SRBM but others consider a MRBM). Many PLARF missile brigades are located across the Taiwan Strait from Taiwan.²³³ The SRBM force is becoming smaller over time as ground-launched cruise missiles and MRBMs have come online.²³⁴

See the **Appendix** for visual representations DOD has developed of the ranges of China's missile forces.

People's Republic of China 2020, August 21, 2020, pp. 56, 89.

²²⁸ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 56.

²²⁹ CRS In Focus IF11459, *Defense Primer: Hypersonic Boost-Glide Weapons*, by Kelley M. Sayler and Amy F. Woolf; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, pp. 56, 141; Missile Threat: CSIS Missile Defense Project, "DF-17," at <https://missilethreat.csis.org/missile/df-17/>.

²³⁰ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, pp. 56, 87.

²³¹ Testimony of Terrence J. O'Shaughnessy, United States Air Force Commander, U.S. Northern Command and North American Aerospace Defense Command, to Senate Armed Services Committee, *United States Northern Command and United States Strategic Command*, hearings, February 13, 2020; CRS In Focus IF11459, *Defense Primer: Hypersonic Boost-Glide Weapons*, by Kelley M. Sayler and Amy F. Woolf.

²³² Minnie Chan and Liu Zhen, "China's New Supersonic Arsenal Could Give H-6N Bomber Force Greater Reach, Military Experts Say," *South China Morning Post*, November 10, 2019, at <https://www.scmp.com/news/china/military/article/3036994/chinas-new-supersonic-arsenal-could-give-h-6n-bomber-force>.

²³³ CSIS ChinaPower, "How Are China's Land-Based Conventional Missile Forces Evolving?" updated May 12, 2021, at <https://chinapower.csis.org/conventional-missiles/>; Rick Joe, "Anatomy of a Taiwan Invasion Part 2: Missile and Naval Domains," *The Diplomat*, April 19, 2019, at <https://thediplomat.com/2019/04/anatomy-of-a-taiwan-invasion-part-2-missile-and-naval-domains/>; Ankit Panda, "For the Third Time Ever, China Shows Off Its DF-16 Medium-Range Ballistic Missile," *The Diplomat*, February 7, 2017, at <https://thediplomat.com/2017/02/for-third-time-ever-china-shows-off-its-df-16-medium-range-ballistic-missile/>.

²³⁴ CSIS ChinaPower, "How Are China's Land-Based Conventional Missile Forces Evolving?" updated May 12, 2021, at <https://chinapower.csis.org/conventional-missiles/>.

The Sub-Service Forces

Among the most significant changes wrought by the PLA's reform and reorganization effort was the creation of the Joint Logistics Support Force and the Strategic Support Force. These entities are considered sub-service forces that centralize and streamline warfare enablers like logistics, space, cyber, electronic, and psychological operations.

PLA Strategic Support Force

Established in 2015, the PLA Strategic Support Force (SSF) centralizes the command and control of space operations and information operations (which include cyber, electronic, and psychological warfare). The SSF also supports the use of these capabilities by the services. As noted above, China's military strategists and leaders describe securing dominance in the space and cyber domains as essential to winning a conflict in an "informatized" environment. DOD assessed in 2020 that the SSF's "current major target is the United States."²³⁵

Much remains unknown about the SSF to outside observers, including the contours of its bureaucratic elements and full scope of its missions and responsibilities. For example, it may have a role in developing or fielding other capabilities such as directed energy weapons and kinetic energy weapons.²³⁶

Information Operations: Cyber, Electronic, and Psychological Warfare

The PLA's information warfare strategy emphasizes overcoming a militarily superior adversary by exploiting the adversary's reliance on critical nodes in the electronic, space, cyber, and psychological domains. Three of these four warfare areas are now centralized under the SSF's Network Systems Department.²³⁷ The structure of this department and the SSF more generally reflects a holistic approach to information operations, conceptually and operationally linking purely military elements such as electronic warfare to elements such as cyber and psychological warfare, which also can have political, economic, and intelligence dimensions.²³⁸ The PLA, recognizing the ways in which modern "informatized" war blurs the distinction between peace and kinetic conflict, also emphasizes the applicability of many information operations in peacetime.²³⁹ The PLA has been increasing its emphasis on information operations in training and exercises.²⁴⁰

The PLA's cyber capabilities—defense, offense, and reconnaissance—all have been centralized under the SSF.²⁴¹ The PLA seeks to use offensive cyber operations to disrupt, degrade, or damage

²³⁵ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. viii.

²³⁶ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 41.

²³⁷ John Costello and Peter Mattis, "Chapter 6: Electronic Warfare and the Renaissance of Chinese Information Operations," in *China's Evolving Military Strategy*, ed. Joe McReynolds (Washington, DC: Jamestown Foundation, 2017), p. 180.

²³⁸ John Costello and Peter Mattis, "Chapter 6: Electronic Warfare and the Renaissance of Chinese Information Operations," in *China's Evolving Military Strategy*, ed. Joe McReynolds (Washington, DC: Jamestown Foundation, 2017), pp. 173-181.

²³⁹ John Costello and Peter Mattis, "Chapter 6: Electronic Warfare and the Renaissance of Chinese Information Operations," in *China's Evolving Military Strategy*, ed. Joe McReynolds (Washington, DC: Jamestown Foundation, 2017), pp. 196-199.

²⁴⁰ Elsa Kania and John K. Costello, "The Strategic Support Force and the Future of Chinese Information Operations," *Cyber Defense Review* (Spring 2018), p. 110.

²⁴¹ DOD believes the centralization of the full range of PLA cyber capabilities in one entity might indicate the PLA will

adversary systems, including critical infrastructure, preceding and during multiple stages of a conflict and in a variety of conflict scenarios; it seeks to use defensive cyber operations to defend against the same capability from an adversary. Reconnaissance includes a broader set of capabilities, including those used in peacetime. This includes cyber espionage against military, civilian, or commercial targets and theft of military technological know-how, intellectual property, and the like.²⁴² In some cases, espionage and reconnaissance intrusions can be leveraged later for destructive capability. According to DOD, “the PRC presents a significant, persistent cyber espionage and attack threat,” though PLA leaders seem to believe PRC cyber warfare capabilities remain inferior to those of the United States.²⁴³

Electronic warfare, which the PLA through the SSF seeks to integrate more thoroughly with cyber warfare,²⁴⁴ comprises a range of capabilities involving interfering with or disrupting electronic and communications equipment, with an emphasis on jamming and anti-jamming.

Psychological warfare—referred to by PRC military strategists as one of the “three warfares”²⁴⁵ of psychological warfare, public opinion warfare, and legal warfare—also falls in part under the SSF.²⁴⁶ Regarding psychological warfare, the 2001 edition of the *Science of Military Strategy* explains

The target of modern psychological warfare is not limited to the enemy forces as it also includes all people of the hostile country. Meanwhile, it assumes the mission of educating our own military and civilians.... Its key target, however, is the enemy's decision-making level, meaning it uses all kinds of means to attack that level's thinking, conviction, will, feeling, and identifying systems in order to cause wrong understandings, assessments, and decisions, and shake its thinking and conviction and will of resistance to achieve the objective of defeating the enemy without fighting. It is implemented not only in wartime but also in massive and continued scale in peacetime.²⁴⁷

eventually establish a standalone “cyber force.” U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 62.

²⁴² For examples of cyber espionage attributed to China-based actors against U.S. defense, defense industry, and other targets with ties to the U.S. military, see Gordon Lubold and Dustin Volz, “Chinese Hackers Breach U.S. Navy Contractors,” *Wall Street Journal*, December 14, 2018, at <https://www.wsj.com/articles/u-s-navy-is-struggling-to-fend-off-chinese-hackers-officials-say-11544783401>; Joseph Menn, “China-Based Campaign Breached Satellite, Defense Companies: Symantec,” *Reuters*, June 19, 2018, at <https://www.reuters.com/article/us-china-usa-cyber/china-based-campaign-breached-satellite-defense-companies-symantec-idUSKBN1JF2X0>.

²⁴³ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 74.

²⁴⁴ John Costello and Joe McReynolds, “China's Strategic Support Force: A Force for a New Era,” in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, Phillip C. Saunders et al., eds. (Washington, DC: National Defense University Press, 2019), pp. 463-464.

²⁴⁵ The “three warfares” and influence operations more broadly are incorporated throughout the PLA, as well as in the Central Military Commission, not just within the SSF. In 2005, the Central Military Commission approved PLA-wide guidelines incorporating the “three warfares” into training and education. Elsa Kania, “The PLA's Latest Strategic Thinking on the Three Warfares,” *Jamestown Foundation China Brief*, August 22, 2016, at <https://jamestown.org/program/the-plas-latest-strategic-thinking-on-the-three-warfares/>; Edwin S. Cochran, “China's ‘Three Warfares’: People's Liberation Army Influence Operations,” *International Bulletin of Political Psychology*, vol. 20, no. 3, September 7, 2020.

²⁴⁶ John Costello and Joe McReynolds, “China's Strategic Support Force: A Force for a New Era,” in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, eds. Phillip C. Saunders et al. (Washington, DC: National Defense University Press, 2019), pp. 465-467.

²⁴⁷ *Science of Military Strategy (2001 edition)*, as translated and quoted in John Costello and Peter Mattis, “Chapter 6: Electronic Warfare and the Renaissance of Chinese Information Operations,” in *China's Evolving Military Strategy*, Joe McReynolds, ed. (Washington, DC: Jamestown Foundation, 2017), p. 192.

Space Operations

The SSF's Space Systems Department manages almost all of China's military space operations, including space launch and support, space surveillance, space information support, space telemetry, tracking and control, and space warfare.²⁴⁸

PRC officials have stated that China aims to be “among the major space powers of the world” by around 2030.²⁴⁹ The importance of space in China's military strategy has grown in the past twenty years, with PRC leaders identifying space as one of the “commanding heights” of warfare in 2015.²⁵⁰ The space domain is critical to C4ISR systems. Military operations beyond-the-line-of-sight, including precision strikes, also are dependent on space-based tracking. China's leaders assess that dominance in space will enable China to protect its own economic, geopolitical, and security interests while deterring military aggression from potential adversaries (such as the United States), whose network-centric warfare capabilities are heavily dependent on space-based assets.²⁵¹ Although China's space capabilities generally lag behind those of the United States, China's space program is rapidly maturing.²⁵²

The PLA is developing several militarily significant space and counterspace capabilities. These include but are not limited to the following.

- The PLA possesses or is developing counterspace capabilities to target adversary space assets, such as direct-ascent anti-satellite missiles, ground-based lasers, and co-orbital space weapons, in addition to cyber and electronic warfare capabilities against space targets.²⁵³ PRC officials have not clarified how the pursuit of these capabilities comports with China's stated policy of advocating for the peaceful use and nonweaponization of space in the U.N. and other fora.²⁵⁴
- China completed its Beidou Satellite Navigation System in July 2020, providing global coverage and enabling the PLA to command and control its forces across the globe. It also enables the PLA to track and target foreign forces, and reduces the PLA's dependence on the U.S. global positioning system (GPS).²⁵⁵
- China is honing its space launch capabilities. Its Long March rocket series has completed more than 300 launches since the program began in 1970; Chinese entities operate or own about 14% of all known satellites in orbit, more than any

²⁴⁸ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. viii.

²⁴⁹ Abigail Beall, “Everything You Need to Know About China's Ambitious Space Plans,” *Wired.com*, November 18, 2017; Xinhua, “China Looks to Mars, Jupiter Exploration,” January 30, 2017, at https://www.chinadailyasia.com/nation/2017-01/30/content_15564749.html.

²⁵⁰ PRC State Council Information Office, *China's Military Strategy*, May 26, 2015.

²⁵¹ Kevin Pollpeter and Jonathan Ray, “The Conceptual Evolution of China's Military Space Operations and Strategy,” in *China's Evolving Military Strategy* (Washington, DC: Jamestown Foundation, 2017), pp. 279-285.

²⁵² Alexander Bowe, “China's Pursuit of Space Power Status and Implications for the United States,” U.S.-China Economic and Security Review Commission, April 11, 2019, p. 12; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 63.

²⁵³ U.S. Defense Intelligence Agency, *Challenges to Security in Space*, January 2019, pp. 20-21.

²⁵⁴ PRC State Council Information Office, *China's Space Activities in 2016*, December 2016.

²⁵⁵ *China Daily*, “Xi Declares Start of Beidou's Full-Scale Global Service,” July 31, 2020, at http://en.people.cn/n3/2020/0731/c90000-9716998.html?utm_; U.S. Defense Intelligence Agency, *Challenges to Security in Space*, January 2019, p. 19.

country other than the United States. A Long March variant launched the spacecraft that supported China's six crewed space missions.²⁵⁶

Beyond the SSF, other parts of the PLA, PRC government (most notably the China National Space Administration), and commercial entities are involved in various elements China's space enterprise. Indeed, China's "space dream" of being a major world power in space extends beyond the military realm. PRC leaders aspire for the country to be a leader in civilian space as well, reaping economic, scientific, diplomatic, and reputational benefits.²⁵⁷ Unlike in the United States, China's civilian and military space programs are integrated in several ways, with the PLA overseeing the full space enterprise. National strategies such as civil-military fusion (discussed below) facilitate the leveraging of civilian space research and development (R&D) and other resources for military applications.

PLA Joint Logistics Support Force

After decades of uneven reform and modernization of military logistics in China, the PLA established the Joint Logistics Support Force (JLSF) in 2016. The JLSF is tasked with facilitating joint logistics across the services. Joint logistics is defined in PLA documents as "unify[ing] the organization of the services to implement basic logistics work; avoid[ing] duplicate staffing, organizations, and facilities; and rationally distribut[ing] workforce, material, and financial resources to support joint operations and joint activities."²⁵⁸ Key features of military logistics under this new structure include a significantly transformed command structure more oriented toward supporting joint operations; "informatization," or the streamlining and standardizing of logistics information systems; the leveraging of civilian expertise and resources via civil-military fusion (see "Military-Civil Fusion" below); and the reduction of corruption, among other things.²⁵⁹

Logistics is one of three "key vulnerabilities" of the PLA, according to DIA.²⁶⁰ Many observers posit that the PLA's logistics reforms have succeeded in enabling forces to conduct large-scale military operations along interior lines, but note that logistics in support of power projection remains a weakness.²⁶¹ Airlift, sealift, aerial refueling, and at-sea replenishment capabilities are

²⁵⁶ CSIS ChinaPower, "How Is China Advancing Its Space Launch Capabilities?" at <https://chinapower.csis.org/china-space-launch/>; U.S. Defense Intelligence Agency, *Challenges to Security in Space*, January 2019, p. 16.

²⁵⁷ In 2018, China claimed it had signed 121 cooperative agreements on space with 37 countries and international organizations. The SSF operates tracking, telemetry, and command stations in Argentina, Namibia, and Pakistan. Xinhua, "China Strengthens International Space Cooperation," April 19, 2018, at http://english.www.gov.cn/state_council/ministries/2018/04/19/content_281476117420730.htm; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 63.

²⁵⁸ *China Military Logistics Encyclopedia*, as cited and translated by LeighAnn Luce and Erin Richter, "Handling Logistics in a Reformed PLA," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, Phillip C. Saunders et al., eds. (Washington, DC: National Defense University Press, 2019), p. 258.

²⁵⁹ LeighAnn Luce and Erin Richter, "Handling Logistics in a Reformed PLA," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, eds. Phillip C. Saunders et al. (Washington, DC: National Defense University Press, 2019), pp. 257-280.

²⁶⁰ U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 7.

²⁶¹ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, pp. 66, 73; LeighAnn Luce and Erin Richter, "Handling Logistics in a Reformed PLA," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, Phillip C. Saunders et al., eds. (Washington, DC: National Defense University Press, 2019), pp. 261, 279.

areas where the PLA seeks to improve. Its investment in platforms like the Y-20 large-transport aircraft, replenishment vessels, and other logistic support ships aims to close these gaps.²⁶²

The PLA's first overseas military base, in Djibouti, is an initial test of expeditionary logistics in peacetime, and the extent to which the PLA succeeds in executing logistics in Djibouti and possible future overseas bases will shed light on its competency in this area. In line with civil-military fusion imperatives, China leverages civilian logistics systems and commercial infrastructure to support its overseas military operations. Some observers predict the PRC could secure access to commercial infrastructure developed or financed by Chinese companies in strategically located countries (via the Belt and Road Initiative and other projects) for additional military logistics and access needs.²⁶³ DOD assesses that "a global PLA military logistics network could both interfere with U.S. military operations and support offensive operations against the United States as the PRC's global military objectives evolve."²⁶⁴

Training, Exercises, and Education Across the Services

The ongoing reform and reorganization of the PLA has brought renewed emphasis on, and scrutiny of, training, exercises, and education, particularly given the initiative's imperative of increasing jointness within the force. China's 2019 defense white paper noted, "Military training in real combat conditions across the armed forces is in full swing."²⁶⁵ Each service is expending resources to educate personnel; to exercise less-scripted, more realistic combat scenarios; to chip away at institutional tendencies to underreport shortcomings and instead openly discuss them; and to invest in and cultivate a more highly-educated force.²⁶⁶

The PLA increasingly is engaging in training, education, and exercises with other countries. According to China's 2019 defense white paper, China held more than 100 exercises or training activities with more than 30 countries between 2012 and 2019, sent more than 1,700 military personnel to more than 50 countries for "study," and hosted more than 10,000 foreign military personnel at Chinese military educational institutions.²⁶⁷ From 2003 to 2016, the PLA exercised most with Russia (38 exercises), Pakistan (29), the United States (25), and Thailand (21).²⁶⁸ U.S.-China military exercises (and military-to-military engagements more broadly) have since declined.

²⁶² Kristen Gunness, "The Dawn of a PLA Expeditionary Force?" in *Securing the Belt and Road Initiative: China's Evolving Military Engagement Along the Silk Roads*, Nadège Rolland, ed., National Bureau of Asian Research, September 2019, p. 45; Will Mackenzie, "Commentary: It's the Logistics, China," *National Defense Magazine*, June 10, 2020, at <https://www.nationaldefensemagazine.org/articles/2020/6/10/its-the-logistics-china>.

²⁶³ Kristen Gunness, "The Dawn of a PLA Expeditionary Force?" in *Securing the Belt and Road Initiative: China's Evolving Military Engagement Along the Silk Roads*, ed. Nadège Rolland, National Bureau of Asian Research, September 2019, p. 39; U.S. Department of Defense, *Assessment on U.S. Defense Implications of China's Expanding Global Access*, December 2018, pp. 4, 12.

²⁶⁴ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 128.

²⁶⁵ PRC State Council Information Office, *China's National Defense in the New Era*, July 2019.

²⁶⁶ Testimony of independent analyst and former U.S. army attaché to Beijing and Hong Kong Lieutenant Colonel (ret.) Dennis J. Blasko, in U.S.-China Economic and Security Review Commission, *What Keeps Xi Up at Night: Beijing's Internal and External Challenges*, hearings, February 7, 2019.

²⁶⁷ PRC State Council Information Office, *China's National Defense in the New Era*, July 2019.

²⁶⁸ Kenneth Allen, Phillip C. Saunders, and John Chen, "Chinese Military Diplomacy, 2003-2016: Trends and Implications," Institute for National Strategic Studies, *China Strategic Perspectives* 11, July 2017, p. 45.

PLA Capability Gaps and Uncertainties

While the rapid improvement in the overall capability of the PLA has drawn considerable attention from outside observers for many years, questions and uncertainties remain—particularly from within the PLA itself—about its ability to execute its missions.²⁶⁹

Observers inside and outside the PLA cite China's lack of recent combat experience as a significant weakness—China last fought a war in 1979.²⁷⁰ PLA officials frequently refer to a “peace disease” endemic in the force, and worry that troops who have never seen battle will become complacent and struggle to maintain readiness.²⁷¹ As noted above, a related oft-cited weakness is an insufficiently realistic training and exercise regimen, and PLA leaders have long called for more complex and sophisticated training and exercises to better prepare an untested force for potential conflicts.²⁷² The PLAA in particular is struggling to train personnel to operate an influx of new, advanced equipment that is replacing legacy systems;²⁷³ to develop commanders' ability to manage new combined arms units; and to develop smaller, more agile, and more modular formations in order to meet the requirements of “new-type operations.”²⁷⁴

Although Xi's reform and reorganization is designed to improve the PLA's ability to “fight and win,”²⁷⁵ the initiative is still ongoing. As the PLA reorganizes itself, the force is undergoing a period of significant disruption, leading some observers to question whether the PLA might be acutely unprepared for conflict while the reorganization process is ongoing.²⁷⁶ The reform and

²⁶⁹ Testimony of independent analyst and former U.S. army attaché to Beijing and Hong Kong Lieutenant Colonel (ret.) Dennis J. Blasko, in U.S.-China Economic and Security Review Commission, *What Keeps Xi Up at Night: Beijing's Internal and External Challenges*, hearings, February 7, 2019; Michael S. Chase et al., *China's Incomplete Military Transformation: Assessing the Weaknesses of the People's Liberation Army (PLA)*, RAND Corporation, Santa Monica, CA, 2015, at http://www.rand.org/pubs/research_reports/RR893.html.

²⁷⁰ Some observers debate the extent to which China's lack of combat experience hinders the PLA's ability to execute its missions, with some arguing it may not be as significant a weakness as is generally presumed. For example, see Timothy R. Heath, “China's Military Has No Combat Experience: Does It Matter?” The RAND Blog, November 27, 2018, at <https://www.rand.org/blog/2018/11/chinas-military-has-no-combat-experience-does-it-matter.html>.

²⁷¹ Testimony of independent analyst and former U.S. army attaché to Beijing and Hong Kong Lieutenant Colonel (ret.) Dennis J. Blasko, in U.S.-China Economic and Security Review Commission, *What Keeps Xi Up at Night: Beijing's Internal and External Challenges*, hearings, February 7, 2019.

²⁷² Li Xuanliang and Liu Jimei, “Xi Jinping Stresses at CMC Military Training Conference: Strengthen Combat-Realistic Military Training in All-Round Way, Comprehensively Enhance Training Level, Winning Abilities,” Xinhua, November 25, 2020. Translation; testimony of independent analyst and former U.S. army attaché to Beijing and Hong Kong Lieutenant Colonel (ret.) Dennis J. Blasko, in U.S.-China Economic and Security Review Commission, *What Keeps Xi Up at Night: Beijing's Internal and External Challenges*, hearings, February 7, 2019.

²⁷³ Managing a mix of old and new equipment, referred to as the problem of having “three generations under one roof,” poses challenges for command and control, education and training, and maintenance, among other things. Dennis J. Blasko, “The Biggest Loser in Chinese Military Reforms,” in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, Phillip C. Saunders et al., eds. (Washington, DC: National Defense University Press, 2019), pp. 362-363.

²⁷⁴ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, pp. 41, 77; U.S. Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 58; testimony of independent analyst and former U.S. Army Attaché to Beijing and Hong Kong Lieutenant Colonel (ret.) Dennis J. Blasko, in U.S.-China Economic and Security Review Commission, *What Keeps Xi Up at Night: Beijing's Internal and External Challenges*, hearings, February 7, 2019, pp. 10-11.

²⁷⁵ Xinhua, “Full Text of Xi Jinping's Report at 19th CPC National Congress,” November 3, 2017, at http://www.xinhuanet.com/english/special/2017-11/03/c_136725942.htm.

²⁷⁶ Dennis J. Blasko, “The PLA Army After ‘Below the Neck’ Reforms: Contributing to China's Joint Warfighting, Deterrence and MOOTW Posture,” *Journal of Strategic Studies*, vol. 42, no. 2, pp. 150, 171, 180.

reorganization's effort to achieve jointness is also ongoing, and jointness remains a major challenge.²⁷⁷ Even as the services conduct more exercises than ever before, relatively few are joint: between 2012 and 2019, 80 joint exercises occurred at or above the brigade/division level, according to China's 2019 defense white paper.²⁷⁸ Scholars found that 7% of all international military exercises in which the PLA participated from 2002 to 2016 included more than one PLA service.²⁷⁹ At least some joint exercises and training reportedly were suspended in 2020 due to COVID-19.²⁸⁰ Corruption, another target of the reform and reorganization, also presents a persistent vulnerability in the force.²⁸¹

Aside from force-wide personnel, organizational, and cultural challenges, the PLA continues to struggle in certain warfare areas, even as it excels in others. Areas of continued weakness include advanced anti-submarine warfare and power projection enabling capabilities (such as carrier operations; long-range intelligence, surveillance, and reconnaissance and targeting; sea-based air defense; over-water air operations; long-range logistics; and aerial refueling). In addition, China's defense industry has struggled to develop certain technologies and systems, such as high-performance jet engines (one former DIA official referred to the PLA's aerospace engine challenge as "an ongoing disaster for China").²⁸² This has hampered overall progress in modernizing the PLAAF in particular, and has required China to be highly dependent on foreign arms imports for aircraft and aircraft engines. It has also driven China's industrial policies and espionage efforts to acquire the technology and know-how required to bridge these gaps.²⁸³

Political and economic problems may also constrain the Chinese military. A significant increase in domestic unrest, or security risks from terrorism, transnational crime, public health threats, and natural disasters, could lead PRC leaders to divert more PLA resources toward managing these issues. Low levels of economic growth could reduce China's available resources to increase the defense budget.

Resourcing the PLA

China leverages significant economic, scientific, and human resources to fuel its military modernization.

²⁷⁷ Ian Burns McCaslin and Andrew S. Erickson, "The Impact of the Xi-Era Reforms on the Chinese Navy," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, Phillip C. Saunders et al., eds. (Washington, DC: National Defense University Press, 2019), pp. 139-140.

²⁷⁸ PRC State Council Information Office, *China's National Defense in the New Era*, July 2019.

²⁷⁹ Kenneth Allen, Phillip C. Saunders, and John Chen, "Chinese Military Diplomacy, 2003-2016: Trends and Implications," Institute for National Strategic Studies, *China Strategic Perspectives* 11, July 2017, p. 32.

²⁸⁰ IISS, "China," in *The Military Balance 2021*, February 25, 2021, p. 2.

²⁸¹ Charles Clover, "China's Military Goes to War on Corruption," *Financial Times*, July 6, 2015.

²⁸² Testimony of George Washington University Professional Lecturer and retired Defense Intelligence Officer for East Asia at the Defense Intelligence Agency Lonnie Henley, to U.S.-China Economic and Security Review Commission, *Deterring PRC Aggression Toward Taiwan*, hearings, February 18, 2021.

²⁸³ Aircraft and aircraft engines accounted for 71% of China's arms imports from 2015 to 2019. ChinaPower, "How Developed Is China's Arms Industry?" updated February 25, 2021, at <https://chinapower.csis.org/arms-companies/>; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2018*, May 16, 2018, p. 86.

China's Defense Budget

China has the second-largest officially reported defense budget in the world, after the United States. It has increased its defense spending every year for more than two decades and nearly doubled its budget since 2009.²⁸⁴ In March 2021, China announced its officially-disclosed defense budget for 2021, 1.355 trillion renminbi (about \$209 billion based on the exchange rate at the time of the announcement), a 6.8% nominal increase from its announced 2020 budget.²⁸⁵ The rate of China's 2020 budget increase was 6.6%, the lowest in 32 years, according to PRC state media, a fact some observers attributed to the economic downturn inflicted on the PRC economy by the COVID-19 pandemic.²⁸⁶ The slight increase in 2021 reflects "the sturdier footing that China's economy is on compared to" 2020, according to the International Institute for Strategic Studies.²⁸⁷

Calculating and assessing China's actual defense spending is challenging, as is making comparative assessments between China's and other countries' spending.²⁸⁸ This is in part because China's announced budget figures are opaque, lack detail, and do not appear to include a number of defense-related expenditures, such as some paramilitary spending, some personnel compensation costs, and some defense-related research, development, testing, and evaluation expenditures.²⁸⁹ Observers outside China, including DOD, estimate that China's defense spending is greater than the Chinese government officially acknowledges.²⁹⁰ For example, whereas China announced a defense budget of around \$177.6 billion in 2019, DOD estimated China's military-related spending could have been more than \$200 billion that year, and the Stockholm International Peace Research Institute estimated China's nominal defense spending to be even higher, at \$240 billion.²⁹¹

²⁸⁴ The Stockholm International Peace Research Institute estimated that in 2019, the United States and China accounted for 38% and 14% of global military expenditures, respectively. Stockholm International Peace Research Institute, "Military Expenditure," at <https://www.sipri.org/research/armament-and-disarmament/arms-and-military-expenditure/military-expenditure>. See also International Institute for Strategic Studies, *Military Balance+* database.

²⁸⁵ Xinhua, "China Focus: China's Defense Budget Maintains Single-Digit Growth for Six Consecutive Years," March 5, 2021, at http://www.xinhuanet.com/english/2021-03/05/c_139787354.htm.

²⁸⁶ Bonnie Glaser et al., "Breaking Down China's 2020 Defense Budget," Center for Strategic and International Studies, May 22, 2020, at <https://www.csis.org/analysis/breaking-down-chinas-2020-defense-budget#:~:text=Chinese%20officials%20revealed%20on%20Friday,7.2%20percent%20and%208.1%20percent>.

²⁸⁷ Fenella McGerty and Meia Nouwens, "China's New Five-Year Plan and 2021 Budget: What Do They Mean for Defence?" IISS Blog, March 8, 2021, at <https://www.iiss.org/blogs/analysis/2021/03/chinas-new-five-year-plan-and-2021-budget>.

²⁸⁸ For an exploration of the challenges of and methodologies for calculating China's defense budget, and a case study on how one organization—the Stockholm International Peace Research Institute—went about revising its approach to measuring China's military expenditure, see Nan Tian and Fei Su, "A New Estimate of China's Military Expenditure," Stockholm International Peace Research Institute, January 2021; and Meia Nouwens and Lucie Béraud-Sudreau, "Assessing Chinese Defense Spending: Proposals for New Methodologies," International Institute for Strategic Studies, March 31, 2020, at <https://www.iiss.org/blogs/research-paper/2020/03/assessing-chinese-defence-spending>.

²⁸⁹ Tai Ming Cheung, "Keeping Up with the *Jundui*," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms* (Washington, DC: National Defense University Press, 2019), p. 586; Frederico Bartels, "China's Defense Budget in Context: How Under-Reporting and Differing Standards and Economies Distort the Picture," The Heritage Foundation, March 25, 2020, at <https://www.heritage.org/asia/report/chinas-defense-budget-context-how-under-reporting-and-differing-standards-and-economies>; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 140.

²⁹⁰ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 139.

²⁹¹ Mu Xuequan, "China Focus: China to Lower Defense Budget Growth to 7.5 Percent," Xinhua, May 3, 2019, at http://www.xinhuanet.com/english/2019-03/05/c_137871426.htm; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p.

PRC leaders generally seek to align increases in defense spending with overall economic growth.²⁹² As such, China's defense spending has tracked fairly consistently as a percentage of gross domestic product (GDP) since the mid-1990s.²⁹³ DOD estimates that economic growth projections for China suggest it can fund growing defense expenditures for at least 5 to 10 more years.²⁹⁴

China's 2019 defense white paper states that increases in China's military budget since 2012 are attributable to the following: (1) "adapting to national economic and social development" by increasing compensation and quality of resources for military personnel; (2) integrating modern equipment into the force while phasing out old equipment; (3) reforming and reorganizing the PLA; (4) enhancing the quality and sophistication of training; and (5) supporting "diverse military tasks" such as U.N. peacekeeping operations and other regional and global military activities.²⁹⁵ The 2019 defense white paper was the first since 2010 to articulate China's defense spending trends and aims in such detail.

Military-Civil Fusion

Since the 1990s, China's leaders have sought to find synergies between economic development and military modernization, leveraging each to enrich the other. This sprawling and ambitious initiative, previously called civil-military integration and now referred to as military-civil fusion, has taken on greater resonance as the PLA seeks to leverage advanced and emerging technologies and manufacturing capabilities to build a fully "informatized" force. In 2015, at Xi's direction, it was deemed a national strategy.²⁹⁶

The consensus among PRC military scholars and leaders, informed in part by observations of U.S. military operations and technological development, is that military superiority in the 21st century hinges on the ability to harness civilian science and technology resources and integrate them into military operations.²⁹⁷ Chinese scholars argue that China's defense budget—which the PRC presents as insufficient to meet China's defense needs²⁹⁸—will need to expand to unsustainable levels as the PLA replaces legacy systems with more modern and expensive ones.²⁹⁹ For this reason, they argue, the task of resourcing the PLA should be shouldered by both the defense budget and various civilian sources. PRC strategists also deem military-civil fusion

140; Nan Tian and Fei Su, "A New Estimate of China's Military Expenditure," Stockholm International Peace Research Institute, January 2021, pp. 18-19.

²⁹² PRC State Council Information Office, *China's National Defense in the New Era*, July 2019.

²⁹³ While China's 2019 defense white paper states defense spending as a percentage of GDP has hovered around 1.3% since 2010, the Stockholm International Peace Research Institute estimates it to be 1.9% during that timeframe. PRC State Council Information Office, *China's National Defense in the New Era*, July 2019; Nan Tian et al., "Trends in World Military Expenditure, 2019," Stockholm International Peace Research Institute, April 2020, p. 2.

²⁹⁴ U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 139.

²⁹⁵ PRC State Council Information Office, *China's National Defense in the New Era*, July 2019.

²⁹⁶ Elements of military-civil fusion appear in China's industrial policies, such as "Made in China 2025." For details, see CRS In Focus IF10964, "Made in China 2025" Industrial Policies: Issues for Congress, by Karen M. Sutter.

²⁹⁷ Elsa Kania, "In Military-Civil Fusion, China Is Learning Lessons from the United States and Starting to Innovate," *Strategy Bridge*, August 27, 2019, at <https://thestrategybridge.org/the-bridge/2019/8/27/in-military-civil-fusion-china-is-learning-lessons-from-the-united-states-and-starting-to-innovate>.

²⁹⁸ PRC State Council Information Office, *China's National Defense in the New Era*, July 2019.

²⁹⁹ Brian Lafferty, "Civil-Military Integration and PLA Reforms," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms* (Washington, DC: National Defense University Press, 2019), pp. 630-631.

prudent given that much of modern military technology is dual-use.³⁰⁰ This approach informs foreign acquisition and technology transfer as well; many Chinese defense firms serve both commercial and military roles, potentially facilitating such transfers and synergies. Moreover, the concept of military-civil fusion aligns with PRC leaders' and strategists' expansive conception of national security, which encompasses political, economic, cultural, technological, and other elements. One Chinese scholar of military-civil fusion notes

In the information era the lines are increasingly blurred between concepts like security and development, economic and military development, civil and military, peacetime and wartime, frontlines and rear areas, and military-use versus civilian use. These concepts are being increasingly fused together.³⁰¹

The military-civil fusion initiative has achieved some notable institutional successes. These include an oversight commission chaired by Xi and populated by other top-level Party leaders, a centralized online procurement information network to facilitate greater civilian company participation in military procurement, and several "civil-military fusion strategic projection bases" that seek to facilitate military use of civilian road, rail, aviation, and other logistics services and assets.³⁰² These demonstration bases also seek to acquire and integrate foreign advanced capabilities in sectors such as semiconductors and software and emerging technologies and include special military funds that target particular capabilities.³⁰³ Some observers suggest military-civil fusion has enhanced the PLA's and China's defense industry's exposure to advanced S&T expertise, particularly from foreign dual-use technologies and know-how.³⁰⁴

These advances notwithstanding, elements of the military-civil fusion vision have yet to be achieved, and it remains to be seen how it compares to the U.S. model of defense innovation.³⁰⁵ Political will at the highest levels does not yet appear to be sufficient to realign the myriad military, commercial, academic, and other actors and systems necessary to create new synergies and cost-savings between the civilian and military sectors. Entrenched interests; lack of initiative by industry and military actors at local levels; challenges related to the tension between the military bureaucracy's imperative of military secrecy and the importance of transparency for innovation; and the sheer enormity of the effort have all contributed to uneven and slow progress.³⁰⁶

³⁰⁰ According to one observer, Chinese scholars of military-civil fusion "regularly claim that over 80 percent of technologies used by leading military powers are dual-use." Brian Lafferty, "Civil-Military Integration and PLA Reforms," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms* (Washington, DC: National Defense University Press, 2019), pp. 634-635.

³⁰¹ Jiang Luming, "Why Civil-Military Integration Has Been Raised to a National Strategy," *PLA Daily*, February 3, 2017, as translated by and cited in Brian Lafferty, "Civil-Military Integration and PLA Reforms," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms* (Washington, DC: National Defense University Press, 2019), pp. 636-637.

³⁰² Brian Lafferty, "Civil-Military Integration and PLA Reforms," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms* (Washington, DC: National Defense University Press, 2019), pp. 636-637.

³⁰³ Lorand Laskai, "In Drive for Tech Independence, Xi Doubles Down on Civil-Military Fusion," *Jamestown Foundation China Brief*, May 9, 2018, at <https://jamestown.org/program/in-drive-for-tech-independence-xi-doubles-down-on-civil-military-fusion/>.

³⁰⁴ Yoram Evron, "China's Military-Civil Fusion and Military Procurement," in *Roundtable: China's Military-Civil Fusion Strategy: Development, Procurement, and Secrecy*, *Asia Policy*, vol. 16, no. 1 (January 2021), p. 41; U.S.-China Economic and Security Review Commission, *2019 Annual Report to Congress*, November 2019, p. 212.

³⁰⁵ Elsa B. Kania and Lorand Laskai, "Myths and Realities of China's Military-Civil Fusion Strategy," Center for a New American Security, January 28, 2021.

³⁰⁶ Zi Yang, "Opening Up While Closing Up: Balancing China's State Secrecy Needs and Military-Civil Fusion," in *Roundtable: China's Military-Civil Fusion Strategy: Development, Procurement, and Secrecy*, *Asia Policy*, vol. 16, no.

As the distinction between China's commercial, research, and military activities blurs through efforts like military-civil fusion, some observers see a growing risk that foreign researchers and companies—particularly those focused on emerging high-tech areas—could inadvertently support China's military modernization.³⁰⁷

China's Defense Industrial Base

Under the direction of the CMC and the State Council's State Administration for Science, Technology, and Industry for National Defense, China's defense industry planners have advanced widespread reforms to strengthen the defense industrial base. These include efforts to eradicate corruption and redundancies, foster innovation (including through military-civil fusion), and position China's defense companies to better serve China's military modernization and compete globally.³⁰⁸ The maturation of China's defense industry has enabled the country to become largely self-sufficient in arms production after decades of dependence on arms imports, particularly from Russia. (Russia still accounts for approximately 75% of China's arms imports, which tend to be advanced technology platforms that China has struggled to develop domestically.)³⁰⁹

In recent years, China's defense companies have become globally competitive (see **Table 2**). According to a Defense News ranking, Chinese state-owned defense companies comprised 8 of the 25 largest defense companies in the world in 2019 (by reported defense revenue).³¹⁰ As China's defense industry grows in sophistication, the country increasingly is exporting high-end systems, including submarines, frigates, precision-guided munitions, and armed unmanned aerial vehicles.³¹¹ China also is licensing production of some systems in other countries. According to some scholars of China's defense industry, "The pace and intensity of Chinese defense industry development represents a long-term challenge to U.S. superiority in military technology."³¹²

Driven by initiatives like military-civil fusion and its antecedents to accelerate China's ability to absorb and integrate foreign technology and expertise for domestic economic and military

1 (January 2021), pp. 46-64; Conor M. Kennedy, "China Maritime Report No. 4: Civil Transport in PLA Power Projection," U.S. Naval War College China Maritime Studies Institute, *CMSI China Maritime Reports 4* (December 2019), pp. 28-29; Brian Lafferty, "Civil-Military Integration and PLA Reforms," in *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms* (Washington, DC: National Defense University Press, 2019), pp. 639-640, 648-649.

³⁰⁷ Marcel Angliviél de la Beaumelle et al., "Open Arms: Evaluating Global Exposure to China's Defense-Industrial Base," C4ADS, October 17, 2019.

³⁰⁸ Tai Ming Cheung et al., "Chinese Defense Industry Reforms and Their Implications for US-China Military Technological Competition," Study of Innovation and Technology in China Research Brief, University of California Institute on Global Conflict and Cooperation, January 4, 2017.

³⁰⁹ Stockholm International Peace Research Institute, "SIPRI Arms Transfers Database," at <https://www.sipri.org/databases/armstransfers>.

³¹⁰ Two of these companies (#14-ranked China Shipbuilding Industry Corporation and #24-ranked China State Shipbuilding Corporation) merged in November 2019. "Top 100 for 2019," *Defense News*, at <https://people.defensenews.com/top-100/>. The Stockholm International Peace Research Institute, which also tracks defense companies, estimated that Chinese companies accounted for 3 of the top 10 largest arms-producing companies in the world, ranked by their arms sales in 2019. Lucie Béraud-Sudreau et al., "Mapping the International Presence of the World's Largest Arms Companies," Stockholm International Peace Research Institute, December 2020, p. 4.

³¹¹ U.S. Defense Intelligence Agency, *China Military Power Report*, 2019, p. 107; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019*, May 2, 2019, p. 27.

³¹² Tai Ming Cheung et al., "Chinese Defense Industry Reforms and Their Implications for US-China Military Technological Competition," Study of Innovation and Technology in China Research Brief, University of California Institute on Global Conflict and Cooperation, January 4, 2017.

advances, China's defense industry has benefitted from industrial policies such as forced technology transfer, industrial subsidies, state-financed acquisitions of foreign firms in strategic sectors, intellectual property theft, and traditional and cyber espionage.³¹³ In 2019, the then-director of national intelligence testified to the Senate Select Committee on Intelligence that "China remains the most active strategic competitor responsible for cyber espionage against the US Government, corporations, and allies."³¹⁴

Table 2. Global Rankings of China's Top Defense State-Owned Companies in 2019

Global defense company rankings based on assessments of defense revenues for 2019

Company	Defense News ranking (out of 100)	Stockholm International Peace Research Institute ranking (out of 25)
Aviation Industry Corporation of China (AVIC)	6	6
China North Industries Group Corporation Limited (NORINCO)	8	9
China Aerospace Science and Industry Corporation (CASIC)	11	Not ranked
China Shipbuilding Industry Corporation (CSIC)	14	Not ranked
China Electronics Technology Group Corporation (CETC)	15	8
China South Industries Group Corporation (CSGC)	18	24
China Aerospace Science and Technology Corporation (CASC)	20	Not ranked
China State Shipbuilding Corporation (CSSC)	24	Not ranked
China National Nuclear Corporation (CNNC)	Not ranked	Not ranked

Source: Defense News, "Top 100 for 2019"; Lucie Béraud-Sudreau et al., "Mapping the International Presence of the World's Largest Arms Companies," Stockholm International Peace Research Institute, December 2020.

Notes: Both Defense News and SIPRI ranked companies by reported defense revenue. China's two largest shipbuilding companies, China Shipbuilding Industry Corporation and China State Shipbuilding Corporation, merged to become China State Shipbuilding Corporation Limited in November 2019, although they are listed separately here.

All nine of the PRC defense companies listed in the above table are subject to a U.S. investment ban, per a November 12, 2020, executive order that prohibits U.S. investment in a list of "Chinese Communist military companies." As of January 14, 2021, this list included 44 companies that operate "directly or indirectly in the United States."³¹⁵

³¹³ CRS In Focus IF11684, *China's 14th Five-Year Plan: A First Look*, by Karen M. Sutter and Michael D. Sutherland; Michael Raska and Richard A. Bitzinger, "Strategic Contours of China's Arms Transfers," *Strategic Studies Quarterly*, Spring 2020, pp. 93-96.

³¹⁴ Testimony of Director of National Intelligence Daniel R. Coats, "Worldwide Threat Assessment of the U.S. Intelligence Community" before U.S. Congress, Senate Select Committee on Intelligence, January 29, 2019, p. 5.

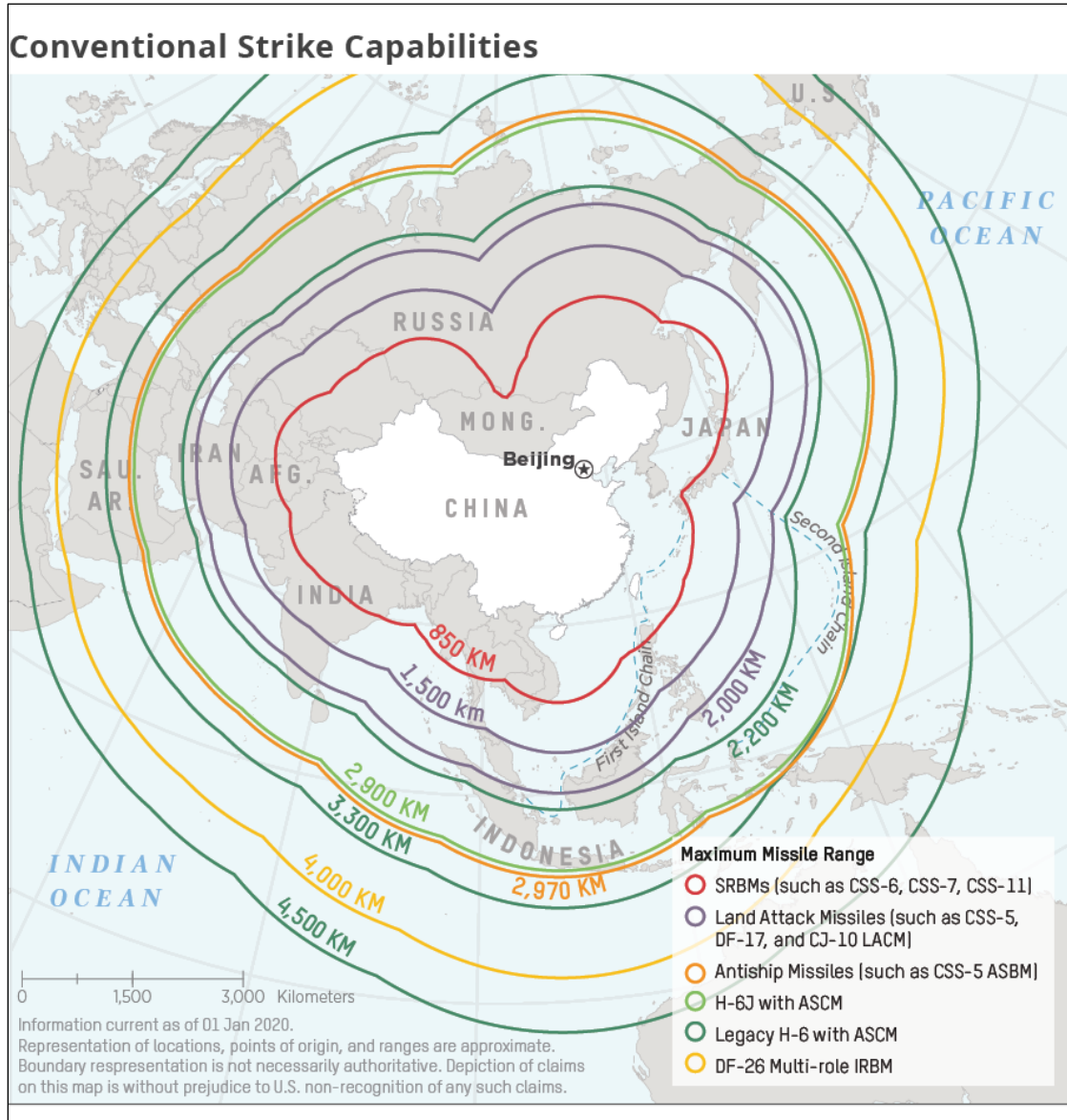
³¹⁵ U.S. Department of Defense, "DOD Releases List of Additional Companies, in Accordance with Section 1237 of FY99 NDAA," January 14, 2021, at <https://www.defense.gov/Newsroom/Releases/Release/Article/2472464/dod-releases-list-of-additional-companies-in-accordance-with-section-1237-of-fy/>. See also CRS In Focus IF11627, *U.S. Export Control Reforms and China: Issues for Congress*, by Ian F. Fergusson and Karen M. Sutter.

Appendix. Visual Representations of the Range of China's Missile Forces

DOD featured the following maps in its *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*.

Figure A-I. Maximum Missile Ranges of PRC Conventional Missiles

According to the U.S. Department of Defense

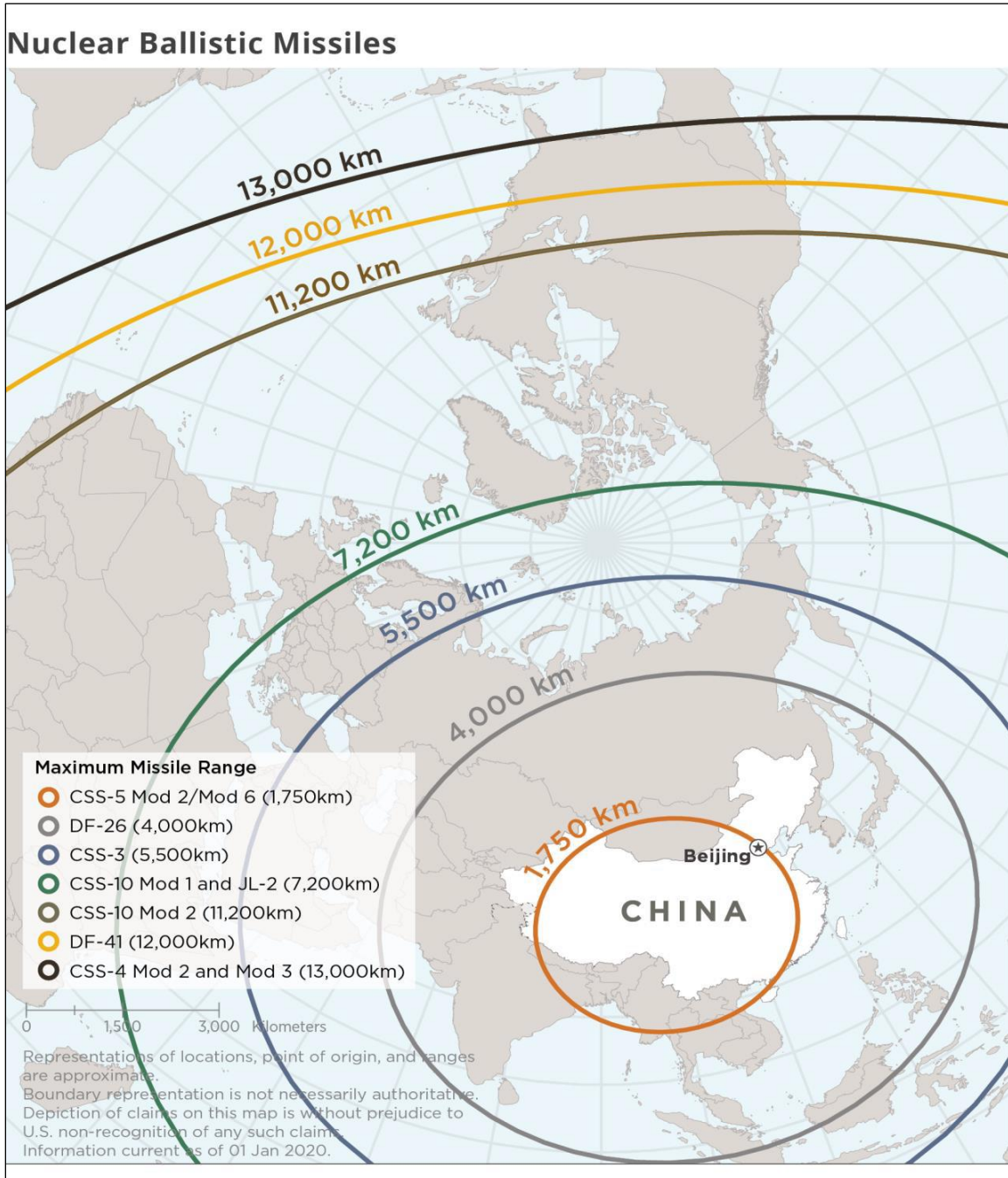


Source: U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 57.

Notes: Source graphic notes: "Information current as of 01 Jan 2020. Representation of locations, points of origin, and ranges are approximate. Boundary representation is not necessarily authoritative. Depiction of claims on this map is without prejudice to U.S. non-recognition of any such claims."

Figure A-2. Maximum Missile Ranges of PRC Nuclear Ballistic Missiles

According to the U.S. Department of Defense



Source: U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, p. 58.

Notes: Source graphic notes: "Representations of locations, point of origin, and ranges are approximate. Boundary representation is not necessarily authoritative. Depiction of claims on this map is without prejudice to U.S. non-recognition of any such claims. Information current as of 01 Jan 2020."

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