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Military and Security Developments Involving the People's Republic of China

A Report to Congress

Pursuant to the National Defense Authorization Act for

Fiscal Year 2000

Section 1202 of the National Defense Authorization Act for Fiscal Year 2000, Public Law 106-65, as amended, provides that the Secretary of Defense shall submit a report "in both classified and unclassified form, on military and security developments involving the People's Republic of China. The report shall address the current and probable future course of military-technological development of the People's Liberation Army and the tenets and probable development of Chinese security strategy and military strategy, and of the military organizations and operational concepts supporting such development over the next 20 years. The report shall also address United States-China engagement and cooperation on security matters during the period covered by the report, including through United States-China military-to-military contacts, and the United States strategy for such engagement and cooperation in the future."

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PREFACE

The *2022 National Security Strategy* identifies the People's Republic of China (PRC) as the only competitor with the intent and, increasingly, the capacity to reshape the international order. The Department of Defense (DoD) annual report on military and security developments involving the PRC charts the current course of the PRC's national, economic, and military strategy and offers Congress insight on the tenets of Beijing's ambitions and intentions. The PRC's strategy entails a determined effort to amass and harness all elements of its national power to place the PRC in a "leading position" in an enduring competition between systems. As expressed in the *2022 National Defense Strategy*, the PRC presents the most consequential and systemic challenge to U.S. national security and the free and open international system.

In this decisive decade, it is important to understand the contours of the People's Liberation Army's (PLA) way of war, survey its current activities and capabilities, and assess its future military modernization goals. In 2021, the PRC increasingly turned to the PLA as an instrument of statecraft as it adopted more coercive and aggressive actions in the Indo-Pacific region. Having purportedly achieved its 2020 modernization goal, the PLA now sets its sights to 2027 with a goal to accelerate the integrated development of mechanization, informatization, and intelligentization of the PRC's armed forces. If realized, this 2027 objective could give the PLA capabilities to be a more credible military tool for the Chinese Communist Party (CCP) to wield as it pursues Taiwan unification.

In addition to the development of the PLA's conventional capabilities, the PRC has continued to accelerate the modernization, diversification, and expansion of its nuclear forces. The PRC has stated its ambition to strengthen its "strategic deterrent," while being reluctant to discuss the PLA's developing nuclear, space, and cyberspace capabilities, negatively impacting global strategic stability—an area of increasing global concern.

As the PRC seeks to achieve "national rejuvenation" by its centenary in 2049, this report highlights Beijing's ambition to reform the prevailing international rules-based system. This objective requires an external environment supportive of the PRC's strategic goals defined under the concept of a "community of common destiny," led by Xi Jinping's initiatives such as the Global Security Initiative and the Global Development Initiative.

This report illustrates how the CCP increasingly turns to the PLA in support of its global ambitions, and the importance of meeting the pacing challenge presented by the PRC's increasingly capable military.

Report Scope: This report covers security and military developments involving the PRC until the end of 2021.

EXECUTIVE SUMMARY

UNDERSTANDING CHINA'S STRATEGY

China's National Strategy

- The PRC's national strategy aims to achieve "the great rejuvenation of the Chinese nation" by 2049. The strategy is a determined pursuit of political, social, and military modernity to expand the PRC's national power, perfect its governance, and revise the international order in support of Beijing's system of governance and national interests. The PRC increasingly views the United States as deploying a whole-of-government effort meant to contain the PRC's rise, which presents obstacles to its national strategy.

- The PRC has characterized its view of strategic competition in terms of a rivalry among powerful nation states, as well as a clash of opposing ideological systems. PRC leaders believe that structural changes in the international system and an increasingly confrontational United States are the root causes of intensifying strategic competition between the PRC and the United States.

- The PRC's strategy entails deliberate and determined efforts to amass, improve, and harness the internal and external elements of national power that will place the PRC in a "leading position" in an enduring competition between systems.

- The PRC's 20th National Congress of the CCP holds important military and security implications for the PLA's 2027 centenary objectives. The 20th Party Congress report focused on intensifying and accelerating the PLA's modernization goals over the next five years, including strengthening its "system of strategic deterrence." Xi Jinping retained his chairmanship of the seven-person Central Military Commission (CMC) and selected members that offer political continuity, technical expertise on military modernization and space issues, and Taiwan-focused operational experience.

Foreign Policy

- The PRC's foreign policy seeks to build a "community of common destiny" that supports its strategy to realize "the great rejuvenation of the Chinese nation." Beijing's revisionist ambition for the international order derives from the objectives of its national strategy and the CCP's political and governing systems.

- In 2021, the PRC employed multiple diplomatic tools in an attempt to erode U.S. and partner influence, such as highlighting the U.S. withdrawal from Afghanistan and criticizing U.S.-backed security partnerships including the Quad (Australia, India, Japan, and the United States) and Australia-United Kingdom-United States partnership (AUKUS).

- The COVID-19 pandemic also continued to be a driving force behind the PRC's foreign policy efforts in 2021, as Beijing sought to deflect blame for its initial response to the pandemic and continued its use of foreign medical assistance, including vaccine donations, to bolster its bilateral ties and advance its responsible great power narrative.

Economic Policy

- The PRC's military modernization objectives are commensurate with and part of China's broader national development aspirations. The CCP's economic, political, social, and security development efforts are mutually reinforcing and support Beijing's strategy of national rejuvenation.

- Beijing's "dual circulation (双循环)" policy aims to forge domestic resilience by reducing China's reliance on foreign supply chains that have proven to be economic chokepoints. In addition, the policy aims to boost domestic production and consumption to fuel growth and decrease the economy's reliance on exports moving forward.

- China's economic development supports its military modernization by providing the means for larger defense budgets. Additionally, the PRC's growing national industrial and technological base, as well as deliberate Party-led initiatives such as the Belt and Road Initiative (BRI) and Made in China 2025, offers systemic military benefits to the PRC.

China's Belt and Road Initiative

- The PRC uses BRI to support its strategy of national rejuvenation by seeking to expand global transportation and trade linkages to support its development and deepen its economic integration with nations along its periphery and beyond.

- In 2021, the PRC significantly increased engagement with African, Latin American, and Middle Eastern countries and began prioritizing public health, digital infrastructure, and green energy opportunities.

- Overseas development and security interests under BRI will drive the PRC towards expanding its overseas security footprint to protect those interests.

Military-Civil Fusion Development Strategy

- The PRC pursues its Military-Civil Fusion (MCF; 军民融合) development strategy to "fuse" its security and development strategies to build an integrated National Strategic System and Capabilities in support of the PRC's national rejuvenation goals.

- Beijing's MCF development strategy includes objectives to develop and acquire advanced dual-use technology for military purposes and to deepen reform of the national defense science and technology industries, and serves a broader purpose to strengthen all of the PRC's instruments of national power.

- The PRC's MCF development strategy encompasses six interrelated efforts: (1) fusing China's defense industrial base and its civilian technology and industrial base; (2) integrating and leveraging science and technology innovations across military and civilian sectors; (3) cultivating talent and blending military and civilian expertise and knowledge; (4) building military requirements into civilian infrastructure and leveraging civilian construction for military purposes; (5) leveraging civilian service and logistics capabilities for military purposes; and (6) expanding and deepening China's national defense mobilization system to include all relevant aspects of its society and economy for use in competition and war.

Defense Policy and Military Strategy

- In 2021, the PRC's stated defense policy aims remained oriented toward safeguarding its sovereignty, security, and development interests, while emphasizing a greater global role for itself. The PRC's military strategy remains based on the concept of "active defense (积极防御)."

- PRC leaders stress the imperative of strengthening the PLA into a "world-class" military by the end of 2049 as an essential element of its strategy to rejuvenate the PRC into a "great modern socialist country."

- In 2020, the PLA added a new milestone for modernization in 2027, to accelerate the integrated development of mechanization, informatization, and intelligentization of the PRC's armed forces, which if realized could give the PLA capabilities to be a more credible military tool for the CCP to wield as it pursues Taiwan unification.

- In 2021, the PLA began discussing a new "core operational concept," called "Multi-Domain Precision Warfare (MDPW; 多域精确战)."MDPW is intended to leverage a C4ISR network, which the PLA calls the "network information system-of-systems that incorporates advances in big data and artificial intelligence to rapidly identify key

vulnerabilities in the U.S. operational system and then combine joint forces across domains to launch precision strikes against those vulnerabilities.

China's Forces, Capabilities, and Power Projection

- The PLA seeks to modernize its capabilities and improve its proficiencies across all warfare domains so that, as a joint force, it can conduct the full range of land, air, and maritime, as well as nuclear, space, counterspace, electronic warfare (EW), and cyberspace operations.

- The PLA's evolving capabilities and concepts continue to strengthen the PRC's ability to "fight and win wars" against a "strong enemy (强敌)" (a euphemism likely for the United States), counter an intervention by a third party in a conflict along the PRC's periphery, and project power globally.

- In 2021, the PLA continued to make progress implementing major structural reforms, fielding modern indigenous systems, building readiness, and strengthening its competency to conduct joint operations.

- **People's Liberation Army Army (PLAA).** The PLAA has approximately 975,000 active-duty personnel in combat units and is the primary ground fighting force in the PLA. In 2021, the PLAA emphasized realistic training scenarios and standardization of training methods during the exercise STRIDE-2021 and throughout extensive joint amphibious training that utilized both People's Liberation Army Navy (PLAN) and civilian roll-on-roll-off (RORO) vessels. PLAA and Russian Army units participated in ZAPAD/INTERACTION-2021, a large-scale joint exercise to expand cooperation between the two militaries, which was conducted on PRC soil for the first time.

- **People's Liberation Army Navy (PLAN).** The PLAN is numerically the largest navy in the world with an overall battle force of approximately 340 ships and submarines, including approximately 125 major surface combatants. As of 2021, the PLAN is largely composed of modern multi-mission ships and submarines. In 2021, the PLAN's overall battle force shrank due to the transfer of 22 early flight JIANGDAO class corvettes to the China Coast Guard (CCG). The PLAN commissioned its fourth RENHAI class cruiser in late 2021 and resumed series construction of the JIANGKAI II class frigate. The PLAN commissioned two YUSHEN class amphibious assault ships, one each in April 2021 and April 2022. The PLAN launched a third hull in the YUSHEN class in January 2021, which is currently undergoing sea trials prior to commissioning.

- **People's Liberation Army Air Force (PLAAF) and PLAN Aviation.** The PLAAF and PLAN Aviation together constitute the largest aviation force in the region and the third largest in the world, with over 2,800 total aircraft (not including trainer variants

or uncrewed aerial systems (UAS)) of which approximately 2,250 are combat aircraft (including fighters, strategic bombers, tactical bombers, multi-mission tactical, and attack aircraft). The PLAAF is rapidly catching up to Western air forces and continues to modernize with the delivery of domestically built aircraft and a wide range of UAVs. In October 2019, the PLAAF publicly revealed the H-6N as its first nuclear-capable air-to-air refuelable bomber, signaling the airborne leg of its nuclear triad.

- **People's Liberation Army Rocket Force (PLARF).** The PLARF organizes, mans, trains, and equips the PRC's strategic land-based nuclear and conventional missile forces, associated support forces, and missile bases. The PLARF is advancing its long-term modernization plans to enhance its strategic deterrence capabilities. In 2021, the PLARF launched approximately 135 ballistic missiles for testing and training. This was more than the rest of the world combined, excluding ballistic missile employment in conflict zones. In 2021, the PRC continued building three solid-fueled intercontinental ballistic missile (ICBM) silo fields, which will cumulatively contain at least 300 new ICBM silos.

- **Strategic Support Force (SSF).** The SSF is a theater command-level organization established to centralize the PLA's strategic space, cyberspace, electronic, information, communications, and psychological warfare missions and capabilities. The SSF's Network Systems Department is responsible for information warfare with an integrated mission set that includes cyberspace warfare, technical reconnaissance, electronic warfare, and psychological warfare.

  - The PLA views space superiority, the ability to control the space-enabled information sphere and to deny adversaries their own space-based information gathering and communication capabilities, as critical components in conducting modern "informatized warfare."

  - The PLA continues to invest in improving its capabilities in space-based intelligence, surveillance, and reconnaissance (ISR), satellite communication, satellite navigation, and meteorology, as well as human spaceflight and robotic space exploration.

- **Joint Logistic Support Force (JLSF).** The JLSF provides integrated joint logistics support for the PLA. The JLSF is concentrating its efforts on improving joint strategic and campaign-level logistic efficiencies through training and on integrating civilian products and services. The JLSF also had an active role in coordinating with civilian entities to provide logistic support in response to the ongoing COVID-19 pandemic.

Joint Capabilities in Development

- The PLA is aggressively developing capabilities to provide options for the PRC to dissuade, deter, or, if ordered, defeat third-party intervention in the Indo-Pacific region.

- The PLA is also developing the capabilities to conduct military operations deeper into the Indo-Pacific region, and in some cases, globally.

- Although the PLA has undertaken important structural reforms to promote joint operations, its capability to carry out joint operations in support of counter-intervention or joint campaigns outside the First Island Chain remains in its infancy.

Capabilities for Counter-intervention and Power Projection

- The PRC's counter-intervention strategy aims to restrict the United States from having a presence in China's immediate periphery and limit U.S. access in the broader Indo-Pacific region. The PLA's anti-access/area-denial (A2/AD) capabilities are, to date, the most robust within the First Island Chain, although the PLA is increasingly able to project power into the Philippine Sea and the PRC seeks to strengthen its capabilities to reach farther into the Pacific Ocean.

  - **Long-Range Precision Strike and Supporting ISR.** PLA doctrinal writings state that precision attack in all warfare domains is critical in modern war. PLA writings state that precision weapons are not only force multipliers, but also a means of "war control" to prevent escalation.

  - **Integrated Air Defense System (IADS).** The PRC has a robust and redundant IADS architecture over land areas and within 300 nautical miles (mm) (556 kilometers (km)) of its coast that relies on an extensive early warning radar network, fighter aircraft, and a variety of Surface-to-Air Missile (SAM) systems. The PRC has also placed radars and air defense weapons on outposts in the South China Sea, further extending the range of its IADS. It also employs point defenses, primarily to defend strategic targets against adversary long-range cruise missiles and airborne strike platforms.

  - **Hypersonic Weapons.** China's deployment of the DF-17 hypersonic glide vehicle (HGV)-armed Medium-Range Ballistic Missile (MRBM) will continue to transform the PLA's missile force. The system, fielded in 2020, is possibly intended to replace some older Short-Range Ballistic Missile (SRBM) units, according to PRC media, and is designed to strike foreign military bases and fleets in the Western Pacific, according to a PRC-based military expert.

Advancing Toward an Informatized Military

- The PLA considers information operations (IO) as a means of achieving information dominance early in a conflict and continues to expand the scope and frequency of IO in military exercises.
- The PRC presents a significant, persistent threat of cyber-enabled espionage and attack on an adversary's military and critical infrastructure systems.
- The PLA is pursuing next-generation combat capabilities based on its vision of future conflict, which it calls "intelligentized warfare," defined by the expanded use of artificial intelligence (AI) and other advanced technologies at every level of warfare.

Space and Counterspace Capabilities

- The PLA continues to acquire and develop a range of counterspace capabilities and related technologies, including kinetic-kill missiles, ground-based lasers, and orbiting space robots, as well as expanding space surveillance capabilities, which can monitor objects in space within their field of view and enable counterspace actions.
- The PLA views space operations as a means to deter and counter third-party intervention during a regional military conflict. Moreover, PRC defense academics suggest that reconnaissance, communication, navigation, and early warning satellites could be among the target of attacks designed to "blind and deafen the enemy."

Nuclear Capabilities

- Over the next decade, the PRC aims to modernize, diversify, and expand its nuclear forces. Compared to the PLA's nuclear modernization efforts a decade ago, current efforts exceed previous modernization attempts in both scale and complexity.
- The PRC is investing in and expanding the number of its land-, sea-, and air-based nuclear delivery platforms and constructing the infrastructure necessary to support this major expansion of its nuclear forces. The PRC is also supporting this expansion by increasing its capacity to produce and separate plutonium by constructing fast breeder reactors and reprocessing facilities.
- In 2021, Beijing probably accelerated its nuclear expansion. The Department of Defense estimates that the PRC's operational nuclear warheads stockpile has surpassed 400.
- The PLA plans to "basically complete modernization" of its national defense and armed forces by 2035. If China continues the pace of its nuclear expansion, it will likely field a stockpile of about 1500 warheads by its 2035 timeline.

Chemical and Biological Research

- The PRC's chemical and biotechnology infrastructures are sufficient to research, develop, and produce some chemical and biological agents or toxins on a large scale.
- China probably has the technical expertise to weaponize chemical and biological warfare (CBW) agents, and its robust armaments industry and numerous conventional weapon systems, including missiles, rockets, and artillery, probably could be adapted to deliver CBW agents.
- The PRC continues to engage in biological activities with dual-use applications, which raise concerns regarding its compliance with the Biological Weapons Convention. Such PRC biological activities include studies at PRC military medical institutions on potent toxins with dual-use applications.
- The United States cannot certify that the PRC has met its obligations under the Chemical Weapons Convention due to concerns regarding the PRC's research on pharmaceutical-based agents and toxins with potential dual-use applications.

OPERATIONAL STRUCTURE AND ACTIVITIES ON CHINA'S PERIPHERY

- The PRC continues to refine military reforms associated with the establishment of the Eastern, Southern, Western, Northern, and Central Theater Commands, which are organized based on the Beijing's perception of peripheral threats.
- Under the direction of the Central Military Commission (CMC), each Theater Command has operational authority over the PLA conventional forces within the theater.

Developments in the Security Situation in the Taiwan Strait

- The PRC intensified diplomatic, economic, political, and military pressure against Taiwan in 2021.
- Throughout 2021, the PLA increased provocative and destabilizing actions in and around the Taiwan Strait, to include increased flights into Taiwan's self-declared Air Defense Identification Zone (ADIZ) and conducting island seizure exercises.
- Although the PRC publicly advocates for peaceful unification with Taiwan, the PRC has never renounced the use of military force. The circumstances under which the PRC has historically indicated it would consider using force remain ambiguous and have evolved over time.
- The PRC could conduct a range of options for military campaigns against Taiwan, with varying degrees of feasibility and associated risks. These options may range from

an air and/or maritime blockade to a full-scale amphibious invasion to seize and occupy some of its offshore islands or all of Taiwan.

THE PLA'S GROWING GLOBAL PRESENCE

- CCP leaders view the PLA's growing global presence as an essential part of the PRC's international activities to create an external environment conducive to China's national rejuvenation.

- The CCP has tasked the PLA to develop the capability to project power outside the PRC's borders and immediate periphery to secure Beijing's growing overseas interests and advance its foreign policy goals.

The PLA's Evolving Missions & Tasks

- The PLAN's evolving focus from "near seas defense" to "far seas protection" reflects the PLAN's interest in a wider operational reach.

- The PLAAF's missions and tasks have similarly evolved towards conducting operations beyond China and its immediate periphery and supporting the PRC's interests by becoming a "strategic" air force.

- The PLA has embraced its concept of non-war military activities (NWMA) as an effective way to support and safeguard the PRC's development, expand the PRC's global interests, and gain valuable operational experience.

PRC Influence Operations

- The PLA views controlling the information spectrum in the modern battlespace as a critical enabler and means of achieving information dominance early in a conflict.

- The PRC conducts influence operations that target media organizations, business, academic, cultural institutions, and policy communities of the United States, other countries, and international organizations to shape public discourse and achieve outcomes favorable to its strategic and military objectives.

- PRC influence operations are coordinated at the high level and executed by a range of actors, such as the PLA Political Work Department, United Front Work Department (UFWD), International Liaison Department, the Ministry of State Security (MSS), and the PLA Strategic Support Force (SSF).

- The CCP seeks to condition international institutions and public opinion to accept the PRC's narrative surrounding its priorities such as Beijing's "one China principle" on Taiwan unification, the Belt and Road Initiative, political control over Hong Kong, and territorial and maritime claims in the South China Sea and East China Sea.

PLA Overseas Basing and Access

- The PRC is seeking to expand its overseas logistics and basing infrastructure to allow the PLA to project and sustain military power at greater distances.
- A global PLA military logistics network could disrupt U.S. military operations as the PRC's global military objectives evolve.
- Beyond the PLA support base in Djibouti, the PRC is likely already considering and planning for additional military logistics facilities to support naval, air, and ground forces projection.
- The PRC has likely considered Cambodia, Myanmar, Thailand, Singapore, Indonesia, Pakistan, Sri Lanka, United Arab Emirates, Kenya, Equatorial Guinea, Seychelles, Tanzania, Angola, and Tajikistan, among other places, as locations for PLA military logistics facilities.

RESOURCES AND TECHNOLOGY FOR FORCE MODERNIZATION

- The PRC's long-term goal is to create an entirely self-reliant defense-industrial sector—fused with a strong civilian industrial and technology sector—that can meet the PLA's needs for modern military capabilities.
- The PRC has mobilized vast resources in support of its defense modernization, including through its Military-Civil Fusion (MCF) Development Strategy, as well as espionage activities to acquire sensitive, dual-use, and military-grade equipment. The PRC has substantially reorganized its defense-industrial sector to improve weapon system research, development, acquisition, testing, evaluation, and production.
- In 2021, the PRC announced its annual military budget would increase by 6.8 percent, continuing more than 20 years of annual defense spending increases and sustaining its position as the second-largest military spender in the world. As the PRC's published military budget omits several major categories of expenditures, its actual military-related spending is likely significantly higher than what it states in its official budget.

Developments in the PRC Defense Industry

- Most of China's missile systems, including its ballistic and cruise missile systems, are comparable in quality to systems of other international top-tier producers. China conducted a test of a new hypersonic weapon system in 2021, building on previous progress in hypersonic weapon development.

- China's decades-long efforts to improve domestic aircraft engine production are starting to produce results with the J-10 and J-20 fighters switching to domestically produced WS-10 engines by the end of 2021. China's first domestically produced high-bypass turbofan, the WS-20, has also entered flight-testing on the Y-20 heavy transport and probably will replace imported Russian engines by the end of 2022.

- As the top ship-producing nation in the world by tonnage, the PRC is increasing its shipbuilding capacity and capability for all naval classes: submarines, warships, and auxiliary and amphibious ships. China also has developed underwater systems, publicly revealing a long-range system in 2019.

Espionage Activities Supporting China's Military Modernization

- The PRC presents a sophisticated, persistent threat of cyber-enabled espionage and attack to military and critical infrastructure systems through its efforts to develop, acquire, or gain access to information and advanced technologies.

- Sensitive, dual-use, or military-grade equipment that the PRC have attempted to acquire include radiation hardened integrated circuits, monolithic microwave integrated circuits, accelerometers, gyroscopes, naval and marine technologies, syntactic foam trade secrets, space communications, military communication jamming equipment, dynamic random access memory, aviation technologies, and anti-submarine warfare (ASW) capabilities.

- The PRC seeks to create destructive effects to shape decision-making and disrupt military operations at the initial stages and throughout a conflict. The PRC believes these capabilities are even more effective against militarily superior adversaries that depend on information technologies.

  - **The PLA and China's Talent Recruitment Programs.** The CCP operates more than 200 talent-recruitment programs that are overseen by central bodies, including the Central Coordination Group on Talent Work and the Overseas High-level Talent Recruitment Work Group. Although the PRC government administers China's talent recruitment programs, the PLA uses China's network of recruitment programs, such as the Thousand Talents Plan, to recruit overseas talent for military purposes.

U.S.-PRC DEFENSE CONTACTS AND EXCHANGES

- DoD's defense contacts and exchanges with the PRC in 2021 emphasized responsibly managing competition and establishing commonsense guardrails to ensure competition does not veer into conflict.

- 2021 defense contacts and exchanges with the PRC prioritized open channels of communication and the advancement of DoD priorities on managing crisis communications and strategic risk management.

CHAPTER ONE: UNDERSTANDING CHINA'S STRATEGY

Understanding the tenets of the People's Republic of China's (PRC's) national strategy is essential to understanding the drivers of China's security and military strategy. This in turn offers insights on the current and future course of the People's Liberation Army's (PLA's) reform and modernization in terms of its strength, technological advances, organization, and operational concepts—all of which could offer PRC leaders expanded military options to support its national goals.

CHINA'S NATIONAL STRATEGY

Key Takeaways

- The PRC's national strategy aims to achieve "the great rejuvenation of the Chinese nation" by 2049. The strategy is a determined pursuit of political, social, and military modernity to expand the PRC's national power, perfect its governance, and revise the international order in support of Beijing's system of governance and national interests. The PRC increasingly views the United States as deploying a whole-of-government effort meant to contain the PRC's rise, which presents obstacles to its national strategy.

- The PRC has characterized its view of strategic competition in terms of a rivalry among powerful nation states, as well as a clash of opposing ideological systems. PRC leaders believe that structural changes in the international system and an increasingly confrontational United States are the root causes of intensifying strategic competition between PRC and the United States.

- The PRC's strategy entails deliberate and determined efforts to amass, improve, and harness the internal and external elements of national power that will place the PRC in a "leading position" in an enduring competition between systems.

The PRC's strategy aims to realize "the great rejuvenation of the Chinese nation." This objective, which General Secretary Xi Jinping (also referred to as Chairman of the Central Military Commission or President of the PRC, given the context of his responsibilities) calls "the Chinese Dream," a national aspiration to elevate the PRC to a position of strength, prosperity, and leadership on the world stage.

PRC leaders characterize their strategy to achieve political, social, and economic modernity—as defined by the Chinese Communist Party (CCP)—as a grand national endeavor that is

sweeping in scope and far-reaching in how it will transform the PRC and, in turn, the world. The Party defines national rejuvenation as a state in which the PRC is "prosperous, strong, democratic, culturally advanced, harmonious, and beautiful." Beijing's strategy entails deliberate and determined efforts to amass, improve, and harness the internal and external elements of national power that will place the PRC in a "leading position." CCP leaders frequently refer to building the PRC's "comprehensive" national power in this manner. The PRC's strategy entails a long-term planning process to attain national rejuvenation that sets objectives, priorities, and milestones across virtually every aspect of governance and policy including economics, political affairs, the rule of law, public order, national security, diplomacy, and defense as well as social affairs, education, science and technology, culture, the environment, and other matters.

The PRC pursues its efforts to generate greater national power from the basis of defending and advancing its sovereignty, security, and development interests. Consequently, Beijing's national ambitions and statecraft rest on the foundation of the CCP-dominated political ideology of enhancing the path, theory, system, and culture of "Socialism with Chinese Characteristics." The objective of this Party-led strategy is perhaps best stated in what the Party calls its "basic line," a single sentence in the CCP's constitution that serves as the mission of the Party and as the cornerstone for its policymaking. Last amended at the 19th Party Congress in 2017, it states:

> *"The basic line of the Communist Party of China in the primary stage of socialism is to lead all the people of China together in a self-reliant and pioneering effort, making economic development the central task, upholding the Four Cardinal Principles, and remaining committed to reform and opening up, so as to see China becomes a great modern socialist country that is prosperous, strong, democratic, culturally advanced, harmonious, and beautiful."*

The 19th Party Congress also adopted "Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era" into the CCP's constitution. Unanimously agreed by Party delegates, "Xi Jinping Thought" was hailed as a "guide to action for the entire Party and all the Chinese people to strive for the great rejuvenation of the Chinese nation," designating General Secretary Xi Jinping as the core of the Party with outsized influence driving party objectives to come.

External Conditions. Among the external elements of the PRC's national strategy are its deliberate efforts to create a "favorable" international environment that is conducive to the PRC's rise and national rejuvenation, according to State Councilor Yang Jiechi, a member of the Politburo and a leading Party official on foreign policy. During the 6th Plenary session of the 19th Central Committee, the CCP reported its perceived success in managing its foreign affairs and national security challenges having "broken new ground" in diplomatic endeavors amidst "profound global changes and turned crises into opportunities amid complex situations on the international stage." With regard to national security, the CCP reported to have

"enhanced" the PRC's security on all fronts and "withstood political, economic, ideological, and natural risks, challenges, and trials." However, in 2021 and into 2022, PRC leadership contended with the on-going effects of the COVID-19 pandemic that brought challenges for the PRC's diplomatic, cultural, and economic influence abroad. PRC leadership also took diplomatic measures to manage increased global concern regarding PRC rhetorical and diplomatic alignment with Russia before, following, and during the invasion of Ukraine, as well as concern for the PRC's growing assertive and coercive economic and military actions. PRC leaders continue to believe that global trends, especially perceived U.S. decline, are generally conducive to their long-term interests.

As PRC leadership view a divided China as a weak China, they argue that "full reunification"—including the resolution of the "Taiwan question" and completing Hong Kong's and Macau's integration by the end of 2049—is one of the fundamental conditions of national rejuvenation. Beijing views as an imperative that China field a "world-class" military that can "fight and win" and "resolutely safeguard" the country's sovereignty, security, and development interests. In support of this goal, on December 26th, 2020 the National People's Congress (NPC) passed revisions to the PRC's National Defense Law, which broadened the legal justification for PLA mobilization to include defense of China's "development interests." The codification of this language in PRC law is intended to add legitimacy to the use of military force to safeguard the PRC's overseas interests.

China's leaders claim national rejuvenation requires the PRC to "take an active part in leading the reform of the global governance system" as many rules and norms were established, in Beijing's view, during a time of PRC weakness and without the PRC's consultation and input. The Party views aspects of the prevailing international rules-based system as constraining the PRC's strategic ambitions and incompatible with its sovereignty, security, political preferences, and development interests. To the PRC's leaders, revisions are necessary to accommodate the PRC's development and should reflect the CCP's preferred transformation in the distribution of power to forge an external environment more favorable to the PRC's political governance system and national interests.

Key Objectives & Milestones. For decades, the PRC's leaders have framed their pursuit of modernity and power as advancing China along a specific trajectory, with the PRC's centenary in 2049 serving as the target for achieving national rejuvenation and becoming a "great modern socialist country." From Beijing's perspective, the PRC is a developing nation that must transition into a "fully developed and highly advanced" socialist society, and this trajectory involves the Party leadership shepherding the PRC through different stages of gradual but systematic modernization and development. The Party demarcates the stages of the PRC's strategy with milestones accompanied by objectives and priorities determined by the Party's long-term planning processes.

Reflecting on the PRC's progress at the 19th Party Congress in 2017, General Secretary Xi Jinping declared that China had assumed "…a leading position in terms of economic and

technological strength, defense capabilities, and comprehensive national strength" and therefore "crossed the threshold into a new era." Xi's declaration that the PRC had entered a "New Era" was not a change in strategic objectives, but an important signal of confidence that the PRC's progress was sufficient to tackle the next set of challenges in its development. For the PRC's strategy in the "New Era," Xi laid out a broad plan to achieve national rejuvenation with a timeline linked to two symbolically important centenary milestones reached in 2021 (the CCP's centenary) and 2049 (the PRC's centenary). To bridge the lengthy gap between the two anniversaries, Xi added interim national objectives for 2035 and laid out a broad two-stage modernization plan to reach 2049. Further demonstrating the Party's confidence in the PRC's progress, Xi's objectives for 2035 moved up certain mid-century targets set by the Party going back to 1987.

At his centenary speech marking the 100th anniversary of the CCP on July 1st 2021, Xi declared that China had "realized the first centenary goal of building a moderately prosperous society in all respects." Beyond 2021, the PRC will use the "moderately prosperous society" as the basis for Xi's "two-stage" plan to achieve national rejuvenation by the PRC's centenary in 2049. In the first stage from 2021 to 2035, the Party aims for the PRC to "basically" meet its initial thresholds for becoming a "great modern socialist country." In this stage, the PRC will likely continue to prioritize economic development as "the central task," but rather than rapid economic growth, it will seek to address its uneven economic development and inequalities that Beijing recognized as the new "principal contradiction" in PRC society in the "New Era." By 2035, the PRC will also seek to increase its economic and technological strength to become a "global leader in innovation" and aim to "basically" complete its military modernization. The PRC will also seek to significantly strengthen its cultural "soft power" and improve its domestic rule of law and governance systems.

In the second stage from 2035 to 2049, the PRC aims to complete its development and attain national rejuvenation, realizing an international status that Xi describes as a "global leader in terms of comprehensive national strength and international influence." A renewed PRC will have attained—among the Party's many goals—its objectives to field a "world-class" military and assume a leading position within an international order revised in line with Beijing's overall foreign policy goal to establish what it refers to as a "community of common destiny (人类命运共同体)," or the PRC's preferred official English translation, "community with a shared future for mankind."

Military and Security Implications of the 20th National Congress of the CCP

General Secretary Xi Jinping presided over the 20th National Congress of the Chinese Communist Party, known as the 20th Party Congress, from October 16 to 22, 2022. Party Congresses, convened every five years, hold important military and security implications for the PRC's national and defense strategy. The military dimensions of the Report to 20th Party Congress focused on intensifying and accelerating the People's Liberation Army's modernization goals, to include deploying PLA forces on a "regular basis and in diversified ways." In order to achieve the PLA's 2027 centenary goal, the 20th Party Congress set objectives to "provide new military strategic guidance, establish a strong system of strategic deterrence, increase the proportion of new-domain forces (most likely cyberspace and space) with new combat capabilities, speed up the development of unmanned, intelligence combat capabilities, and promote the development and application of the network information system." Reappointed as Chairman of the Central Military Commission (CMC) for the third time, Xi Jinping selected a six-man CMC that offers political continuity, technical expertise on military modernization and space issues, and Taiwan-focused operational experience to lead the PLA toward achieving its centenary goals.

The 20th Party Congress also offers new insight on the CCP's changing perception of the PRC's external security environment. Notably, the Party Congress report did not reiterate previous reports' statements that the PRC was operating within a "strategic window of opportunity for development," and did not state unequivocally "peace and development remain the keynote of the times." Rather, the PRC is facing "drastic changes in the international landscape" and thus must be more mindful of "potential dangers and be prepared to deal with worse-case scenarios."

Historic Continuity. Understanding the origins of the PRC's national rejuvenation is crucial to understanding how the PRC will likely shape and pursue this strategic objective. PRC leaders have consistently framed their efforts as seeking to "restore" China to a preeminent place in the world after enduring what the Party characterizes as China's "century of humiliation" beginning in the 19th century as the Qing Dynasty began to disintegrate and lasting until the founding of the PRC in 1949. While the Party's exact articulation of this goal as "the great rejuvenation of the Chinese nation" first emerged in the late 1980s, the Party has championed the cause of rebuilding China since the 1920s. General Secretary Xi Jinping frequently points to the CCP's steadfastness to the cause of national rejuvenation and describes it as the Party's "original aspiration."

The Party's narrative of national rejuvenation speaks to the deep impressions left on the PRC's political landscape over an era defined by the disintegration of China's polity, repeated violations of China's sovereignty by foreign powers, and the prolonged absence of physical and economic security for many Chinese people. For a culture with a history stretching back thousands of years—much of it spent as one of the most powerful and advanced civilizations in the world—nationalist appeals to restore China's greatness are deeply rooted. The threads

of national renewal can be traced to China's reformers and nationalist revolutionary leaders in the late Qing Dynasty and emerged as a common nationalist theme in the fractured politics of China's Republican Era. This resonance is crucial to why the CCP portrays the PRC's rejuvenation as a nationalist project that the Party "shoulders" for the country.

The PRC's Strategy & the CCP. The Party's leaders frame "Socialism with Chinese Characteristics" and the CCP as indispensable to the PRC overcoming its historical circumstances and attaining national rejuvenation. As General Secretary Xi Jinping stated in a speech to the CCP Central Committee in 2013, "Which ideological system a country implements depends on one crucial issue: can this ideology resolve the historical problems facing the country?" From the Party's perspective, its leadership and systems are uniquely able to restore the PRC's strength, prosperity, and prestige—underscored with the implicit warning that any deviation from socialism's path would result in "chaos" and China falling behind on its "historic mission." As Xi stated, "…only socialism can save China—and only Socialism with Chinese Characteristics can develop China."

CCP leaders flatly reject the notion that the Party has abandoned its socialist ideology in recent decades with the introduction of market features into the PRC's economy or drifted towards a non-ideological form of governance. The Party asserts that the PRC remains on the path of "socialist modernization" but it seeks to advance the country gradually as a lesson painfully learned from the Mao-era catastrophes that aimed for rapid progress. Accordingly, the Party claims that to perform its decisive role in guiding the PRC's development into a "great modern socialist country," it must ensure that the country advances in line with "the Four Cardinal Principles (四项基本原则)." First stated by Deng Xiaoping and later written into the CCP Constitution, these principles mandate the Party "to keep to the path of socialism, to uphold the people's democratic dictatorship, to uphold the leadership of the CCP, and to uphold Marxism-Leninism and Mao Zedong Thought." The Four Cardinal Principles are the basis for political and governance reforms pursued by the Party and the outer boundaries of its efforts to "reform" and "open up" the country.

As General Secretary Xi Jinping told Party cadres in 2014, "promoting the modernization of the national governance system and capacity is definitely not Westernization or capitalism." In addition to cultivating ideological discipline and fighting corruption within the Party, Xi has sought to advance the PRC's strategy by strengthening the Party's primacy across China's governance systems and making the Party more effective at managing China's political, economic and social problems. Xi's emphasis on building the CCP's institutional capacity and promoting internal unity—which he views as the means for the Party to perform its strategic role—has become a prominent feature of his tenure.

Competition Between Systems. PRC leaders believe that structural changes in the international system and an increasingly confrontational United States are the root causes of intensifying strategic competition between China and the United States. The PRC's leadership has long viewed China as embroiled in a major international strategic competition with other

states. Throughout the post-Mao reform era and particularly after the end of the Cold War, the Party's leaders recognized their socialist system was—and would remain over the long-term—an underlying source of tension with the West. Given the Party's ambitions to "restore" the PRC's place in the world and their assessment of the PRC's relative weakness via-a-vis rival states, CCP leaders recognized the PRC's growing strength could threaten to flare tensions with others without careful management. Deng Xiaoping's reputed approach to this dilemma, as attributed by other Party leaders, was for China to "hide our capacities and bide our time, be good at maintaining a low profile; and never claim leadership." While PRC's leaders have consistently pursued national rejuvenation as their goal, they have demonstrated a degree of strategic adaptability to seize opportunities and manage threats to their overall strategic objectives.

Over time, the PRC has characterized China's view of strategic competition in terms of a rivalry among powerful nation states, most importantly the United States, as well as a clash of opposing ideological systems. The PRC's leaders have indicated they view competition as entailing aspects of cooperation and conflict, and that the Party would need to be adaptable, flexible, and above all, patient. The PRC's leaders have also offered a view of competition based on relative levels of economic, technological, and military power. Speaking to the CCP Central Committee in 2013, General Secretary Xi Jinping remarked that the Party needed to "appreciate" that "developed Western nations" would continue to possess "real, long-term advantages" over China in the economic, technological, and military domains. Xi argued that China would need to "prepare for a long period of cooperation and of conflict between these two social systems in each of these domains." Lastly, Xi alluded to the core elements of "national rejuvenation" as the PRC's approach to this competition. Xi stated, "Most importantly, we must concentrate our efforts on bettering our own affairs, continually broadening our comprehensive national power, improving the lives of our people, building a socialism that is superior to capitalism, and laying the foundation for a future where we will win the initiative and have the dominant position."

In the past two years, General Secretary Xi Jinping has presented his thoughts on the PRC's strategic environment on numerous occasions. In 2020, CCP leaders, including Xi himself, convened several meetings on "growing risks" and, in the communique following the 5th Plenum in October 2020, stressed that the PRC is on the brink of "changes unseen in a century," but also that China would benefit from a "profound adjustment in the international balance of power." In his CCP 100th anniversary speech, Xi asserted that as the world experienced "once-in-a-century changes," China had to adopt "a holistic approach to national security that balances development and security imperatives" and implement "the national rejuvenation." In his 2022 New Year's speech, Xi stated that China needed to "remain mindful of potential risks" while maintaining "strategic focus and determination."

Since just prior to the dissolution of the Soviet Union, PRC leaders have consistently characterized China's security environment as undergoing intense changes and viewed the international order as shifting toward a multipolar system more commensurate with the PRC's

development. The Party views a shift toward a multipolar system as consistent with its perception of global power trends. This shift is vital for the PRC to advance its strategy, perceiving U.S. power as a constraint that impedes many of the PRC's goals. The PRC's leaders have eagerly embraced narratives of the West's relative decline and the inevitability of China's rise as largely consistent with their strategy and evidence of China's progress.

The Party views core aspects of the current international system as incompatible with its vision for a revised order premised on its "community of common destiny." The PRC's leaders view U.S. security alliances and partnerships, especially those in the Indo-Pacific, as destabilizing and irreconcilable with the PRC's sovereignty, security, and development interests. Regionally, the PRC's 2019 defense white paper claims that "Asia-Pacific" countries are "increasingly aware that they are members" of the PRC's "community with a shared future for mankind" and that managing disputes through dialogue is its "preferred policy option."

Beijing has also expressed concerns over growing global instability and a mounting sense of insecurity that it views as instigated by the United States. The PRC's 2019 defense white paper criticized the United States as the "principal instigator" of global instability and driver of "international strategic competition." China's leadership views U.S. policy toward the PRC as a critical factor affecting the PRC's national objectives and increasingly views the United States as more willing to confront Beijing where U.S. and PRC interests are inimical.

Given the enduring suspicion among some in Beijing that the United States seeks to contain China, CCP leaders hold that the accrual of the PRC's comprehensive national power will set the conditions for the PRC's ability to confront or dissuade the United States and prevent containment. As China's leaders seek to translate the PRC's growing economic and military means into influence to advance their international aspirations, they must also carefully balance the PRC's expanding interests across their priorities and resources. For example, China's Belt and Road Initiative (BRI), originally called One Belt, One Road (OBOR), expands the PRC's overseas development and security interests; Beijing has signaled this will drive the PRC toward expanding its overseas military footprint to protect those interests. China's leaders also seem to have recognized that BRI and other initiatives have sparked concerns about the PRC's intentions, leading it to use less inflammatory and more tailored rhetoric without altering the programs' fundamental goals. Similar tensions can be found in the PRC's efforts to advance General Secretary Xi Jinping's foreign policy goals such as building a "community of common destiny;" pressing revisions to the international order; and establishing diplomatic relationships in accordance with what the PRC calls "strategic partnerships." The PRC seeks to secure and advance its overseas interests without entirely compromising the relationships and stability crucial to its continued development. This tension underscores the increasingly complex decisions and risks China's leaders must weigh in implementing their strategy.

The PRC's National Security Concept & Management

In recent years, the PRC has articulated its view of national security as a broad concept that spans the confluence of internal and external threats to the PRC's interests. Party leaders have identified national security as encompassing traditional and non-traditional domestic and foreign threats; the intersection of external influences on internal stability; and economic, cultural, societal, and environmental threats. Additionally, Beijing has taken steps to define a concept for national security; improve the CCP's ability to develop and coordinate national security policy across party, military, and state organs; and raise domestic awareness of national security concerns. These efforts seek to address longstanding concerns of China's leadership that the country's legacy system of stove-piped party-state organizations was ill equipped to meet the growing national security challenges that the PRC faces.

National Security Concept: The CCP's "Overall National Security Concept" (总体国家安全观), first proposed by General Secretary Xi Jinping in 2014, provides the framework for the PRC's national security system, the mission of the Central National Security Commission (CNSC), and the basis of the PRC's national security strategy. According to the Party, the premise of the concept is that "The people's security is the purpose of national security, political security is the root of national security, and priority in national interests is the norm of national security." China's leaders consider people's security, political security, and national interests as mutually reinforcing aspects of national security. Party outlets describe people's security as the purpose because national security fundamentally must serve the PRC people and the PRC nation. Similarly, the Party's view of political security as the foundation of national security is described in terms of the maintenance and "ruling status" of the Party and the system of "Socialism with Chinese Characteristics." This reflects the Party's certainty that its leadership and systems are indispensable to the PRC's national rejuvenation. Party leaders assess the supremacy of national interests as the criterion or standard by which the Party expects its stewardship of the PRC's national security will be judged: its ability to "resolutely safeguard" the PRC's sovereignty, security, and development interests. The PRC's concept also views development and security as mutually supporting aspects of national security in which "Security guarantees development, and development is the goal of security."

Central National Security Commission (CNSC): To improve coordination on national security matters, the CCP created the CNSC in 2013. The CNSC advises the Politburo, oversees the coordination of national security issues across the government, and manages crises. Embracing the Party's expansive concept of national security, the CNSC's purview covers internal and external national security matters. The CNSC's mission, codification in law, sprawling definition of national security, and powerful leadership has led the CNSC to become an important party-state organ—promulgating regulations in 2021 on the "National Security Work of the CCP" and outlining who, what, and how the CCP will lead national security in the PRC.

Membership. The PRC's top three leaders lead the CNSC: Xi who serves as the CNSC Chairman; Li Keqiang (Premier of the State Council); and probably Li Zhanshu (Chairman of the Standing Committee of the National People's Congress). CNSC membership may include Politburo members, senior government leaders, and senior PLA leaders (including the two Vice Chairman of the CMC). The CNSC General Office is responsible for the commission's daily work and is run by senior CCP officials serving in dual-hatted roles in other positions. The current Director of the CNSC General Office is likely Ding Xuexiang, a longtime political aide to Xi. Ding also serves as the Director of the General Office of the Central Committee and is a member of the Politburo. Since May 2018, Chen Wenqing has served as Deputy Director of the CNSC General Office. Chen is also the Minister of State Security.

National Security Strategy. By 2015, the CCP adopted the PRC's first national security strategy outline following the CNSC's establishment. Official media noted the strategy intends to unify efforts by various departments under the central leadership's guidance. Over the years, the PRC's leaders and media have indicated various national security sub-strategies that cover a variety of issues including political security, homeland security, military security, economic security, cultural security, societal security, technology security, network security, nuclear safety, ecological security, resource security, and biosecurity.

National Security Law. With the establishment of the CNSC and the Party's adoption of the national security strategy, in 2015 the NPC passed the *National Security Law*. This law encapsulated the Party's overall national security concept and swept a broad range of issues beneath a new legal framework of "national security," while strengthening the formal role of central authorities. In recent years, the NPC has also passed a series of laws intended to address more specific national security concerns including counterespionage (2014), counterterrorism (2015), cybersecurity (2016), foreign non-governmental organizations in China (2016), intelligence (2017), and cryptography (2019). While these laws address more specific national security concerns, they remain sweeping in scope and authorities.

In an effort to raise public awareness of the Party's national security concepts and emphasize national security as a civic responsibility, the 2015 *National Security Law* designated April 15 of each year as National Security Education Day. Indicating the reach and depth the Party desires its national security concepts to penetrate into the party-state, the 2015 *National Security Law* also made provincial, autonomous regions and municipalities responsible for national security work within their administrative areas. This has led to the creation of national security committees in the Party's provincial-level organizations, each headed by the province's party chief.

FOREIGN POLICY

Key Takeaways

- The PRC's foreign policy seeks to build a "community of common destiny" that supports its strategy to realize "the great rejuvenation of the Chinese nation." Beijing's revisionist ambition for the international order derives from the objectives of its national strategy and the Party's political and governing systems.

- In 2021, the PRC employed multiple diplomatic tools in an attempt to erode U.S. and partner influence such as highlighting the U.S. withdrawal from Afghanistan and criticizing U.S.-backed security partnerships including the Quad (Australia, India, Japan, and the United States) and Australia-UK-United States partnership (AUKUS).

- The COVID-19 pandemic also continued to be a driving force behind the PRC's foreign policy efforts in 2021, as Beijing sought to deflect blame for its initial response to pandemic, and continued its use of foreign medical assistance, including vaccine donations, to bolster its bilateral ties and advance its responsible great power narrative.

The PRC's diplomatic activities continued to seek a more prominent role for Beijing in international affairs. China has embraced a new diplomatic framework that it terms "Major Power Diplomacy with Chinese Characteristics," which is guided by the foreign policy direction determined by the CCP Central Committee and was set forth in General Secretary Xi Jinping's report at the 19th Party Congress. This framework seeks to advance the PRC's strategy of national rejuvenation by achieving the CCP's two centenary goals, improving the coordination of China's major domestic and international policies, reforming aspects of the international order, adhering to the CCP Central Committee's direction, and defending the PRC's major interests.

The CCP's theory of "Socialism with Chinese Characteristics" underpins the conduct of the PRC's foreign affairs. Since General Secretary Xi Jinping assumed power at the 18th Party Congress in 2012, the CCP Central Committee has placed greater emphasis on the PRC's foreign policy advancing "the cause of Socialism with Chinese Characteristics." Yang Jiechi, a top Party official for the PRC's foreign policy, has claimed that adherence to Socialism with Chinese Characteristics is "showing extremely bright prospects" and "reached a new historical starting point." Importantly, the CCP's theory shapes the particular contexts and caveats that the PRC applies to its diplomatic concepts and principles.

According to Party officials, the overall goal of the PRC's foreign policy is to build a "community of common destiny" that seeks to shift the international system towards an architecture based on the CCP's principles for how nations should interact. This goal is essential to how the PRC's foreign policy supports its broader strategy to achieve national rejuvenation. From Beijing's perspective, establishing this "community" is necessary to set the external security and economic conditions for the PRCs national rejuvenation by

"safeguarding world peace" and "promoting common development" according to the Party's principles. The PRC recognizes it cannot achieve its goals in isolation and seeks "all countries" to adopt its diplomatic framework in order to "build a community with a shared future for mankind" and "actively control the new direction of China and the world." Lastly, PRC officials acknowledge that aspects of the international order are inconsistent with its objectives. The PRC's diplomatic framework seeks to remedy this by promoting changes in a more "just and reasonable direction."

The PRC's ambition to shape the international order derives from the objectives of its national strategy and the Party's political and governing systems. The PRC does not frame its efforts as simply opportunistic challenges to the status quo or a significant deviation from the past. Rather, Beijing is acting upon its longstanding desire to redesign the architecture of the international order to support the PRC's national rejuvenation, efforts that are married with growing resources and opportunities to do so. The PRC's foreign policy seeks to revise aspects of the international order on the Party's terms and in accordance with ideas and principles it views as essential to forging an external environment supportive of the PRC's national rejuvenation and strategic goals.

As part of its effort to establish a "community of common destiny," the PRC likely seeks to present itself as a provider of "global public goods." According to PRC documents and speeches, this includes efforts to address a broad range of global challenges centered on international security, economics, global development, and the COVID-19 pandemic. Xi Jinping presents the Global Security Initiative, the Global Development Initiative, BRI, and the PRC's COVID-19 vaccine distribution to the international community as an impetus to improve collective global security challenges.

The PRC's foreign policy framework includes efforts to promote and accelerate the transformation in the distribution of power, revise the principles of interstate relations, and reform global governance structures. Within the context of "Major Power Diplomacy with Chinese Characteristics," PRC officials have described how the PRC differentiates its goals and relations according to the power relationships among four categories of actors: major powers, peripheral nations, developing nations, and international organizations. Among the major powers, Beijing contends that a new framework for relations is necessary to construct a "stable and balanced development" between the powers—in essence a multipolar system. Yang Jiechi contends that, due to the COVID-19 pandemic, major power relations are undergoing a "first round of interactive adjustment." With geographically peripheral nations, the PRC seeks to strengthen its relationships to create a more favorable environment along its maritime and land borders in accordance with Beijing's view of justice and interests. For developing countries, the PRC emphasizes solidarity and cooperation, as well as "actively" carrying out multilateral diplomatic work, to include continued "high-quality development" under its Belt and Road Initiative. PRC leaders consider developing countries the "unshakeable foundation of China's foreign policy." Its priorities in developing countries –

such as those in Africa, Latin America, and the Middle East – include cooperating in existing multilateral organizations, creating export markets for PRC technology products, positioning the PRC as a provider of "global public goods," and securing support for the PRC's attempts to reshape the international system.

Another tenet of "Major Power Diplomacy with Chinese Characteristics" is Beijing's ambition to construct "new types" of "omnidirectional" relations and bilateral partnerships among states. The PRC desires for its concepts of mutual respect, cooperation and mutual benefit to provide the basis for these "new types" of relations. Yang Jiechi describes China's "new type" relationships as strategic partnerships that follow a new path of "major power relations." Although distinct from alliance relationships, the PRC's notion of strategic partnerships is indicative of a relationship that meets Beijing's criteria and is worthy of a higher level of bilateral cooperation. To improve its diplomatic support further, the PRC also seeks to create what it calls a "comprehensive global partnership network" of its strategic partners to form a global "circle of friends." Despite its encompassing rhetoric, the PRC uses nomenclature to implicitly rank its level of "partnership." For example, the PRC ranks Pakistan as its only "all-weather strategic partner," Russia as its only "comprehensive strategic partner with coordination relations," and other countries such as Brazil and various states in South and Southeast Asia holding "all-round strategic partnership relations."

The PRC also promotes reforms to the "global governance system" as part of its diplomatic framework in order to reflect the "profound evolution" of the international order. According to Yang Jiechi, "The global governance system is at an important stage of profound evolution, and global governance has increasingly become the frontier and key issue of China's foreign work." To "seize opportunities" for reform, the PRC actively participates in the construction of a new global governance system based upon the Party's principles. This may be achieved through the creation of new multinational organizations and forums to uphold the authority of the CCP and the PRC's national sovereignty, security, and development interests. Yang also asserted that all nations are considering the state of international affairs following the pandemic, and that as a result, "changes in the international order are accelerating." For example, the PRC promotes BRI as an "important practical platform for the concept of the community of common destiny." BRI also serves to strengthen Beijing's strategic partnerships, enlarge its network of strategic partners, and advance reforms to the international order to support the PRC's strategy.

PRC leaders also continued to push diplomatic efforts to strengthen the PRC's economic connectivity across the Indo-Pacific region, particularly as the PRC's economy recovered from the worst effects of the COVID-19 pandemic. In September 2021, the PRC sought to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) despite the huge gaps in the PRC's ability to comply with the requirements of the trade pact. Beijing's application to CPTPP occurred just a week prior to Taipei's also applying to join the trade bloc, suggesting the PRC may have applied to isolate Taiwan's economic connection

and limit CPTPP members' autonomy to establish regional economic norms without Beijing's input or participation.

In addition, the PRC employed a wide range of diplomatic tools throughout 2021 to erode U.S. influence globally and subvert U.S.-backed security partnerships such as the Quad (Australia, India, Japan, and the United States) and AUKUS (Australia, the United Kingdom, and the United States), which Beijing perceives as avenues to constrain its rise. The PRC also seeks an alternative to the U.S. system of alliances centered on a broader, multilateral "common, comprehensive, cooperative, and sustainable" security. The CCP is frustrated by what it perceives to be an exaggerated threat picture of China caused by the United States. In addition, Beijing routinely asserts the United States is the sole party responsible for escalating U.S.-China tensions, primarily to deflect criticism of the PRC's efforts to reshape the international environment to protect its interests. For example, PRC Foreign Minister Wang Yi claimed at the December 2021 symposium on China's 2021 foreign policy that "…multiple challenges suffered by China-U.S. relations lies in the strategic misjudgment made by the U.S. side on China and bilateral relations." PRC officials and state media outlets also repeatedly condemned the U.S. withdrawal from Afghanistan and cited the withdrawal as evidence that the U.S. is an unreliable partner and declining power. In addition, PRC officials have inaccurately framed AUKUS as an act of nuclear proliferation and a threat to regional stability with an intent to stoke regional concerns about the trilateral security partnership and press countries to limit engagement with U.S.-backed alliances.

COVID Diplomacy. The COVID-19 pandemic also continued to be a driving force behind the PRC's foreign policy efforts throughout 2021. Beginning in 2020 and throughout 2021, Beijing seized the opportunity to use COVID-19 as a propaganda tool against the West, sought to deflect culpability for the global pandemic, and attempted to capitalize on its domestic success in containing the virus and providing foreign health assistance. PRC officials also continue to assert the superiority of the PRC's political model in enabling its success against the virus, despite the notable performance of Asian democracies, particularly Taiwan. In 2021, PRC officials maintained its Zero-COVID strategy, which seeks to eliminate the virus through closed borders and stringent domestic controls. These controls include strict travel restrictions, mass mandatory testing regimes, and extensive quarantine requirements. PRC state media and PRC officials also engaged in an effort to push disinformation on the origins of COVID-19, denigrate democratic countries' responses to COVID, and at times displayed a hardened political response to criticism.

Beijing also sought to establish a reputation as a key supporter of nations around the world fighting the pandemic. Throughout 2021, the PRC conducted an extensive vaccine diplomacy effort, providing through donations or sales, PRC-origin vaccines for strategic political purposes. Beijing primarily targeted countries in Asia and the Global South, viewing the provision of COVID-19 vaccines as an opportunity to bolster China's bilateral ties, advance its responsible great power narrative, and undercut support for Taiwan. The PRC also

continued to provide COVID-19 aid, such as personal protective equipment (PPE) and medical teams, to countries around the world, in some cases using military transport assets and personnel. However, the lack of sufficient data and transparency raised questions concerning the effectiveness of the PRC's vaccines amidst reports of low protection rates, later confirmed by the Director of the PRC Center for Disease Control in April 2021. In addition, spread of new COVID-19 variants such as Omicron raised international concerns about the efficacy and durability of PRC-origin COVID-19 vaccines.

In 2021, the PRC's COVID-19 related aid and vaccines were criticized for including political conditions. Aid recipients and outside observers noted that Beijing often linked provision of assistance and promises of vaccine doses to specific PRC policy objectives, such as exclusion of Taiwan from the World Health Assembly and other international organizations, participation in BRI, opening markets to PRC technology companies, and severing diplomatic recognition of Taiwan. For example, the PRC successfully used vaccine provision to convince the Brazilian government to reverse its ban on Huawei participation in its 5G networks. Though unsuccessful, in the case of Paraguay's need for vaccines, the PRC sought to extract concessions regarding Paraguay's diplomatic relations with Taiwan in exchange for aid in early 2021.

Assertive Diplomacy. In 2021, Xi Jinping continued to urge efforts for the PRC to develop a "voice in international discourse that matches China's comprehensive national strength and international status." In the PRC's view, strengthening the country's international communication was "imperative" to creating a "favorable external environment for China's reform, development, and stability." PRC diplomats, and non-official PRC actors, continued to use a more aggressive, confrontational approach to pursuing PRC aims and responding to criticism, often referred to as "Wolf Warrior" diplomacy—a term coined by Western observers. PRC diplomats frequently engaged in more assertive diplomacy with foreign audiences through traditional mediums and social media platforms—many of which are banned in the PRC. Although Xi Jinping said that China needs to improve its efforts to create a positive image of the PRC, PRC officials have maintained their hostile diplomatic messaging often in a performative style, which receives praise from domestic PRC audiences. For example, at the March 2021 U.S.-PRC Meeting in Anchorage, Yang Jiechi and PRC Foreign Minister Wang Yi exclusively blamed the United States for causing the downward trajectory in U.S.-Sino relations, with Yang Jiechi asserting that "the United States is not qualified to speak to China from a position of strength." In June 2021, the PRC Ambassador to France defended the PRC's "Wolf Warrior" diplomacy, claiming that international criticism of Beijing's approach reflects the "arrogance of the west" and proclaimed that he was honored to be described as a "Wolf Warrior." PRC diplomats and state media outlets have echoed this defense, suggesting that PRC officials view hostile and assertive diplomacy as an effective tool to advance and defend China's interests.

Military Diplomacy. The PRC's willingness to engage in military diplomacy with other countries can vary considerably based on its perception of a country's adherence to Beijing's diplomatic framework. For example, the PRC's "comprehensive strategic partnership of coordination" with Russia entails a relatively high degree of military cooperation. Sino-Russian military cooperation occurs in practical forms through exchanges of training, equipment, technology, high-level visits, and other coordination mechanisms. For other strategic partnership countries, the PRC seeks to leverage those relationships to reinforce the PRC's systemic preferences and maintain stability in Beijing's favor. For countries with whom the PRC has not established strategic partnerships, such as the United States, the PRC shapes its military cooperation along more minimalist principles of conflict avoidance that emphasize "non-conflict" and "mutual respect." From Beijing's perspective, these curtailed relationships at least serve its foreign policy objective by ensuring stable relations with major powers.

While the COVID-19 pandemic continued to constrain PRC's military diplomacy in 2021, the PLA increased its external high-level military visits compared to 2020 and maintained close contact with the military leadership of neighboring countries. The PLA also relied on high-level virtual bilateral meetings and multilateral engagements to supplement cancelled engagements and maintain contacts with foreign militaries. The PRC has set up defense and security consultations as well as working meeting mechanisms with 17 neighboring countries to keep exchange channels open.

China's Territorial Disputes in Context

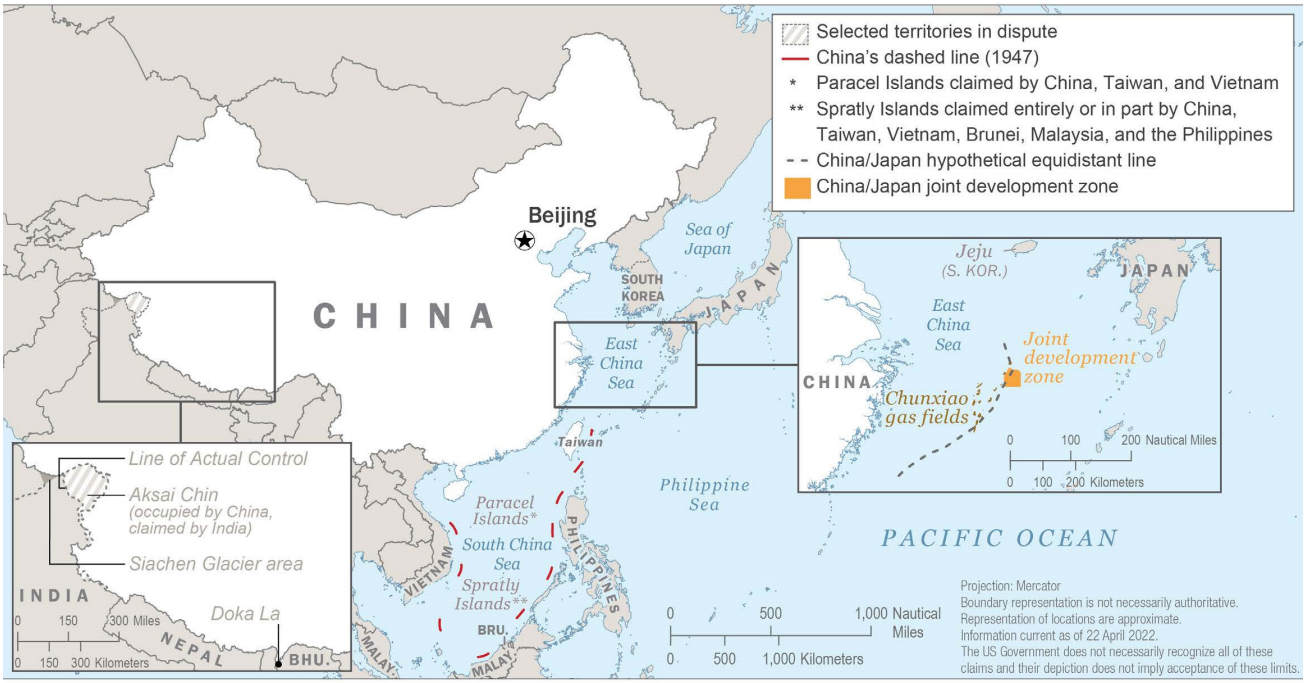
The PRC's use of force in territorial disputes has varied widely since 1949. Some disputes led to war, as in border conflicts with India in 1962 and Vietnam in 1979. China's contested border with the Soviet Union during the 1960s raised the possibility of nuclear war. In recent cases involving land border disputes, China has sometimes been willing to compromise with and even offer concessions to its neighbors. Since 1998, China has settled 11 land-based territorial disputes with six of its neighbors. However, within the last decade China has employed a more coercive approach to deal with several disputes over maritime features, ownership of potentially rich offshore oil and gas deposits, and border areas.

Tensions with ***India*** along the Line of Actual Control (LAC) sparked a standoff between Chinese and Indian forces in mid-May 2020, which persisted into the winter. The standoff escalated on June 15th 2020 after a skirmish ensued in the Galwan Valley between Indian Army and PLA forces that ended with 20 Indian soldiers and four PRC soldiers dead, according to press. In 2021, the PRC continued to amass forces and build military infrastructure along the LAC.

The PRC and Japan have overlapping claims to both the continental shelf and the exclusive economic zones (EEZs) in the ***East China Sea***. The East China Sea contains natural gas and oil, though hydrocarbon reserves are difficult to estimate. Japan maintains that an equidistant

line from each country involved should separate the EEZs, while China claims an extended continental shelf beyond the equidistant line to the Okinawa Trench. The PRC continues to assert sovereignty over the Japan-administered Senkaku Islands and reiterate the importance of abiding by the four-point consensus signed in 2014, which states both sides will acknowledge divergent positions over the East China Sea dispute but will prevent escalation through dialogue, consultation, and crisis management mechanisms. Japan remains concerned with the persistent deployment of PRC coast guard ships and fishing vessels in disputed East China Sea waters and contests the PRC's claim of sovereignty.

Select Chinese Territorial Claims



The ***South China Sea (SCS)*** plays an important role in security considerations across East Asia because Northeast Asia relies heavily on the flow of oil and commerce through SCS shipping lanes, including more than 80 percent of the crude oil to Japan, South Korea, and Taiwan. China claims sovereignty over the Spratly and Paracel Islands and other land features within its ambiguous self-proclaimed "nine-dash line"—claims disputed in whole or part by Brunei, the Philippines, Malaysia, and Vietnam. Taiwan, which occupies Itu Aba Island in the Spratly Islands, makes the same territorial assertions as the PRC. To further assert its sovereignty, in April 2021, China created two new administrative districts to cover the Paracels and Spratlys, and named 80 geographical features it claims in the region. The PRC continued to employ the PLA Navy (PLAN), China Coast Guard, and maritime militia to patrol the region throughout 2021. In response to China's continued assertive actions,

Indonesia, Malaysia, the Philippines, and Vietnam publicly rejected Beijing's nine-dash line claims and invoked international law in support of their maritime sovereign rights.

The PRC has long challenged foreign military activities in its claimed ***exclusive economic zone*** **(EEZ)** in a manner that is inconsistent with the rules of customary international law as reflected in the United Nations Convention on the Law of the Sea. However, in recent years, the PLA has begun conducting the same types of military activities inside and outside the First Island Chain in the EEZs of other countries, including the United States. This activity highlights China's double standard in the application of its interpretation of international law. Examples include sending intelligence collection ships to collect on military exercises such as the Rim of the Pacific (RIMPAC) exercise off Hawaii in 2014 and 2018, TALISMAN SABER off Australia in 2017, 2019, and 2021, and operating near Alaska in 2017 and 2021. PRC survey ships are also extremely active in the South China Sea and they frequently operate in the claimed EEZs of other nations in the region such as the Philippines, Vietnam, and Malaysia.

ECONOMIC POLICY

Key Takeaways

- The PRC's military modernization objectives are commensurate with and part of China's broader national development aspirations. The CCP's economic, political, social, and security development efforts are mutually reinforcing and support Beijing's strategy of national rejuvenation.

- Beijing's "dual circulation (双循环)" policy aims to forge domestic resilience by reducing China's reliance on foreign supply chains that have proven to be economic chokepoints. In addition, the policy aims to boost domestic production and consumption to fuel growth, and decrease the economy's reliance on exports moving forward.

- China's economic development supports its military modernization not only by providing the means for larger defense budgets, but through deliberate Party-led initiatives such as the Belt and Road Initiative (BRI) and Made in China 2025, as well from systemic benefits of the PRC's growing national industrial and technological base.

- China's tools of economic statecraft include inducements such as infrastructure investments under BRI; industrial and technology policies that seek foreign technology transfers in exchange for market access; protectionist policies and legal barriers for foreign firms to compete in China's domestic market; selective observance of trade commitments; and economic coercion against other states.

The PRC's military modernization objectives are commensurate with, and part of, China's broader national development aspirations and work in coordination with China's economic policies and systems. PRC's leaders directly link the pace and scale of the PLA's modernization with the country's overall development. PRC's economic, political, social, and military development efforts are mutually reinforcing and support its strategy of national rejuvenation. The Party gives priority to China's economic development as the "central task" and frames its economic system as the means of advancing the nation's overall political and social modernity. In particular, China's economic targets abroad focuses intensely on advancing what the Party calls the country's "productive forces" (e.g., industry, technology, infrastructure, and human capital) which it views as the means to achieve the country's political and social modernity—including building a "world-class" military. The party-state's relentless efforts to grow China's national industrial and technological base has significant implications for China's military modernization, as well as for China's global economic partners.

CCP leaders have cast China's partial adoption of market features—which were implemented as part of its "reform and opening up" that began in the late 1970s, and subsequently led to an economic transformation—as evidence that their strategy to modernize China has been succeeding rather than viewing the market feature adoption as a repudiation of the Party's fundamental economic ideals. Party leaders since Deng Xiaoping have consistently rationalized China's market-oriented economic reforms as a necessary regression from socialism needed to account properly for China's historical circumstances, which left it significantly underdeveloped. According to the Party, contemporary China remains at the beginning stage or the "primary stage of socialism" with a long process of socialist modernization ahead.

Basic Economic System. The Party conceives of China's economy as constituting the "basic economic system" in which public ownership is dominant and state, collective, and private forms of ownership develop side-by-side. The basic economic system comprises China's public ownership economy and the multi-ownership economy.

Economic Development Goals. Despite slowing economic growth just prior to and during the COVID-19 outbreak, China will continue to pursue the economic policy objectives determined by the CCP Central Committee and set forth in the 14th Five-Year Plan. According to Xi's report at the 19th Party Congress, China's economic goals are: (1) furthering supply-side structural reform; (2) making China a country of innovators; (3) pursuing a rural vitalization strategy; (4) implementing the coordinated regional development strategy; (4) accelerating efforts to improve the socialist market economy; and (5) making new ground in pursuing opening up on all fronts. The CCP sets more specific development goals in its Five-Year Plans (FYPs). The PRC is currently executing the 14th FYP that will cover 2021-2025. The priorities and goals in the FYPs not only apply to the government and the public

ownership economy, but also serve as implicit guidance from the Party to the multi-ownership economy.

Economic Conditions. Even before COVID-19, China's economic growth had slowed because of demographic challenges, declining returns from state-led infrastructure investment, and slowing urbanization. Since 2016, and increasingly in the past year, the PRC leadership's decision to increase oversight and tighten regulation on the financial and tech sector, as well as the PRC's efforts to curb risky lending practices in housing and property markets have added additional strain on its economy. China's efforts in early 2020 to contain the COVID-19 outbreak with government lockdowns and strict control measures exacerbated this slowdown in China's economy. In March 2021, China announced an annual growth target of 6 percent, but China achieved 8.1 percent growth for 2021. In the first half of 2021 China's exports surged, fueling growth, but as the economic landscape tightened exports were weaker in the second half of the year, portending substantially slower growth in to 2022.

Economic Policies & Practices. The PRC's introduction of market economy features within the "basic economic system" without a full transition to free and open markets has resulted in laws, regulations, and policies that generally disadvantage foreign firms vis-à-vis their Chinese counterparts in terms of tradable goods, services sectors, market access, and foreign direct investment. Examples of China's economic policies and trade practices include its support to domestic industries at the expense of foreign counterparts, commercial joint venture requirements, technology transfer requirements, subsidies to lower the cost of inputs, sustaining excess capacity in multiple industries, sector-specific limits on foreign direct investment, discriminatory cybersecurity and data transfer rules, insufficient intellectual property rights enforcement, inadequate transparency, and lack of market access—particularly in the information and communications technology (ICT), agriculture, and service sectors. Market access remains difficult for foreign firms because China restricts inbound investment, resulting in persistent underperformance in other countries' services exports, particularly in the banking, insurance, Internet-related, professional, and retail services sectors.

In March 2018, an investigation by the Office of the U.S. Trade Representative (USTR) under Section 301 of the Trade Act of 1974 determined that the acts, policies, and practices of the PRC government related to technology transfer, intellectual property, and innovation were unreasonable or discriminatory and burden or restrict U.S. commerce, resulting in harm to the U.S. economy of at least $50 billion per year. Additionally, the USTR's annual Special 301 Report, which identifies trading partners that do not adequately or effectively protect and enforce intellectual property rights and the findings of its Review of Notorious Markets for Counterfeiting and Piracy, has repeatedly identified China as a country that has serious intellectual property rights deficiencies. These reports, for example, have repeatedly identified China as the world's leading source of counterfeit and pirated goods. Since 2006, USTR has placed China on its Priority Watch List, placement on which indicates particular problems

with respect to intellectual property protection, enforcement, or market access for U.S. persons relying on intellectual property. The USTR's 2020 Special 301 Report states: "China's placement on the Priority Watch List reflects U.S. concerns with China's system of pressuring and coercing technology transfer, and the continued need for fundamental structural changes to strengthen intellectual property protection and enforcement, including to trade secret theft, obstacles to protecting trademarks, online piracy and counterfeiting, the high-volume manufacturing and export of counterfeit goods, and impediments to pharmaceutical innovation."

A large portion of China's economic output results from government and policy-directed investments rather than market-based forces. China pursues state-directed investment overseas and encourages mergers and acquisitions. Along with heavy investments in infrastructure and commodities to support its strategic firms, increase economic engagement, and improve economic security, China is investing in technologies that will be foundational for future innovations with both commercial and military applications.

The PRC seeks and obtains foreign technology through the following means: foreign direct investment, overseas acquisitions, legal technology imports, the establishment of foreign research and development (R&D) centers, joint ventures, research and academic partnerships, talent recruitment, industrial, and cyberspace-enabled espionage and theft.

Recent legal proceedings highlight numerous cases of China's efforts to obtain technology and knowledge through theft of trade secrets and economic espionage. In November 2021, a jury in U.S. Federal court convicted a PRC intelligence officer of attempting to steal industry-leading aviation trade secrets. Court documents show that the PRC officer attempted to steal technology related to GE Aviation's exclusive composite aircraft engine fan to benefit the PRC state. In November of 2020, a rheumatology professor pleaded guilty to using $4.1 million in NIH grants to develop China's expertise in rheumatology and immunology. In November 2019, a U.S. Federal grand jury indicted a PRC national who had worked as an imaging scientist for Monsanto and its subsidiary, The Climate Corporation, on charges related to economic espionage and stealing trade secrets for China. Federal officials stopped him from boarding a flight on a one-way trip to China in 2017 with a proprietary algorithm, according to the U.S. Department of Justice.

The PRC's recent economic policies have promoted innovation focused on strengthening domestic industry, while placing additional restrictions on foreign firms. Recognizing that some of its initiatives such as "Made in China 2025" and BRI have sparked concerns about China's intentions, China's leaders have adopted less inflammatory rhetoric when promoting these initiatives without altering their fundamental strategic goals.

> *Made in China 2025*: First announced by the PRC in May 2015, the "Made in China 2025" plan seeks to increase China's domestic innovation by setting higher targets for domestic manufacturing in strategic industries such as robotics, power

equipment, and next-generation information technology by 2020 and 2025. This plan seeks to strengthen China's domestic enterprises through awarding subsidies and other incentives while increasing pressure on foreign firms to transfer technology to have market access in China. "Made in China 2025" came under criticism from advanced countries for unfairly favoring China's domestic enterprises at the expense of foreign participants in China's markets. Increasingly aware and sensitive to these concerns, by June 2018, China began avoiding references to "Made in China 2025" in major policy papers. The PRC government ordered its media outlets to downplay use of the term in June 2018. Key events that PRC leaders use to set strategic directives have also avoided references to "Made in China," including the 2019 Central Economic Work Conference and the NPC. Despite the adjustments in its narrative, China has largely continued implementing the policies behind "Made in China 2025."

Dual Circulation: In 2020, Xi Jinping articulated the economic policy of dual circulation, which aims for a largely self-sufficient China that could innovate, manufacture, and consume within its own economy, while still drawing on the international economy through exports, critical supply chains, and limited imports of capital. Dual circulation seeks to enable the internal markets and external markets to reinforce each other, with a focus on establishing the domestic market as the primary driver of economic growth.

Legal Framework. The PRC in recent years has implemented new laws that seek to place further restrictions on foreign firms while creating or strengthening the legal framework for the Party's national security concepts and in some cases furthering its Military-Civil Fusion (MCF) Development Strategy (discussed in the next section):

National Defense Law: Adopted in March 1997, the law provides legal justification to mobilize the military and civilian resources in defense of a broad range of national interests.

National Security Law: Adopted in July 2015, the law limits foreign access to the information and communications technology (ICT) market in China on national security grounds.

Counterterrorism Law: Adopted in December 2015, among its provisions, the law requires telecommunications operators and Internet service providers to provide information, decryption, and other technical support to public and state security organizations "conducting prevention and investigation of terrorist activities."

National Defense Transportation Law: Coming into effect in 2016, the National Defense Transportation Law advances the PRC military-civil fusion development

strategy by laying the groundwork for the PLA Navy to mobilize civilian maritime transportation resources and facilities to support power projection missions.

Cyber Security Law: The law, which went into effect in June 2017, promotes development of indigenous technologies and restricts sales of foreign ICT in China. The law also requires that foreign companies submit ICT for government-administered national security reviews, store data in China, and seek government approval before transferring data outside of China.

Intelligence Law: Passed in June 2017, the law allows authorities to monitor and investigate foreign and domestic individuals and organizations to protect national security. Specifically, it allows authorities to use or seize vehicles, communication devices, and buildings to support intelligence collection efforts.

Cryptography Law: Adopted in October 2019 and coming into effect in 2020, this law requires entities working on cryptography to have management systems in place to ensure sufficient security for their encryption. Although the law encourages development of commercial encryption technology, its use cannot harm national security or the public good. It provides for the State Cryptography Administration and its local agencies to have complete access to cryptography systems and the data protected by those systems.

Foreign Investment Law: In March 2019, the PRC's NPC passed a new Foreign Investment law with the stated objective of improving the business environment for foreign investors and leveling the playing field between foreign businesses and Chinese private firms and State-Owned Enterprises (SOEs). The law passed in just three months, which reflects an unusually fast turnaround in China where the same level of legislation usually takes years. PRC officials have indicated that swift passage of the law was to facilitate U.S.-China trade talks, and the law appears to respond to a number of issues raised by the U.S. Trade Representative's Section 301 report related to unfair Chinese trade practices related to intellectual property, technology transfer, and innovation. Despite the law's stated objective, its wording is vague and the most substantial provisions are not new.

Anti-Foreign Sanctions Law: Adopted at the 29th meeting of the Standing Committee of the 13th National People's Congress on June 10th, 2021, the law was enacted to "safeguard national sovereignty, security, and development interests, and to protect the legitimate rights and interests of Chinese citizens and organizations." According to PRC media sources, the law is intended to "counter, fight, and oppose" unilateral sanctions on the PRC imposed by foreign countries. The law was likely adopted in response to sanctions on PRC officials in connection with serious human rights abuse in Xinjiang.

Data Security Law: This law went into effect on September 1st, 2021 and subjects almost all data-related activities to government oversight, as PRC officials grew concerned about the transfer of potentially sensitive data overseas. Companies in the PRC have become more reluctant to share data, as authorities are ambiguous as to what is considered sensitive information, increasing difficulties for international firms trying to do business in the PRC. In early November, local providers of ship tracking data stopped sharing details of ship locations, citing the data security law.

Personal Information Protection Law: Effective on November 1st, 2021 and enacted by the Standing Committee of the National People's Congress, the law is purposed to protect the rights and interests on personal information, regulate personal information processing activities, and promote reasonable use of personal information. PRC media sources note that activities such as "collection, application, processing, and trading of personal information will be strictly monitored" with infringements punishable according to the law. The law exemplifies a more complete system of regulation that will work in tandem with the PRC's existing Cybersecurity Law and Data Security Law.

CHINA'S BELT AND ROAD INITIATIVE

Key Takeaways

- The PRC uses BRI to support its strategy of national rejuvenation by seeking to expand global transportation and trade linkages to support its development and deepen its economic integration with nations along its periphery and beyond.
- In 2021, the PRC significantly increased engagement with African, Latin American, and Middle Eastern countries and began prioritizing public health, digital infrastructure, and green energy opportunities.
- Overseas development and security interests under BRI will drive the PRC towards expanding its overseas security footprint to protect those interests.

First announced in 2013, the PRC's BRI initiative is the signature foreign and economic policy advanced by President Xi Jinping, which rebranded and further expanded China's global outreach. Beijing uses BRI to support its strategy of national rejuvenation by seeking to expand global transportation and trade links to support its development and deepen its economic integration with nations along its periphery and beyond. The PRC implements BRI by financing, constructing, and developing transportation infrastructure, natural gas pipelines, hydropower projects, digital connectivity, satellite navigation ground stations, and technology and industrial parks worldwide. For example, Huawei has implemented "Safe Cities" programs across many African countries prompting concerns of surveillance and digital authoritarianism from the PRC. As of 2021, at least 146 countries had signed BRI cooperation documents, up from 138 in 2020 and 125 in 2019. BRI related spending is difficult to estimate

because there is no comprehensive list of projects, and difficulties delineating between official lending and lending from PRC state-owned banks; however, publicly available data indicates that the PRC's 2021 BRI financing and investment commitments were similar to those of 2020 and around 50 percent lower than the pre-pandemic numbers of 2019.

In support of its national strategy, Beijing leverages BRI to strengthen its territorial integrity, energy security, and international influence. The PRC aims to improve stability and diminish threats, for example, by investing in projects along its western and southern periphery. Similarly, through BRI projects associated with pipelines and port construction in Pakistan, it seeks to become less reliant on transporting energy resources through strategic choke points, such as the Strait of Malacca. It also attempts to exploit the relationships it builds through BRI to pursue additional economic cooperation with participating countries.

2021 saw two key shifts in how Beijing implements BRI: The PRC significantly increased engagement with African and Middle Eastern countries, particularly Iraq, and began prioritizing public health, digital infrastructure, and green energy opportunities through its "Health Silk Road (健康丝绸之路)" (HSR), "Digital Silk Road (数字丝绸之路)" (DSR), "Space Information Corridor (空间信息走廊) " (SIC), and "Green Silk Road (绿色丝绸之路)" (GSR). Improving each of these "roads" offers Beijing benefits beyond economic integration.

- HSR is Beijing's World Health Organization-supported initiative for providing medical assistance through BRI transportation networks, which the PRC leveraged in 2020 and 2021 to provide COVID-19 vaccines, personal protective equipment, and other pandemic support to partner countries. In the future, it may help the PRC expand the international market share of PRC medical products, strengthen its bid for a role as a global public health leader, and identify the need for – and justify – new BRI projects.

- DSR is one of the primary ways Beijing delivers PRC technology to partner countries, which the PRC leverages to propagate its own technology standards as it seeks to set global standards for next-generation technology. The PRC hopes the DSR will increase international e-commerce by reducing cross-border trade barriers and establishing regional logistics centers by promoting e-commerce through digital free trade zones. Another goal of the DSR is to reduce PRC dependence on foreign tech leaders by providing markets for Chinese goods, thereby creating production opportunities for PRC tech firms. The PRC is investing in digital infrastructure abroad, including next-generation cellular networks—such as fifth-generation (5G) networks—fiber optic cables, undersea cables, and data centers. The initiative also includes developing advanced technologies including satellite navigation systems, artificial intelligence (AI), and quantum computing for domestic use and export.

- Noted in the 2021 PRC State Council report on China's Space Program, the PRC continued to press ahead with the construction of the SIC—the space-based component of BRI. The SIC advances the PRC's national interests with aims to (1) internationalize the Beidou navigation system; (2) advance the construction of satellite telemetry, tracking, and command ground stations with potential dual-use applications; (3) provide space launch, satellite, and data services to BRI signatories; and (4) integrate PRC satellites with BRI infrastructure projects. The integration could make operation of these infrastructure projects dependent on PRC satellites and associated space services.

- GSR aims to support low-carbon infrastructure, energy, and finance projects – an initiative that aligns with the PRC's own goal of achieving carbon neutrality before 2060 and presents Beijing as a responsible party in working toward the 2030 Agenda for Sustainable Development Goals established by the United Nations General Assembly.

Since BRI's inception, its long-term viability has faced challenges from international concerns over corruption, debt sustainability, and environmental effects, coupled with suspicion of Beijing's motives and the risk inherent in operating in politically unstable areas. China has applied military, intelligence, diplomatic, and economic tools to counter perceived threats, but the party-state leaders lack the expertise to assess comprehensive risks in most participating countries. However, 2021 brought additional challenges such as a weak appetite for investment precipitated by the COVID-19 pandemic and rising tensions in the Indo-Pacific region. Kenya, for example, was unable to secure PRC financing to finish a super-fast rail link from its port of Mombasa to Uganda, a flagship BRI project in Africa. Meanwhile, Australia canceled its 2018 and 2019 agreements to deepen cooperation on infrastructure, innovation, and trade development through BRI on the grounds that they were contrary to Australia's national interests.

As the PRC's overseas development and security interests expand under BRI, the CCP has signaled that its overseas security footprint will expand accordingly to protect those interests, which Beijing recognizes may provoke pushback from other states. Some of BRI's planned or active economic corridors transit regions prone to violence, separatism, armed conflict, and instability, putting BRI-related projects and PRC citizens working overseas at risk. In 2021, for example, 10 PRC nationals were killed and 26 others injured when a suicide bomber targeted a workers' bus on its way to a BRI infrastructure development project in Pakistan. China has therefore sought to extend its ability to project military power to safeguard its overseas interests, including BRI, by developing closer regional and bilateral counterterrorism cooperation and supporting host-nation security forces through military aid, including military equipment donations.

MILITARY-CIVIL FUSION DEVELOPMENT STRATEGY

Key Takeaways

- The PRC pursues its Military-Civil Fusion (MCF; 军民融合) Development Strategy to "fuse" its security and development strategies to build an integrated National Strategic System and Capabilities in support of the PRC's national rejuvenation goals.
- Beijing's MCF strategy includes objectives to develop and acquire advanced dual-use technology for military purposes and deepen reform of the national defense science and technology industries, and serves a broader purpose to strengthen all of the PRC's instruments of national power.
- The PRC's MCF development strategy encompasses six interrelated efforts: (1) fusing China's defense industrial base and its civilian technology and industrial base; (2) integrating and leveraging science and technology innovations across military and civilian sectors; (3) cultivating talent and blending military and civilian expertise and knowledge; (4) building military requirements into civilian infrastructure and leveraging civilian construction for military purposes; (5) leveraging civilian service and logistics capabilities for military purposes; and (6) expanding and deepening China's national defense mobilization system to include all relevant aspects of its society and economy for use in competition and war.

The PRC pursues its Military-Civil Fusion (MCF) Development Strategy as a nationwide endeavor that seeks to meld its economic and social development strategies with its security strategies to build an integrated national strategic system and capabilities in support of China's national rejuvenation goals. The Party's leaders view MCF as a critical element of their strategy for the PRC to become a "great modern socialist country" which includes becoming a world leader in science and technology (S&T) and developing a "world-class" military.

Although the PRC's MCF strategy includes objectives to develop and acquire advanced dual-use technology for military purposes and deepen reform of the national defense S&T industries, its broader purpose is to strengthen all of the PRC's instruments of national power by melding aspects of its economic, military, and social governance. MCF strives to establish an infrastructure that connects the military and civilian sectors in a way that serves as a catalyst for innovation and economic development, yields an effective unity of effort in advancing dual-use technologies, especially those suited for "intelligentized" warfare, and facilitates effective industrial mobilization during wartime.

Development & Significance. The Party has explored the concept of leveraging or integrating the combined contributions of the military and civilian sectors since the PRC's founding. The current MCF concept initially took root in the early 2000s as the Party sought methods to enhance the PRC's overall development. This led Party leaders to call for

improving "military-civilian integration" that echoed the collaboration between the defense and civilian sectors that China observed in the United States and other developed countries. Implementation of these efforts stalled due to a lack of centralized government control and the organizational barriers that exist across the party-state. Coinciding with the 11th Five Year Plan (FYP) (2006-2010), the PRC began replacing "military-civilian integration" with "military-civilian fusion." In 2007, Party officials publicly noted the change from "integration" to "fusion" was not merely cosmetic, but broadened the scope to include all available economic resources in the promotion of the defense industry.

Since that time, MCF's ambitions have grown in scope and scale as the Party has come to view it as a means to bridge the PRC's economic and social development with its security development in support of the PRC's national strategy to renew China. As such, the Party has continued to elevate MCF's importance. In 2015, the CCP Central Committee elevated the MCF Development Strategy to a national-level strategy to serve as a bridge between the PRC's national development strategy and its national security strategy that seeks to build an "integrated national strategic system and capabilities," all of which support the PRC's goal of national rejuvenation. In 2020 during the 5th Plenum of the 19th CCP Central Committee, PRC leaders reiterated the high-level priority of MCF by calling for accelerated military modernization through integration of new technologies and operational concepts, increased science and technology research, improved MCF, and personnel reforms.

Management & Implementation. The overall management and implementation of the MCF Development Strategy involves the most powerful organs in the party-state: the Politburo, the State Council (notably the National Development and Reform Commission), and the CMC. In addition to signifying its importance, the CCP Central Committee's elevation of the MCF Development Strategy to a national-level strategy also intended to overcome obstacles to implementation across the party-state.

This elevation also led to the establishment of the Central Commission for Military Civilian Fusion Development (CCMCFD) in 2017, chaired by General Secretary Xi Jinping, Premier Li Keqiang, several other members of the Politburo Standing Committee, two State Councilors, both CMC Vice Chairmen, 12 Ministry-level leaders, and others. The stated objective of the CCMCFD is to build the PRC's "national strategic system and capabilities." This commission works to improve the "top-level design" of MCF and overcome impediments to implementation. The elevation of the MCF Development Strategy and the creation of the CCMCFD signals the importance that Party leaders place on MCF and the scope and scale of the strategy's ambitions.

The PRC pursues MCF through six interrelated efforts. Each effort overlaps with the others and has both domestic and international components. The Party seeks to implement the MCF Development Strategy across every level of the PRC from the highest national-level organs down to provinces and township, and creates top-down financing and regulatory mechanisms that incentivize civilian and military stakeholders—such as local governments, academia,

research institutions, private investors, and military organizations—to combine efforts on dual-use technologies. The PRC refers to these six aspects as "systems," which may also be understood as mutually supporting lines of effort or components. The six systems in the MCF Development Strategy are:

The Advanced Defense Science, Technology, and Industrial System. This system focuses on fusing the PRC's defense industrial base and its civilian technology and industrial base. This includes expanding the private sector's participation in the PRC's defense industrial base and supply chains as well as improving the efficiency, capacity, and flexibility of defense and civilian industrial and manufacturing processes. This broader participation seeks to transfer mature technologies both ways across military and civilian sectors, with the goal to produce outsized benefits for both sectors. This also aims to increase the competitiveness within the PRC's defense industrial base in which one or two defense SOEs dominate an entire sector. This MCF system also seeks to advance the PRC's self-reliance in manufacturing key industrial technologies, equipment, and materials to reduce its dependence on imports, including those with dual-uses. The PRC's MCF-influenced industrial and technology endeavors include *Made in China 2025* that sets targets for the PRC to achieve greater self-sufficiency in key industrial areas such as aerospace, communications, and transportation.

The Military-Civil Coordinated Technology Innovation System. This MCF system seeks to maximize the full benefits and potential of the country's S&T development. Consistent with the CCP leadership's view that high technology and innovation are critical to strengthening China's comprehensive national power, this system develops and integrates advanced technologies across civilian and military entities, projects, and initiatives—with benefits flowing in both directions. This includes using cutting-edge civilian technology for military applications or to more broadly advance military S&T, as well as using military advancements to push civilian economic development. Although related to the Advanced Defense Science, Technology, and Industrial System, this system largely focuses on fusing innovations and advances in basic and applied research. Specific efforts in this MCF system include strengthening and promoting civilian and military R&D in advanced dual-use technologies and cross-pollinating military and civilian basic research. Additional efforts include promoting the sharing of scientific resources, expanding the institutions involved in defense research, and fostering greater collaboration across defense and civilian research communities. This system also seeks to foster "new-type" research institutions with mixed funding sources and lean management structures that are more dynamic, efficient, and effective than the PRC's wholly state-owned research bodies. Examples of MCF-influenced dual-use S&T endeavors include the PRC's Innovation Driven Development Strategy and Artificial Intelligence National Project.

The Fundamental Domain Resource Sharing System. This system includes building military requirements into the construction of civilian infrastructure from the ground up as well as leveraging China's civilian construction and logistics capacities and capabilities for

military purposes. This includes factoring military requirements and dual-use purposes into building civilian private and public transportation infrastructure such as airports, port facilities, railways, roads, and communications networks. This also extends to infrastructure projects in dual-use domains such as space and undersea, as well as mobile communications networks and topographical and meteorological systems. Another element seeks to set common military and civilian standards to make infrastructure easier to use in emergencies and wartime. This aspect of MCF has arguably the greatest reach into the PRC's local governance systems as military requirements inform infrastructure construction at the province, county, and township levels. The influence of this aspect of MCF is visible in the PRC's major land reclamations and military construction activities in the South China Sea, which brought together numerous government entities, the PLA, law enforcement, construction companies, and commercial entities. It may also have important implications for the PRC's overseas infrastructure projects and investments under BRI as the PRC seeks to establish a more robust overseas logistics and basing infrastructure to allow the PLA to project and sustain military power.

The Military Personnel (Talent) Cultivation System. This MCF system seeks to blend and cultivate military and civilian S&T expertise through education programs, personnel exchanges, and knowledge sharing. The purpose of this effort is to improve the utilization of experts able to participate in S&T projects irrespective of whether they are military or civilian (or even foreign) experts and allow expertise to flow more freely across sectors. This aspect of MCF also seeks to reform the PRC's talent cultivation system, which encompasses hundreds of talent recruitment plans, in order to improve China's human capital, build a highly skilled workforce, and recruit foreign experts to provide access to know-how, expertise, and foreign technology. It takes into account all levels of education from the Party's nationwide "patriotic education" programs for children to the matriculation of post-doctorate researchers within China and at institutions abroad. Many of the PRC's named talent programs are likely influenced by MCF planning, as are reforms in its military academies, national universities, and research institutes.

The Socialized Support and Sustainment System for the PLA. This system entails two major efforts that seeks to shift the PLA away from its inefficient self-contained logistics and sustainment systems, and towards modern streamlined logistics and support services. First, it seeks to harness civilian public sector and private sector resources to improve the PLA's basic services and support functions—ranging from food, housing, and healthcare services. The concept is to gain efficiencies in costs and personnel by outsourcing non-military services previously performed by the PLA while also improving the quality of life for military personnel. Second, it seeks to further the construction of a modern military logistics system that is able to support and sustain the PLA in joint operations and for overseas operations. This system seeks to fuse the PLA Joint Logistic Support Force's (JLSF's) efforts to integrate the military's joint logistics functions with the PRC's advanced civilian logistics, infrastructure, and delivery service companies and networks. These arrangements seek to

provide the PLA with modern transportation and distribution, warehousing, information sharing, and other types of support in peacetime and wartime. This fusion also seeks to provide the PLA with a logistics system that is more efficient, higher capacity, higher quality, and global in reach.

The National Defense Mobilization System. This MCF system binds the other systems as it seeks to mobilize the PRC's military, economic, and social resources to defend or advance China's sovereignty, security and development interests. The Party views China's growing strength as only useful to the extent that the party-state can mobilize it. China views mobilization as the ability to use precisely the instrument, capability, or resource needed, when needed, for the duration needed. Within the PLA, the reforms in 2015-16 elevated defense mobilization to a department called the National Defense Mobilization Department (NDMD), which reports directly to the CMC. The NDMD plays an important role in this system by organizing and overseeing the PLA's reserve forces, militia, and provincial military districts and below. This system also seeks to integrate the state emergency management system into the national defense mobilization system in order to achieve a coordinated military-civilian response during a crisis. Consistent with the Party's view of international competition, many MCF mobilization initiatives not only seek to reform how the PRC mobilizes for war and responds to emergencies, but how the economy and society can be leveraged to support the PRC's strategic needs for international competition.

MCF Linkages. Each MCF system entails linkages between dozens of organizations and government entities, including:

- *Ministry-level organizations from the State Council*: Examples include the National Development and Reform Commission, Ministry of Foreign Affairs, Ministry of Industry and Information Technology, Ministry of Education, and key state entities such as the State Administration of Science and Technology in National Defense and others.

- *Lead military organs subordinate to the Central Military Commission*: CMC Strategic Planning Office, Joint Political, Logistics, and Equipment Development Departments, as well as operational units and the regional military structure at the Military District and Sub-District levels; military universities and academies such as National Defense University, Academy of Military Science, National University of Defense Technology, and service institutions.

- *State-sponsored educational institutions, research centers, and key laboratories*: Prominent examples include the "Seven Sons of National Defense" (Harbin Institute of Technology, Nanjing University of Science and Technology, Northwestern Polytechnical Institute, Beijing Institute of Technology, Harbin Engineering University, Beihang University, and Nanjing University of Aeronautics and Astronautics), as well as certain PLA-affiliated laboratories of Tsinghua University,

Beijing University, and Shanghai Jiaotong University, North University of China, and others.

- *Defense industry*: The ten major defense SOEs continue to fill their traditional roles providing weapons and equipment to the military services. Many defense SOEs consist of dozens of subsidiaries, sub-contractors, and subordinate research institutes.

- *Other SOEs and quasi-private companies*: High profile examples include PRC high-tech corporations and important SOEs like China Ocean Shipping Company (COSCO), China National Offshore Oil Company, and major construction companies that have roles in BRI projects as well as helping the PRC build out occupied terrain features in the South China Sea.

- *Private companies*: MCF efforts also seek to increase the proportion of private companies that contribute to military projects and procurements. These enterprises include technology companies that specialize in unmanned systems, robotics, artificial intelligence, cybersecurity, and big data.

- *Multi-Stakeholder Partnerships*: In practice, many MCF efforts involve partnerships between central, provincial, or city government entities with military district departments, PLA departments, academia, research entities, and companies. A majority of provincial and local governments have announced MCF industrial plans, and more than 35 national-level MCF industrial zones have been established across China. MCF-linked investments funds created by central and local governments and private investors total in the tens of billions of dollars.

DEFENSE POLICY & MILITARY STRATEGY

Key Takeaways

- In 2021, the PRC's stated defense policy aims remained oriented toward safeguarding its sovereignty, security, and development interests, while emphasizing a greater global role for itself. The PRC's military strategy remains based on the concept of "active defense (积极防御)."

- PRC leaders stress the imperative of strengthening the PLA into a "world-class" military by the end of 2049 as an essential element of its strategy to rejuvenate the PRC into a "great modern socialist country."

- In 2020, the PLA added a new milestone for modernization in 2027: to accelerate the integrated development of mechanization, informatization, and intelligentization of the PRC's armed forces, which if realized could give the PLA capabilities to be a more credible military tool for the CCP to wield as it pursues Taiwan unification.

- In 2021, the PLA began discussing a new "core operational concept," called "Multi-Domain Precision Warfare (MDPW; 多域精确战)." MDPW is intended to leverage a command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) network, which the PLA calls the "network information system-of-systems that incorporates advances in big data and artificial intelligence to rapidly identify key vulnerabilities in the U.S. operational system and then combine joint forces across domains to launch precision strikes against those vulnerabilities.

The PRC has stated its defense policy aims to safeguard its national sovereignty, security, and development interests. CCP leaders view these interests as foundational to their national strategy. The modernization of the armed forces is an indispensable element of the Party's national strategy to modernize the country. At the Fifth Plenum in October 2020, the CCP declared that the PRC's ambitions for becoming a rich country are closely integrated with its ambitions to develop a powerful military. The PRC's defense policy and military strategy primarily orients the PLA toward "safeguarding" its perceived "sovereignty and security" interests in the region counter to the United States. At the same time, CCP leaders increasingly cast the armed forces as a practical instrument to defend Beijing's expanding global interests and to advance its foreign policy goals within the framework of "Great Power Diplomacy with Chinese characteristics."

As reported in the 19th Party Congress, one of the conditions for the PLA's military modernization is to enable the PRC to "effectively shape the PLA's military posture, manage crises, and deter and win wars." The PRC's military strategy is based on "active defense," a concept that adopts the principles of strategic defense in combination with offensive action at the operational and tactical levels. To adapt the PRC's armed forces to long-term trends in global military affairs and meet the country's evolving national security needs, PRC's leaders stress the imperative of meeting key military transformation targets set for 2027 and 2035. These milestones seek to align the PLA's transformation with the PRC's overall national modernization so that by the end of 2049, the PRC will field a "world-class" military.

Strategic Assessment. A key driver of the PRC's defense policy is how the CCP leaders perceive the relative threats and opportunities facing the country's comprehensive national development. During Chairman Xi's CCP centenary speech, he called for the full implementation of the Party's idea of strengthening the army in the new era. The last defense white paper, *China's National Defense in the New Era*, published in 2019 reaffirmed that China's armed forces are aligned with and contribute to the strategies of the Chinese Communist Party (CCP), stating that ongoing military reforms "ensure absolute leadership of the CCP over the military." According to the paper, Beijing views the international environment as undergoing "profound changes unseen in a century." The CCP concludes that "international strategic competition is on the rise" and expresses deep concerns at what it sees as growing sources of instability in the near-term. Offering no introspection on Beijing's own role in stirring geopolitical tensions through its economic practices, military activities and

modernization, excessive maritime territorial claims, assertive diplomacy, or efforts to revise aspects of global governance, the PRC describes the international system as being "…undermined by growing hegemonism, power politics, unilateralism and constant regional conflicts and wars." Similarly, the PRC contends that global military competition is intensifying, and that "major countries" are adjusting their security and military strategies, reorganizing their militaries, and are developing new types of combat forces to "seize the strategic commanding heights in military competition."

Defense Policy. The PRC's stated defense policy is to "resolutely safeguard" its sovereignty, security, and development interests, according to its 2019 defense white paper—offering continuity with past statements by PRC senior leaders and other official documents. In practice, the PRC's military power is increasingly a central feature of the CCP's regional and global ambitions. The 2019 defense white paper also identifies the PRC's national defense aims that support these interests, likely offered in order of importance:

- to 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 Turkistan";
- to safeguard national sovereignty, unity, territorial integrity, and security;
- to safeguard the PRC's maritime rights and interests;
- to safeguard the PRC's security interests in outer space, the electromagnetic spectrum, and cyberspace;
- to safeguard the PRC's overseas interests;
- and to support the sustainable development of the country.

Key changes in defense policy for the "New Era" include efforts to improve coordination across the party-state to leverage all organs of national power in a unified approach to support the CCP's ambitions of a global military capability. Unlike previous defense white papers, *China's National Defense in the New Era* explicitly stressed the PRC's armed forces' alignment and support to the Party's broader societal and foreign policy objectives. The paper specifically aligns the PRC's armed forces with the national objectives set by General Secretary Xi Jinping at the 19th Party Congress in 2017. For example, the white paper states that the PRC's armed forces must be ready to, "provide strong strategic support for the realization of the Chinese Dream of national rejuvenation, and to make new and greater

contributions to the building of a shared future for mankind." Also notable is the growing explicit alignment between the PRC's defense and foreign policies, particularly in the armed forces' role in protecting the PRC's overseas interests and furthering the CCP's concept of "strategic partnerships" with other countries.

Military Strategic Guidelines (军事战略方针). The Chairman of the CMC issues military strategic guidelines to the PLA that provide the foundation of the PRC's military strategy. The military strategic guidelines set the general principles and concepts for the use of force in support of the CCP's strategic objectives, provide guidance on the threats and conditions the armed forces should be prepared to face, and set priorities for planning, modernization, force structure, and readiness. The CCP leadership issues new military strategic guidelines, or adjusts existing guidelines, whenever they perceive it necessary to shift the PLA's priorities based on the Party's perceptions of China's security environment or changes in the character of warfare.

Since 2019, trends indicate the PRC has reviewed and adjusted its military strategic guidelines. In early 2019, PRC state media indicated that Beijing held senior-level meetings to "establish the military strategy of the 'New Era.'" The PRC's 2019 defense white paper states that the PLA is implementing guidelines for the "New Era" that, "…actively adapt to the new landscape of strategic competition, the new demands of national security, and new developments in modern warfare…" PRC official media in the latter half of 2019 echoed these themes and described the guidelines as constituting a notable change. The PRC's defense white paper may reflect changes in the guidelines given its emphasis on the intensification of global military competition, the increase in the pace of technological change, and the military modernization themes introduced by General Secretary Xi Jinping at the 19th Party Congress. Documents released following the Fifth Plenum of the 19th Central Committee in October 2020 hailed progress in the "comprehensive and in-depth" implementation of the "New Era military strategic guidelines."

These developments are notable because the CCP leadership has issued new military strategic guidelines or adjusted its guidelines only a few times since the end of the Cold War. In 1993, the CMC under Jiang Zemin directed the PLA to prepare to win "local wars" under "high-tech conditions" after observing U.S. military operations in the Gulf War. In 2004, the CMC under Hu Jintao ordered the military to focus on winning "local wars under informationized conditions." In 2014, the CMC under Chairman Xi Jinping placed greater focus on conflicts in the maritime domain and fighting "informatized local wars."

Military Strategy—Active Defense. The PRC's military strategy is based on what it describes as "active defense," a concept that adopts the principles of strategic defense in combination with offensive action at the operational and tactical levels. 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. Active defense is rooted on the principle of avoiding initiating armed conflict, but responding forcefully if challenged. The PRC's 2019 defense white paper reaffirmed active defense as the basis for its military strategy. Minister of National Defense General Wei Fenghe reiterated this principle of active defense in his speech at the Ninth Beijing Xiangshan Forum in 2019, stating that the PRC "will not attack unless we are attacked, but will surely counterattack if attacked."

First adopted by the CCP in the 1930s, active defense has served as the basis for the PRC's military strategy since its founding in 1949. Although the PRC has adjusted and tailored the specifics of active defense over time based on changes in strategic circumstances, its general principles have remained consistent. Contemporary PRC writings describe the tenets of active defense as:

- *Adhere to a position of self-defense and stay with striking back*. This describes the basic principle for the use of military force under active defense. The PRC's 2019 defense white paper describes this principle as, "We will not attack unless we are attacked, but we will surely counterattack if attacked." Active defense may entail defensive counterattacks in response to an attack or preemptively striking an adversary that the PRC judges is preparing to attack.

- *Combine strategic defense with operational and tactical offense*. This aspect offers two approaches to warfare influenced by Mao Zedong's notion of using defense and offense in turns. First, active defense may involve offensive campaigns, operations, and tactical actions in support of the strategic defense. These may occur rapidly and along "external lines." Second, it uses strategic defense to weaken the enemy and set the conditions to transition into strategic offense in order to secure victory.

- *Taking the operational initiative*. This aspect emphasizes the effective use of offensives at the operational and tactical levels, avoiding enemy strengths, and concentrating on building asymmetric advantages against enemy weaknesses to "change what is inferior into what is superior."

- *Strive for the best possibilities*. This calls for thorough peacetime military preparations and planning based on fighting the most challenging threat under the most complicated circumstances "in order to get the best results." This aspect stresses the importance of setting conditions in advance and suggests it is preferable to be prepared and not fight, than to fight unprepared.

- *The dialectical unity of restraining war and winning war*. This tenet seeks to resolve the dilemma that using too little force may protract a war instead of stopping it, while the unconstrained use of force may worsen a war and make it harder to stop. Calling for the "effective restraint of warfare," this tenet seeks to avoid war first through sufficient military preparations and powerful conventional and strategic forces that act

in concert with political and diplomatic efforts to "subdue the enemy's forces without fighting." If war is unavoidable, however, this aspect calls for restraining war by taking the "opening move" and "using war to stop war."

- *Soldiers and the people are the source of victory*. This integrates the concept of active defense with the concept of "people's war." People's war comprises subordinate military strategies, "guerrilla war" and "protracted war" that Mao saw as a means to harness the capacity of China's populace as a source of political legitimacy and mobilization to generate military power. Contemporary PRC writings link "people's war" to national mobilization and participation in wartime as a whole-of-nation concept of warfare.

Military Missions & Tasks. The CMC directs the PLA to be ready and able to perform specific missions and tasks to support the Party's strategy and defend the PRC's sovereignty, security, and development interests. The PLA's missions and tasks in the "New Era" include: safeguarding China's territorial sovereignty and maritime rights and interests; maintaining combat readiness; conducting military training under real combat conditions; safeguarding China's nuclear weapons and its interests in the space and cyberspace domains; countering terrorism and maintaining stability; protecting the PRC's overseas interests; and participating in emergency response and disaster relief.

Modernization Objectives & Targets. The PLA successfully achieved its 2020 modernization goal to generally achieve mechanization, while continuing to "significantly enhance informatization and greatly improve its strategic capabilities." Throughout 2021, the PLA continued to pursue ambitious modernization objectives, implement major organizational reforms, update its procurement, training, and recruitment systems, and improve its combat readiness in line with the goals and timelines announced by General Secretary Xi Jinping at the 19th Party Congress in 2017. The PRC's goals for modernizing its armed forces in the "New Era" are:

- **By 2027**: "Accelerate the integrated development of mechanization, informatization, and intelligentization," while boosting the speed of modernization in military theories, organizations, personnel, and weapons and equipment;

- **By 2035**: "To comprehensively advance the modernization of military theory, organizational structure, military personnel, and weaponry and equipment in step with the modernization of the country and basically complete the modernization of national defense and the military …"; and,

- **In 2049**: "To fully transform the people's armed forces into world-class forces."

The new milestone for PLA modernization in 2027 aligns with the 100th anniversary of the PLA's founding. While the new 2027 goal did not clearly shift forward any of the PLA's

declared modernization for 2035 and 2049 objectives, it did likely shift the PLA's development of certain capabilities within the categories of the integrated development of mechanization, informatization, and intelligentization. If realized, this achievement could give the PLA capabilities to be a more credible military tool for the CCP to wield as it pursues Taiwan unification. Following the PLA generally achieving mechanization, its 2020 goal, a new interim target was likely believed to be necessary by PRC leadership as a means for the CCP to keep the PLA on track towards its longer-term 2035 and 2049 goals—paralleling the CCP's broader approach towards military development occurring in three steps. In March 2021, Xi Jinping stated that 2021, the first year of China's 14th Five Year plan, would be the year in which the new "three steps (三步走)" of PLA modernization would begin. PLA writings note the "three-step" strategic arrangement connects "near-, medium-, and long-term goals by 2027, 2035, and 2049.

The 5th Plenum communique holds that the 2027 goal means that the Chinese military should comprehensively push forward the modernization of military theories, military organizational form, military personnel, and weapons and equipment. PRC media, citing a military source, connected the PLA's 2027 goals to developing the capabilities to counter the U.S. military in the Indo-Pacific region, and compel Taiwan's leadership to the negotiation table on Beijing's terms. The communique stressed the need to "spur on synchronous improvements in national defense and economic power," (presumably under Military-Civil Fusion), a PLA spokesman added that "China's national defense strength does not match its economic growth, and is not compatible with China's international standing and its strategic security needs."

Although China's leaders view building military strength as a strategic imperative, they also place important caveats on these objectives. For example, Chairman Xi's direction to the PLA to "basically complete" modernization by 2035 should also occur "in step with the modernization of the country." These qualifications serve several purposes that highlight the interlocking nature of the Party's strategic planning. First, as the PRC's interests continue to expand as it develops, the Party expects the PLA to keep pace with the country's evolving interests and be ready and able to defend its progress. Second, linking the PLA's transformation to the country's transformation allows Party leaders to signal the scope and scale of the internal changes they expect the PLA to implement, particularly given its historic resistance to reforms that challenge its risk-adverse organizational culture or threaten vested bureaucratic interests. Finally, these qualifications provide flexibility to the Party's leaders to modulate military resources and defense objectives based on the conditions of the country's overall development. This offers PRC leaders the ability to adapt to changing economic or international conditions and ensure military investments support—rather than compromise—the strategy.

Military Ambitions. The CCP has not defined what it means by its ambition to have a "world-class" military by the end of 2049. Within the context of China's national strategy, however, it is likely that the PRC will seek to develop a military by mid-century that is equal to—or in some cases superior to—the U.S. military, and that of any other great power that Beijing

views as a threat to its sovereignty, security, and development interests. Given the far-reaching ambitions the CCP has for a rejuvenated China, it is unlikely that the Party would aim for an end state in which the PRC would remain in a position of military inferiority vis-à-vis the United States or any other potential rival. For the PRC to aim lower or otherwise willingly accept a permanent condition of military inferiority would seem anathema to the fundamental purpose of becoming a "great modern socialist country." However, this does not mean that the PRC will aim for the PLA to mirror the U.S. military in terms of capacity, capability, or readiness. The PRC will likely seek to develop its "world-class" military in a manner that it believes best suits the needs of its armed forces to defend and advance the country's interests and how the PLA—guided by the Party—adapts to the changing character of warfare.

Way of War. The PLA increasingly view warfare as a confrontation between opposing operational systems, rather than a war of annihilation between opposing mechanized military forces. Following this logic, PLA writings refer to systems destruction warfare (体系破击战) as the next way of war, transforming from mechanized warfare to an informatized and intelligentized style warfare. Though not a new PLA approach, systems destruction warfare likely continues to be the principal theory guiding its way of war.

In November 2020, the CMC announced that it had issued the "Chinese People's Liberation Army Joint Operations Outline (Trial)." The Outline establishes a system for the PLA's joint operations and focuses on clarifying basic issues regarding the organization and implementation of joint operations, command rights and responsibilities, and the principles, requirements, and procedures for joint operations, combat support, national defense mobilization, and political work. According to PLA writings, the Outline describes how the future combat style of the PLA will be integrated joint operations under the unified command of a joint operations command system. PLA writers emphasized that winning future wars would require a high degree of joint integration of various combat forces and combat elements from across the PLA services and all domains, with jointness deepened at the operational and tactical levels. The PLA's "operational regulations" were last updated in 1999 and PLA leaders and PLA-affiliated academics had pointed to the lack of updated doctrine, which is out of step with the 2015-era structural command and organizational reforms and an obstacle to advancing the next steps in building a unified joint PLA.

After the Outline was issued, PLA writings noted that PLA joint operations remain limited to the strategic level and are insufficient for success in future wars because of the reliance on the command authority of senior leaders or the use of administrative means to ensure compliance.

Core Operational Concept. In 2021, the PLA began discussing a new "core operational concept," called "Multi-Domain Precision Warfare (MDPW;多域精确战)." MDPW is intended to leverage a C4ISR network, which the PLA calls the "network information system-of-systems that incorporates advances in big data and artificial intelligence, to rapidly identify key vulnerabilities in the U.S. operational system and then combine joint forces across

domains to launch precision strikes against those vulnerabilities. MDPW is meant to sit atop an "operational conceptual system-of-systems," suggesting the PLA will develop additional subordinate operational concepts and use simulations, war games, and exercises to test, evaluate, and improve these future-oriented operational concepts. The timing of MDPW's appearance with China's updated doctrine and military strategic guidelines suggests that MDPW serves as a connection between them, likely amplifying themes and guidance in both while focusing on the contours of what the PLA must be able to do to win future wars.

Readiness. Alongside modernizing the PLA's capabilities and organizational reform, PRC leaders have identified enhancing the combat readiness of the armed forces as an important element in developing the PRC's military strength. In recent years, Chairman Xi Jinping and senior military leaders have continued to emphasize the need to build the PLA's combat readiness so it can "fight and win wars." This emphasis has not only entailed the PLA conducting more training, but making its training more rigorous and realistic as well as addressing issues in the PLA's training and education systems relating to conducting complex joint operations and adapting to other aspects of modern warfare. It probably has also led to a standardization of a combat readiness system across the PLA to enable the PRC to quickly transition to a wartime footing.

Along with the CCP leadership's focus on improving the PLA's combat readiness, in recent years PLA media outlets have noted shortcomings in the military's training and education systems that reportedly left some commanders—particularly at the operational level—inadequately prepared for modern warfare. In recent years, PLA media outlets have identified the need for the military to address the "Five Incapables" problem: that some commanders cannot (1) judge situations; (2) understand higher authorities' intentions; (3) make operational decisions; (4) deploy forces; and (5) manage unexpected situations. Although PLA writings do not specify how widespread the "Five Incapables" are, PLA media outlets have consistently raised them. One outside expert has noted this may indicate the PLA lacks confidence in its proficiency to execute its own operational concepts. Additionally, senior Party and PLA leaders are keenly aware that the military has not experienced combat in decades nor fought with its current suite of capabilities and organizational structures. PLA leaders and state media frequently call on the force to remedy the "peacetime disease" that manifests in the form of what it characterizes as lax training attitudes and practices that are viewed as hindering combat readiness.

The COVID-19 pandemic degraded PLA readiness during early 2020, but mitigation measures probably allowed it to return to near-normal states of readiness levels by mid-summer. The PLA continued to conduct exercises throughout 2021. Chapter 2 discusses the PLA's 2021 training and exercises in detail.

Anticorruption Campaign. Anticorruption investigations in the PLA are a component of a Party-wide effort that General Secretary Xi Jinping strengthened and accelerated shortly after taking office. The stated goal of these campaigns is to safeguard the legitimacy of the CCP,

root out corruption, improve governance, and centralize Xi and the Party's authority. Military discipline inspectors led by the CMC Discipline Inspection Commission have targeted individual power networks and occupational specialties historically prone to corruption, such as officers connected to disgraced former CMC Vice Chairmen Xu Caihou and Guo Boxiong, and former Chief of Joint Staff General Fang Fenghui. In 2021, General Secretary Xi Jinping continued to stress strict Party governance for the 14th Five-Year Plan period stating corruption still exists as the biggest risk to the Party's governance. Throughout 2021, the anticorruption campaign also targeted executives within the PRC's defense industrial sector as the Central Commission for Discipline Inspection (CCDI) announced investigations of the former Chairman and head of the Communist Party at China North Industries Group Corporation (Norinco Group) and the executive at China National Nuclear Corporation.

Party-Army Relations. The PLA is the principal armed wing of the CCP and, as a party-army, does not directly serve the state but rather is under the direct control of the party. The CCP Central Military Commission (CMC), currently chaired by Xi Jinping, is the highest military decision-making body in the PRC. As a party-army, the PLA is a political actor. As a constituency within the Party, it participates in the PRC's political and governance systems. As the ultimate guarantor of the Party's rule and the PRC's government system, the PLA's missions include formal and informal domestic security missions in addition to its national defense missions. Since becoming CMC Chairman, Xi Jinping has implemented multiple reforms reducing PLA autonomy and greatly strengthening Party control over the military. Party leaders and official statements continue to emphasize the principles of the Party's absolute control over the PLA and the PLA's loyalty to the Party.

China's Military Leadership

The military's highest decision-making body, the CMC, is technically a department of the CCP Central Committee. The CMC Chairman is a civilian, usually serving concurrently as the General Secretary of the CCP and President of the PRC. CMC members are appointed at the Party Congresses every five years. In fall of 2022, five of the seven CMC members were expected to retire. During the 20th Party Congress, General Zhang Youxia remained as Vice Chairman, joined by General He Weidong as the second Vice Chairman. Other CMC members include General Li Shangfu, General Liu Zhenli, and returning members Admiral Miao Hua and General Zhang Shengmin. The CMC in 2021 consisted of two vice chairs, the Minister of National Defense, the chiefs of the Joint Staff and Political Work Departments, and the head of the Discipline Inspection Commission.

Chairman Xi Jinping concurrently serves as the CCP General Secretary, CMC Chairman, and President of the PRC. The first two positions are party positions, while the third is a state position. Xi was first appointed as Party General Secretary and CMC Chairman in 2012 and as President in the spring of 2013. Xi was reappointed to his Party positions at the fall 2017 19th Party Congress and was reappointed President in spring 2018 at the National People's Congress (NPC). For a third term, Xi was reappointed to his Party positions in 2022 at the

20th Party Congress and is expected to be reappointed President at the 2023 NPC. In 2016, Xi was announced as the commander-in-chief of the CMC's Joint Operations Command Center (JOCC) and was named "core" leader of the CCP Central Committee. Prior to becoming CMC Chairman, Xi served as the CMC's only civilian Vice Chairman under Hu Jintao. Xi's father was an important military figure during China's communist revolution and was a Politburo member in the 1980s. Xi Jinping served as an aide to a defense minister early in his career and had regular interactions with the PLA as a provincial Party official.

Vice Chairman General Xu Qiliang was the first career air force officer to be appointed the PRC's top uniformed official. Xu is a public advocate for reform and guides the effort as a deputy secretary of the CMC's reform leading group. Xu previously served on the CMC as the PLA Air Force (PLAAF) commander, where he oversaw rapid force modernization and expanded the air force's foreign engagement. He may have crossed paths with Xi Jinping early in his career, when both men served in Fujian Province. Xu was the first PLAAF officer to serve as deputy chief of the General Staff Department (GSD) since the Cultural Revolution period, and – at 54 years of age at the time – the youngest in PLA history. Xu served as a third term CMC member and retired following the Party Congress in 2022.

Vice Chairman General Zhang Youxia was China's second-most senior officer and former head of the Equipment Development Department. Zhang gained rare experience as a combat commander during China's brief war with Vietnam in 1979. Zhang formerly commanded the Shenyang Military Region, which shared a border with North Korea and Russia. Zhang is one of the PLA's "princelings." His father, a well-known military figure in China, served with Xi Jinping's father at the close of China's Civil War in 1949. Zhang was expected to retire due to previously followed age norms within the PLA, but remains on the CMC for a third term following the 20th Party Congress.

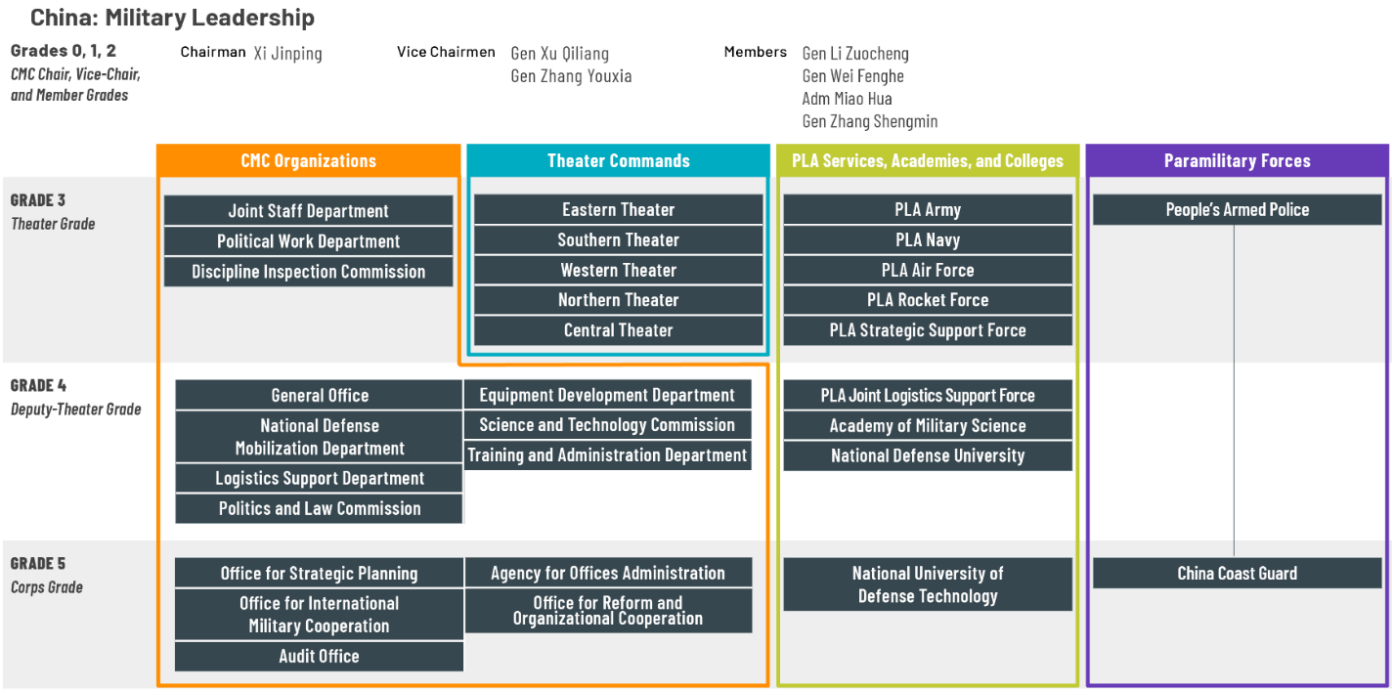
Minister of National Defense General Wei Fenghe was appointed to the CMC at the 2017 Party Congress, and as the Minister of National Defense at the NPC in March 2018. Wei is the PLA's third-most senior officer and manages its relationship with state bureaucracies and foreign militaries. Unlike the U.S. Secretary of Defense, he is not part of the chain of command and his primary policy influence is derived from membership on the CMC and State Council. Wei served in multiple missile bases across different military regions and held top posts in the headquarters of the former PLA Second Artillery Corps, the PLA Rocket Force's (PLARF's) predecessor, before being promoted in late 2010 to Deputy Chief of the General Staff – the first officer from the Second Artillery to serve in that position. Wei most recently was the PLARF commander. Wei is serving a second term as a CMC member he will likely be replaced as the Minister of National Defense during the National People's Congress in March 2023.

Joint Staff Department Chief General Li Zuocheng oversaw PLA joint operations, a narrowing of the wider responsibilities held by the former GSD prior to reforms initiated in 2015. Li is one of few remaining active duty PLA officers with combat experience and is

recognized as a combat hero for his service in China's border war with Vietnam. He was also the first Army commander after the PLA Army (PLAA) became a separate service in 2015. Li previously commanded the Chengdu Military Region, which was responsible for the sensitive area of Tibet. Li Zuocheng retired from his CMC position following the 20th Party Congress.

Political Work Department Director Admiral Miao Hua oversees the PLA's political work, including propaganda, organization, and education. Miao is a former Army officer who switched services to the Navy in December 2014 when he became political commissar of the PLA Navy (PLAN). Miao may have ties to Xi from his time serving in the 31st Group Army in Fujian Province, when his career overlapped with Xi's. Miao participated as the PLAN political commissar during the Navy's BRI cruise conducted in mid-2017. Miao Hua, at age 65 in 2021, remained on the CMC in his current position.

Secretary of the Discipline Inspection Commission General Zhang Shengmin oversees the highest-level organization responsible for investigating military violations of Party discipline. Zhang is also a deputy secretary and third ranking member on the standing committee of the Party's Discipline Inspection Commission. Zhang's appointments indicate the Party's commitment to the anticorruption campaign in the military. Shortly after his appointment to the CMC, Zhang was promoted to the rank of general, the highest rank in the PLA. Zhang Shengmin, at age 64 in 2021, remained on the CMC following the 20th Party Congress.



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CHAPTER TWO: CHINA'S FORCES, CAPABILITIES, AND POWER PROJECTION

Key Takeaways

- The PLA has sought to modernize its capabilities and improve its proficiencies across all warfare domains so that, as a joint force, it can conduct the full range of land, air, and maritime, as well as nuclear, space, counterspace, electronic warfare (EW), and cyberspace operations.
- The PLA's evolving capabilities and concepts continue to strengthen the PRC's ability to fight and win wars against a "strong enemy (强敌)" (a euphemism likely for the United States), counter an intervention by a third party in a conflict along the PRC's periphery, and project power globally.
- In 2021, the PLA continued to make progress implementing major structural reforms, fielding modern indigenous systems, building readiness, and strengthening its competency to conduct joint operations.

With approximately 2.2 million active duty military service members and 660,000 paramilitary personnel, China maintains one of the largest military forces in the world. In 2021, China's defense budget increased by 6.8% to $261 billion. According to a PRC work report, the new defense budget aligned with PRC military goals associated with its 2027 and 2035 military modernization program. PRC state media reported that the defense budget increase over the prior year focused on modernizing the PLA's training with realistic simulation and the use of virtual reality, accelerating improvements in logistics capabilities, investing in defense science and technology, and enhancing the military's strategic capacities.

In effort to create a leaner, more mobile force, the PLA Army (PLAA) has steadily reduced active duty personnel in the last three decades but still outnumbers other services with roughly one million soldiers in 2021. The PLA Navy (PLAN) and PLA Air Force (PLAAF) have grown in size since 2015, indicating their increasing importance. By 2021, the PLAN Marine Corps expanded from two to six brigades and supplemented with aviation and Special Forces, becoming increasingly capable of protecting China's overseas interests. The PLA Rocket Force (PLARF), formerly the Second Artillery, manages the PRC's land-based nuclear and conventional missile units. The Strategic Support Force (SSF) centralizes the PLA's strategic space, cyberspace, electronic warfare, information, communications, and psychological

warfare missions and capabilities. Lastly, the Joint Logistics Support Force (JLSF) handles quartermaster, transportation, medical services, and other logistic functions to enhance PLA's joint capabilities during peace and war.

PEOPLE'S LIBERATION ARMY ARMY (PLAA)

Key Takeaways:

- The PLAA emphasized realistic training scenarios and standardization of training methods during the exercise STRIDE-2021 and throughout extensive joint amphibious training that utilized both PLAN and civilian roll-on roll-off (RORO) vessels.
- The PLAA and Russian Army units participated in ZAPAD/INTERACTION-2021, a large-scale joint exercise to expand cooperation between the two militaries, which was conducted on PRC soil for the first time.
- The PLAA applied twice a year conscription after delays from COVID-19 in 2020, emphasizing the recruitment of college graduates and students with science, technology, engineering, and mathematics (STEM) backgrounds.

The PLA Army (PLAA) has approximately 975,000 active-duty personnel in combat units and is the primary ground fighting force in the PLA. The 2020 PRC National Defense University's Science of Military Strategy described the PLAA's development as a transition from a regional defense force to a global combat force. In 2021, the PLAA continued to emphasize the modernization and standardization of their equipment through the fielding of new and upgraded combat systems. 2021 also highlighted standardization of training, improvements to power projection capabilities, and extensive combined-arms and joint trainings.

Force Structure and Organization. In 2021, the PLAA continued to field a large number of new platforms and updated equipment. The major force restructuring required by the 2016 and 2017 PLA reforms is complete, but significant additional equipment fielding is necessary to complete the transformation of the PLAA into a fully modern force.

The PLAA is organized into five Theater Army Commands, the Xinjiang military command, and the Tibet military command. The PLAA has 13 group armies, which are comprised of multiple combined-arms brigades that serve as the PLAA's primary maneuver force. The brigades vary in size and composition. The PLAA delineates its combined-arms brigades into three types: light (high-mobility, mountain, air assault, and motorized), medium (wheeled armored vehicles), and heavy (tracked armored vehicles), with sizes ranging from approximately 4,000 (light) to 5,000 (heavy) personnel each. Each group army controls six additional brigades responsible for operational element functions: an artillery brigade, an air defense brigade, an army aviation (or air assault) brigade, a special operations forces (SOF)

brigade, an engineer and chemical defense brigade, and a sustainment brigade. Some variations exist with at least one group army per theater separating their engineering and chemical defense brigades into separate units. Although the PLAA has standardized its group armies, it does retain a number of nonstandard divisions and brigades that exist outside of the group armies. These units are typically located in areas the CCP considers sensitive including Xinjiang, Hong Kong, and Beijing.

Capabilities and Modernization. Despite the PLAA's ambitions to become a highly modernized ground force they still widely employ a mix of modern and obsolete tanks and armored fighting vehicles. Throughout 2021, the PLAA continued to test and field new systems with a large emphasis on the development of situational awareness and manned unmanned teaming (MUM-T) with the proliferation of vertical takeoff and landing (VTOL) and fixed-wing uncrewed aerial systems (UAS). Soldier enhancement capabilities have also taken the next step as units are beginning to use exoskeletons and hyperbaric oxygen therapy to mitigate stresses on the individual soldier. A ground force with these capabilities, supported by sufficient lift and sustainment capabilities, would likely be able to project at least limited ground power regionally. The PLAA also continued the fielding of light, highly mobile systems with emphasis on areas with difficult terrain.

The PLAA is rapidly developing a limited capability to project ground power as an expeditionary force. In addition to protecting national sovereignty and security, the 2020 National Defense University's Science of Military Strategy describes the PLAA as focused on improving precision, multi-functional, and sustained operations capabilities, command and control, and integrated systems to promote ambitions of building a global combat capable army. The PLAA's primary power projection initiatives are mobile, modular combined arms formations, special operations forces, and PLAA Aviation and Air Assault units.

After years of substantial reform, the combined-arms battalion of the combined arms brigade is the basic combat unit of the PLAA. PLAA officers tell PRC media that the formations comprise more than 10 different combat arms, are plug-and-play and adjustable based on the terrain and mission requirements. The PLAA enhanced power projection capabilities through increased mobility, ease of transport and logistics, and precision strike capabilities. This was accomplished through an effort to lighten PLAA with a focus on medium and light, high mobility platforms, and the fielding of new long-range multiple rocket launcher systems.

The PLAA's 15 Special Operations Forces (SOF) brigades provide group army commanders with an organic unit capable of executing special operations. Typical PLAA SOF brigade missions include raids, harassment operations, target seizure and control, special reconnaissance, precision strike guidance, and rescue operations. Observed SOF training in 2021 included aerial infiltration, small-unit tactics, and maritime operations.

PLAA Aviation and Air Assault units remained a focus of development in 2021. PLAA training events and reports in PRC media show that air-ground integration, multi-dimensional

assaults, and MUM-T are now a standard part of training. Training in 2021 also included numerous examples of helicopters executing nighttime flight operations and ultra-low altitude flying. PLAA Aviation works directly with ground units to enhance its ability to support air assault operations and conduct air strikes. Highlights from PLAA Aviation joint training in 2021 included the army aviation helicopters conducting confrontational training against PLAAF surface-to-air missile brigades, and army aviation helicopters coordinating with PLA Navy landing ships. The two PLAA Air Assault brigades continued extensive training on helicopter insertion, air reconnaissance, and coordinating air strikes with other PLAA units and joint service partners. In 2021, PLAA Aviation Brigades began using the new Z-20 medium-lift transport helicopters for various missions in western China. Ongoing development of PLAA Aviation and Air Assault units will lead to a highly-mobile, modular ground force unit capable of supporting expeditionary operations. Expeditionary operations where PLA seeks to improve proficiency include: the protecting of overseas PRC citizens and overseas PRC economic interests, UN Peacekeeping Operations (UN PKO), Humanitarian Assistance and Disaster Relief (HA/DR), Noncombatant Evacuation Operations (NEO), Counterterrorism Operations (CT), and the ability to secure strategic lines of communication (SLOCs) far from the PRC mainland. The PLAA envisions its Aviation and Air Assault units employing their three-dimensional maneuver, firepower, and assault capabilities to act as a main combat force, support a greater joint operation, or conduct non-war military operations outside China. Overseas military operations is comprised of surveillance implementation, seizure, electronic combat, and battlefield rescue, while overseas non-combat operations include disaster relief, emergency rescue, and anti-terrorism.

Readiness. PLAA training in 2021 followed the trend from 2020, focusing on combined-arms and joint training. PLAA units conducted multiple iterations of STRIDE-2021 in various theaters with an emphasis on setting the standardization of training methods and conditions. PLAA units stressed realistic training, professionalization of opposing force (OPFOR) formations, and conducted numerous force-on-force "confrontation drills."

In addition to conventional ground force training, PLAA units conducted extensive specialty exercises in 2021. Units conducted coastal defense, multiple sea crossings and landings, and high-elevation plateau operations. Joint training included for the first time, ZAPAD/INTERACTION-2021, where PLAA units conducted a large-scale exercise with the Russian military in China. PLAA and Russian forces participating in ZAPAD/INTERACTION-2021 underwent theoretical and systems training, weapon swaps, and a culminating exercise to further understanding and cooperation between the two militaries. The PLAA also continued extensive joint training using PLAN landing ships and civilian RORO vessels to expand amphibious capabilities.

While continuing to focus on equipment modernization, the PLAA also turned to the development of their personnel. The PLAA changes in their recruitment strategy as the PLA implemented a twice a year conscription and increased its emphasis on the recruitment of

college students majoring in science and engineering. The PLAA also emphasized the use of simulations in exercises to carry out immersive training in lieu of actual combat training. Use of simulations gives users an emulation of a battlefield that provides a variety of training situations to allow for completion of instruction and mitigation of shortcomings in a low risk environment.

Major Ground Units



PEOPLE'S LIBERATION ARMY NAVY (PLAN)

Key Takeaways

- The PLAN is numerically the largest navy in the world with an overall battle force of approximately 340 ships and submarines, including approximately 125 major surface combatants. As of 2021, the PLAN is largely composed of modern multi-mission ships and submarines.
- In 2021, the PLAN's overall battle force shrank due to the transfer of 22 early flight JIANGDAO class corvettes to the China Coast Guard.
- The PLAN commissioned its fourth RENHAI class cruiser (CG) in late 2021 and resumed series construction of the JIANGKAI II class frigate.
- The PLAN commissioned two YUSHEN class amphibious assault ships, one each in April 2021 and April 2022. The PLAN launched a third hull in the class in January 2021, which is currently undergoing sea trials prior to commissioning.
- In the near-term, the PLAN will have the ability to conduct long-range precision strikes against land targets from its submarine and surface combatants using land-attack cruise missiles, notably enhancing the PRC's power projection capability.

The PRC's 2019 defense white paper described the People's Liberation Army Navy (PLAN) as adjusting to changes in the strategic requirements of near seas protection and far seas protection, noting that it was "speeding up the transition of its tasks from defense on the near seas to protection missions on the far seas." The PLAN is an increasingly modern and flexible force that has focused on replacing its previous generations of platforms that had limited capabilities in favor of larger, modern multi-role combatants. As of 2021, the PLAN is largely composed of modern multi-role platforms featuring advanced anti-ship, anti-air, and anti-submarine weapons and sensors. The PLAN is also emphasizing maritime joint operations and joint integration within the PLA. This modernization aligns with the PRC's growing emphasis on the maritime domain and increasing demands for the PLAN to operate at greater distances from mainland China.

The PLAN organizes, mans, trains, and equips the PLA's naval and naval aviation forces, as well as the PLAN Marine Corps (PLANMC), which is subordinate to the PLAN. The PLAN continues to implement structural reforms that began in late 2015 and early 2016. Similar to the other services, the PLA-wide reforms removed the PLAN headquarters from conducting operations, which became the purview of the PLA's joint Theater Commands, and focused the PLAN on organizing, manning, training, and equipping naval forces.

Missions. The PLAN continues to develop into a force increasingly capable of global operations, gradually extending its operational reach beyond East Asia. The PLAN's latest

surface and subsurface platforms enable combat operations beyond the reach of the PRC's land-based defenses. In particular, China's growing force of aircraft carriers extend air defense coverage of deployed task groups beyond the range of land based defenses and will enable operations at increasingly longer ranges. The PLAN's emerging requirement for sea-based land-attack systems will also enhance the PRC's ability to project power. Furthermore, the PLAN now has a sizable force of highly capable logistical replenishment ships to support long-distance, long-duration deployments, including two new FUYU class fast combat support ships (AOEs) built specifically to support aircraft carrier operations. The PLAN's expanding fleet of large modern amphibious warships will enable it to conduct a wide range of expeditionary operations wherever PRC interests are threatened or in support of PRC participation in internationally sanctioned operations. The expansion of naval operations beyond China's immediate region will also facilitate its non-war military activities and further legitimize the PRC's growing global military posture, including at its base in Djibouti.

China continues to learn lessons from operating its first aircraft carrier, *Liaoning*. Its first domestically built aircraft carrier, *Shandong*, was launched in 2017 and commissioned in December 2019—the beginning of what the PLA states will be a multi-carrier force. China's next generation of carriers, including one that began construction in 2018, will have greater endurance and an electromagnetic catapult launch system making it capable of launching various types of specialized fixed-wing aircraft for missions such as early warning, electronic warfare (EW), and anti-submarine warfare (ASW). This will increase the striking power of a potential PLAN carrier battle group when deployed to areas beyond China's immediate periphery. China's newest aircraft carrier, the Fujian, is expected commission in 2024.

The PLAN's newest amphibious ships, the YUSHEN class Landing Helicopter Assault (LHA) and YUZHAO class Amphibious Transport Docks (LPD) are modern platforms capable of regional and global expeditionary missions in support of both wartime and non-war contingency operations either singly or as part of capable and flexible task groups composed of multiple amphibious ships and surface combatants.

The PLAN's ability to perform missions beyond the First Island Chain is modest but growing as it gains more experience operating in distant waters and acquires larger and more advanced platforms. China's experience in extended range operations primarily comes from extended task group deployments and its ongoing counterpiracy mission in the Gulf of Aden. Notable deployments in 2021 included the following:

- In April 2021 and December 2021, the PRC aircraft carrier *Liaoning* conducted deployments to the Philippine Sea and South China Sea accompanied by escort ships including the RENHAI class cruiser *Nanchang* during both deployments. According to the Japanese Self-Defense Force, the December deployment included night flight operations almost 200 miles southeast of Okinawa with the task group accompanied by a FUYU class AOE.

- In May of 2021, a PLAN task group operated in the South China Sea, Java Sea, and Celebes Sea, and conducted an exercise with the Indonesian Navy.

- In August and September 2021, a PLAN task group that included a RENHAI class cruiser and an AGI deployed to the North Pacific and operated inside the U.S. EEZ in Alaskan waters.

- In October 2021, PLAN and Russian warships exercised in the Sea of Japan and then sailed into the Pacific Ocean through the Tsugaru Strait that separates the Japanese Islands of Honshu and Hokkaido.

- The PLAN sustained its counter-piracy task groups in the Gulf of Aden through 2021, a 13-year effort that is the PRC's first enduring naval operation beyond the Indo-Pacific region.

Force Structure. The PLAN is the largest navy in the world with a battle force of approximately 340 platforms, including major surface combatants, submarines, ocean-going amphibious ships, mine warfare ships, aircraft carriers, and fleet auxiliaries. In 2021, the PLAN's overall battle force shrank due to the transfer of 22 early flight JIANGDAO class corvettes to the China Coast Guard. This figure does not include approximately 85 patrol combatants and craft that carry anti-ship cruise missiles (ASCM). The PLAN's overall battle force is expected to grow to 400 ships by 2025 and 440 ships by 2030. Much of this growth will be in major surface combatants. The PLAN's force structure consists of three fleets with subordinate submarine flotillas, surface ship flotillas, aviation brigades, and naval bases. The PLAN's Northern Theater Navy is subordinate to the Northern Theater Command, the Eastern Theater Navy is subordinate to the Eastern Theater Command, and the Southern Theater Navy is subordinate to the Southern Theater Command.

Submarines. The PLAN has placed a high priority on modernizing its submarine force, but its force structure continues to grow modestly as it works to mature its force, integrate new technologies, and expand its shipyards. The PLAN currently operates six nuclear-powered ballistic missile submarines (SSBN), six nuclear-powered attack submarines (SSN), and 44 diesel-powered/air-independent powered attack submarines (SS/SSP). The PLAN will likely maintain between 65 and 70 submarines through the 2020s, replacing older units with more capable units on a near one-to-one basis.

The PRC continues to increase its inventory of conventional submarines capable of firing advanced anti-ship cruise missiles (ASCM). Between the mid-1990s and mid-2000s, the PLAN purchased 12 Russian-built KILO class SS units, eight of which are capable of launching ASCMs. China's shipyards have delivered 13 SONG class SS units (Type 039) and 17 YUAN class diesel-electric air-independent propulsion attack submarine (SSP) (Type 039A/B). The PRC is expected to produce a total of 25 or more YUAN class submarines by

2025. In late 2021, the PLAN retired the first two KILO class submarines purchased from Russia in the 1990s.

Over the past 15 years, the PLAN has constructed twelve nuclear submarines – two SHANG I class SSNs (Type 093), four SHANG II class SSNs (Type 093A), and six JIN class SSBNs (Type 094). Equipped with the CSS-N-14 (JL-2) submarine-launched ballistic missile (SLBM) (7,200KM), the PLAN's six operational JIN class SSBNs represent the PRC's first credible sea-based nuclear deterrent.

By the mid-2020s, China will likely build the SHANG class (Type 093B) guided-missile nuclear-powered attack submarine (SSGN). This new SHANG class variant will enhance the PLAN's anti-surface warfare capability and could provide a clandestine land-attack option if equipped with land-attack cruise missiles (LACM). The PLAN is also improving its anti-submarine warfare (ASW) capabilities through the development of its surface combatants and special mission aircraft, but it continues to lack a robust deep-water ASW capability. By prioritizing the acquisition of ASW capable surface combatants, acoustic surveillance ships, and fixed and rotary wing ASW capable aircraft, the PLAN is significantly improving its ASW capabilities. However, it will still require several years of training and systems integration for the PLAN to develop a robust offensive deep water ASW capability.

Surface Combatants. The PLAN remains engaged in a robust shipbuilding program for surface combatants. At the close of 2021, the PLAN was building an aircraft carrier, a new batch of guided-missile destroyers (DDG), and a new batch of guided missile frigates (FFG). These assets will significantly upgrade the PLAN's air defense, anti-ship, and anti-submarine capabilities, and will be critical as the PLAN expands its operations beyond the range of the PLA's shore-based air defense systems. By the end of 2019, the PLAN had commissioned its 30th JIANGKAI II class FFG, reportedly completing the production run. However, in 2021 PRC media reported production had restarted with at least two hulls launched by the end of year and additional units are likely under construction. The PLAN augmented its littoral warfare capabilities, especially for operations in the East and South China Seas, with the high-rate production of the JIANGDAO class FFLs (Type 056 and Type 056A). The PLAN commissioned the 72nd JIANGDAO in February 2021, completing the production run. The PLAN also transferred the early flight JIANGDAO variants, likely 22 ships total, to the China Coast Guard in 2021, probably due to the models' lack of towed-array sonar. The 056A FFLs are equipped with a towed-array sonar and are thus capable ASW ships.

The PLAN has expanded its force of large surface combatants with two programs, the LUYANG III class DDG and the RENHAI class guided-missile cruise (CG). By late 2020, the PRC had launched 25 LUYANG III class DDGs—including 12 lengthened LUYANG III MOD DDGs with 19 of the new hulls commissioning by the end of 2021. Both the standard LUYANG III and the LUYANG III MOD have a 64-cell multipurpose vertical launch system (VLS) capable of launching cruise missiles, surface to air missiles, and anti-submarine missiles. In December 2021, China commissioned its fourth RENHAI class guided-missile

cruiser with the remaining four hulls likely commissioning during 2022. The RENHAI has 112 VLS cells and can carry a large load out of weapons including ASCMs, surface-to-air missiles (SAMs), torpedoes, and anti-submarine weapons along with likely LACMs and anti-ship ballistic missiles (ASBM) when those become operational.

The PLAN continues to emphasize anti-surface warfare capabilities in its force development. The PLAN's frigates and corvettes, as well as modernized older combatants, carry variants of the YJ-83/YJ-83J ASCM (97NM, 180KM), while newer surface combatants such as the LUYANG II class DDGs are fitted with the YJ-62 (215NM, 400KM). The LUYANG III class DDGs and the RENHAI class CGs will be fitted with a variant of China's newest ASCM, the YJ-18A (290NM, 537KM). A few modernized destroyers have been retrofitted with the supersonic YJ-12A ASCM (250NM, 460KM). Eight of the PLAN's 10 KILO class SSs are equipped with the Russian built SS-N-27b ASCM (120NM, 220KM). The PRC's SONG class SS, YUAN class SSP, and SHANG class SSN field the PLAN's newest domestic submarine-launched YJ-18 and its variants, which constitute an improvement over the SS-N-27b ASCM.

The PLAN recognizes that long-range ASCMs require a robust, over-the-horizon (OTH) targeting capability to realize their full potential. To fill this capability gap, the PLA is investing in joint reconnaissance, surveillance, command, control, and communications systems at the strategic, operational, and tactical levels to provide high-fidelity targeting information to surface and subsurface launch platforms.

As the PLAN continues to transition into a global multi-mission force, the addition of land-attack capabilities to its modern array of anti-surface and anti-air capabilities is a logical next step. In the coming years, the PLAN will probably field LACMs on its newer cruisers and destroyers and developmental SHANG class Type 093B SSGN. The PLAN could also retrofit its older surface combatants and submarines with land-attack capabilities as well. The addition of land-attack capabilities to the PLAN's surface combatants and submarines would provide the PLA with flexible long-range strike options. This would allow the PRC to hold land targets at risk beyond the Indo-Pacific region.

Amphibious Warfare Ships. China's investment in Landing Helicopter Assault ships (LHAs) signals its intent to continue to develop its expeditionary warfare capabilities. In April 2021, China commissioned the first of YUSHEN class LHA (Type 075) followed by the commissioning of the second hull in December 2021. A third YUSHEN-class LHA was launched in January 2021, marking an approximately 16-month timeframe to launch the three vessels, and will likely join the fleet in the first half of 2022. The YUSHEN class are highly capable large-deck amphibious ships that will provide the PLAN with an all-aspect expeditionary capability. The YUSHEN class can carry a large number of landing craft, forces, armored vehicles, and helicopters. In addition, the PLAN has eight large YUZHAO class amphibious transport docks (LPD) (Type 071) in service. The YUZHAO class LPDs and YUSHEN class LHAs provide the PLA with greater capacity, endurance, and more flexibility for long-range operations than the PLAN's older landing ships, which it has

reduced in number over the last decade with obsolete units being decommissioned. The YUSHEN and YUZHAO can each carry several YUYI class air-cushion medium landing craft and a variety of helicopters, as well as tanks, armored vehicles and PLAN marines for long-distance expeditionary deployments.

Aircraft Carriers. In December 2019, the PRC commissioned its first domestically built aircraft carrier, *Shandong*, which launched in 2017 and completed multiple sea trials during 2018-2019. *Shandong* was photographed at a base on Hainan Island in the Southern Theater Navy in late 2020 and should now be considered to be operational. *Shandong* is a modified version of the *Liaoning* (Soviet KUZNETSOV class) design and likewise uses a ski-jump takeoff method for its aircraft. The PRC continued work on its second domestically built aircraft carrier in 2021, which will be larger and fitted with an electromagnetic catapult launch system. This design will enable it to support additional fighter aircraft, fixed-wing early-warning aircraft, and more rapid flight operations and thus extend the reach and effectiveness of its carrier based strike aircraft. The PRC's second domestically built carrier, the Fujian, is projected to be operational by 2024, with additional carriers to follow.

Ship Based Aircraft. The PLAN operates and is developing several aircraft to operate from its carriers and combatants. In addition to the standard J-15 fighter that currently operates from PLAN carriers, there is a catapult-capable J-15 variant in development. The aircraft is currently testing from land-based steam and electromagnetic catapults. A third J-15 variant, the J-15D, is a two-seat aircraft equipped with wingtip electronic support measures/electronic intelligence gathering pods as well as several conformal antennas. The aircraft is intended to fill a dedicated electronic attack role. China is also developing a carrier capable variant of the fifth-generation J-31 fighter. Beyond fighter aircraft, China is refining the design of a carrier-borne airborne early warning (AEW) aircraft known as the KJ-600. A mockup of the aircraft, which appears externally similar to the E-2C/D Hawkeye, has existed for many years, and a prototype of the KJ-600 is currently in flight testing. The PRC is also developing the Z-20F helicopter for the PLAN, intended for the RENHAI cruisers and LUYANG III MOD destroyers and possibly the YUSHEN LHAs. The Z-20F is similar to the U.S. Navy's SH-60 and will provide significant improvements in ASW capabilities over the smaller Z-9 and Ka-28 helicopters the PLAN currently operates. The Z-20F will also complement the larger Z-18Fs that operate from the PLAN's aircraft carriers.

Land Based Aircraft. The PLAN is in the process of replacing its older variant H-6 bombers in 2019 with the H-6J, a naval variant of the H-6K operated by the PLAAF. This new and larger advanced maritime strike bomber has six weapons pylons instead of four, advanced avionics, and upgraded engines, and the H-6J can employ the supersonic YJ-12 ASCM (250NM, 460KM). In 2020 PLAAF H-6Ks were also photographed carrying YJ-12s, significantly increasing the number of bombers available to the PLA for long-range maritime strike missions.

The PLAN operates a diverse inventory of fixed-wing special mission aircraft for maritime patrol and airborne early warning aircraft including many of the same variants operated by the PLAAF. However, the PLAN has also fielded a variant of the Y-9 for anti-submarine warfare and maritime patrol. The new aircraft is equipped with a magnetic anomaly detector boom, similar to that of the U.S. Navy's P-3. This Y-9 ASW variant is equipped with surface-search radar mounted under the nose as well as multiple-blade antennas on the fuselage, probably for electronic surveillance. A small electro-optical (EO)/ infrared turret is located just behind the nose wheel, and this variant is equipped with an internal weapons bay in front of the main landing gear.

Auxiliary Ships. The PLAN continues to build a large number of seagoing auxiliary and support ships, including intelligence collection ships (AGI), ocean surveillance ships (AGOS), fleet replenishment oilers (AOR), hospital ships, submarine salvage and rescue ships, and various other specialized units. Additionally, China's first domestically built polar icebreaker, XUELONG 2, became operational in 2019. The ship is operated by the Polar Research Institute of the State Oceanic Administration. In May 2021, XUELONG 2 completed the PRC's 37th research mission to Antarctica and in the second half of 2021, the PRC's 12th research mission to the Arctic.

PLAN Marine Corps (PLANMC). The PLANMC is still in the process of completing expansion requirements set forth by the CMC under PLA reform in 2016. Serving as the PLAN land combat arm, the PLANMC continued to evolve throughout 2021 and is receiving equipment and training necessary to become the PLA's preeminent expeditionary force, as directed by Xi Jinping. All six PLANMC maneuver brigades have achieved initial operating capability (IOC); three of the brigades are assessed to be fully mission capable. Two other PLANMC brigades – the aviation brigade and the special operations brigade, are IOC and Full Operational Capability (FOC), respectively. The aviation brigade will likely not achieve FOC status until at least 2025 and likely beyond, based on the current pace the brigade is receiving new helicopters, fully trained flight crews, and support equipment. The FOC aviation brigade will most likely contain a mix of heavy-lift, medium-lift, attack, and multi-purpose helicopters capable of operating on land and at sea to support all aspects of PLANMC operations. Such operations include, but are not limited to humanitarian aid/disaster relief, force protection, counterterrorism, amphibious assault, and combat operations ashore, either in support of large-scale PLA operations or as an expeditionary force overseas.

On December 30th, 2021, Lieutenant General Kong Jun, previously the PLANMC commander, was identified as the Eastern Theater Command Army commander. The new PLANMC commander is Major General Zhu Chuansheng. Major General Zhu also came from the PLAA and has a background in amphibious operations as the deputy commander of the 41st Group Army. It is likely that Major General Zhu will see the PLANMC through its reform and expansion, likely by 2027. The new commander will lead a PLANMC of over 30,000 marines. This number could increase to closer to 40,000 by 2027, depending on whether

current estimates of the number of marines in each combat brigade and the overall size of the aviation brigade remain accurate. The top end of PLANMC personnel strength is not likely to go higher than 40,000 marines, of which less than one-third will be conscripts. The majority of PLANMC marines will likely be non-commissioned officers with at least the equivalent of a high school diploma; many marines will likely be college-educated.

The PLANMC's roles and missions principally include defending PLA bases in mainland China, the South China Sea and abroad, conducting amphibious operations to seize and defend small reef and island outposts, and conducting non-war military activities (NWMA). Although the PLANMC has traditionally focused on its task to assault and defend small islands in the South China Sea, more recently its focus has grown to include expeditionary operations beyond the First Island Chain. The PLANMC's roles under NWMA support the PRC's efforts to protect its overseas interests including resources, infrastructure, and citizens abroad.

The PLANMC has increased the size of its force in Djibouti from approximately 250 marines in 2017 to 400 marines in 2022, including a new special forces contingent. The PLANMC also embarks a contingent of marines with the PLAN's Gulf of Aden counterpiracy-focused naval escort task force that supports China's trade interests. Additionally, the PLANMC supports the PRC's military diplomacy. For example, they have trained with Thai, Pakistani, Saudi, South African, and Djiboutian forces.

The PLANMC has begun to train on the PLAN's first amphibious helicopter assault ship (LHA), likely as part of the vessel's initial qualifications for operational status. PLAN LHAs will be capable of delivering PLANMC ground and air forces, to include amphibious and non-amphibious combat units – throughout East Asia, the Indian Ocean, and the western Pacific Ocean. Additionally, the PLANMC is almost certainly serving a force protection role on PLAN ships operating beyond the First Island Chain, capable of both repelling an assault from the sea and conducting visit, board, search and seizure (VBSS) operations to protect both PRC and international shipping in the Indian Ocean, the Philippine Sea, and the Pacific Ocean.

Despite the focus on expanding expeditionary missions, the PLANMC has not abandoned its amphibious mission. To the contrary, the PLANMC continues to conduct amphibious and expeditionary training in the Northern, Eastern, and Southern Theater Commands, to include training events in the Paracel Islands and the Spratly Islands in the South China Sea. The most significant aspect of PLANMC amphibious training is the continued–and almost certainly expanding–use of civilian roll-on/roll off (RORO) vessels to transport PLANMC combat forces during training events. This activity is significant because it demonstrates that the PLANMC now has a role as a second-echelon force in the PLA, providing theater commanders the flexibility to use the PLANMC in multiple roles as part of an amphibious campaign, specifically in a Taiwan scenario. This flexibility decreases the requirement to build additional PLAN amphibious ships to successfully assault Taiwan. This operational flexibility also provides operational and logistics units within the PLANMC the training and

proficiency to move between military and civilian vessels not just in a Taiwan scenario, but in any maritime environment where civilian transport vessels are available to the PLANMC and PLAN amphibious ships are not.



PEOPLE'S LIBERATION ARMY AIR FORCE (PLAAF) AND PLAN AVIATION

Key Takeaways

- The PLAAF and PLAN Aviation together constitute the largest aviation force in the Indo-Pacific region.
- The PLAAF is rapidly catching up to Western air forces. The PLAAF continues to modernize with the delivery of domestically built aircraft and a wide range of UASs.
- In October 2019, the PRC signaled the return of the airborne leg of its nuclear triad after the PLAAF publicly revealed the H-6N as its first nuclear-capable air-to-air refuelable bomber.

The People's Liberation Army Air Force (PLAAF) and PLAN Aviation together constitute the largest aviation forces in the region and the third largest in the world, with over 2,800 total aircraft (not including trainer variants or UASs) of which approximately 2,250 are combat aircraft (including fighters, strategic bombers, tactical bombers, multi-mission tactical, and attack aircraft). The PLAAF's role is to serve as a comprehensive strategic air force capable of long-range airpower projection. The PRC's 2019 defense white paper described the PLAAF's missions and tasks as transitioning from territorial air defense to "offensive and defensive operations." In 2021, General Chang Dingqiu assumed the post of PLAAF commander and continued to enact PLAAF reforms to improve the force's ability to accomplish joint warfighting tasks. The PLAAF is rapidly catching up to Western air forces. This trend is gradually eroding longstanding and significant U.S. military technical advantages vis-à-vis the PRC in the air domain.

The CMC's intent is to transform the PLAAF into a more effective and capable force that is proficient at conducting joint operations. The PLAAF is comprised of aviation, airborne, air defense, radar, electronic countermeasure, and communications forces. Amid the wide-ranging reorganization of the PLA, the PLAAF has reorganized into five Theater Command Air Forces, established at least six new air bases, and restructured previously subordinate regiments into brigades under the new bases by disbanding its fighter and fighter-bomber divisions.

Fighters. The PLAAF and PLAN Aviation continue to field greater numbers of fourth-generation aircraft (now more than 800 of 1,800 total fighters, not including trainers) and probably will become a majority fourth-generation force within the next several years. For fifth-generation fighters, the PLAAF has operationally fielded its new J-20 fifth-generation stealth fighter, and PRC social media revealed a new 2-seat variant of the J-20 in October 2021. The PLAAF is preparing upgrades for the J-20, which may include increasing the number of air-to-air missiles (AAMs) the fighter can carry in its low-observable

configuration, installing thrust-vectoring engine nozzles, and adding super cruise capability by installing higher-thrust indigenous WS-15 engines. Development continues on the smaller FC-31/J-31 for export or as a future naval fighter for the PLAN's next class of aircraft carriers.

Bombers. The PRC's bomber force is currently composed of H-6 Badger variants, which are domestically produced versions of the Soviet Tupolev Tu-16 (Badger) bomber. Despite the relative age of its bomber force, the PLAAF has worked to maintain and enhance the operational effectiveness of these aircraft. In recent years, the PRC has fielded greater numbers of the H-6K, a modernized H-6 variant that integrates standoff weapons and features more-efficient turbofan engines for extended-range. The H-6K can carry six LACMs, giving the PLA a long-range standoff precision strike capability that can range targets in the Second Island Chain from home airfields in mainland China. PLAN Aviation has traditionally fielded the H-6G to support maritime missions. More recently, PLAN Aviation has begun operating the H-6J, a maritime strike version of the H-6K with six weapons pylons for ASCMs. This aircraft carries six supersonic long-range YJ-12 ASCMs and can attack warships out to the Second Island Chain.

During the PRC's 70th anniversary parade in 2019, the PLAAF publicly revealed the H-6N, a derivative of the H-6K optimized for long-range strikes. The H-6N features a modified fuselage that allows it to carry externally an air-launched ballistic missile (ALBM) that may be nuclear capable. In October 2020, an H-6N was observed carrying an air-launched ballistic missile. The H-6N's air-to-air refueling capability also provides it greater reach over other H-6 variants that are not refuelable in air. In 2020, the PLAAF operationally fielded the H-6N bomber, providing a platform for the air component of the PRC's nascent nuclear triad. The H-6N-equipped unit very likely is developing tactics and procedures to conduct the PLAAF nuclear mission. In addition, the PLAAF is seeking to extend its power projection capability with the development of a new H-20 stealth strategic bomber, with official PRC state media stating that this new stealth bomber will have a nuclear mission in addition to filling conventional roles. The PLAAF is also developing new medium- and long-range stealth bombers to strike regional and global targets. PLAAF leaders publicly announced the program in 2016, however it may take more than a decade to develop this type of advanced bomber.

Special Mission Aircraft. In 2019, the PLAAF publicly debuted its new Y-9 communications jamming/electronic countermeasures aircraft (known as the GX-11). This aircraft is designed to disrupt an adversary's battlespace awareness at long ranges. The PLA can conduct air-to-air refueling operations to extend the ranges of its fighter and bomber aircraft equipped with refueling probes using the H-6U, a modified tanker variant of the H-6 bomber, as well as a small number of larger IL-78 Midas. In addition, the PRC is developing a tanker variant of its Y-20 heavy-lift transport, which will enable the PLAAF to expand its tanker fleet and improve the PLAAF's ability to operate beyond the First Island Chain from bases in mainland China.

Production and deliveries of the KJ-500—the PRC's most advanced airborne early warning and control (AEW&C) aircraft—continued at a rapid pace, joining earlier KJ-2000 Mainring

and KJ-200 Moth variants. These aircraft amplify PLAAF's ability to detect, track, and target threats in varying conditions, in larger volumes, and at greater distances. It also extends the range of the PLA's integrated air defense system (IADS) network. Furthermore, China has produced at least one KJ-500 with an aerial refueling probe, which will improve the aircraft's ability to provide persistent AEW&C coverage.

The PRC's aviation industry continues to advance with deliveries of its domestic Y-20 large transport aircraft and completion of the world's largest seaplane, the AG600. These transports will supplement and eventually replace the PRC's small fleet of strategic airlift assets, which to date, consists of a limited number of Russian-made IL-76 aircraft. These large transports are intended to support airborne C2, logistics, paradrop, aerial refueling, and strategic reconnaissance operations as well as HA/DR missions.

Uncrewed Aerial Systems (UASs). China continues their comprehensive UAS modernization efforts, highlighted by the routine appearance of ever more sophisticated UASs across theater and echelon levels. The last three years have seen several key milestones. These include the airshow display and operational appearance of the Xianglong jet powered UAS, as well as the unveiling of both the supersonic WZ-8 UAS and a redesigned version of the GJ-11 stealth uncrewed combat aerial vehicle (UCAV). The PLA also continues the maritime use of ISR UASs, featuring both the venerable BZK-005 and the newer TW-328/TB001. China is also expanding the applications of large UASs, demonstrating uses including disaster communications, anti-submarine roles, firefighting, and weather modification. Advanced small UASs are increasingly appearing in both military and civilian applications, with the PRC industry remaining a key exporter of UAS and components of all sizes.

In addition to maturing their current capabilities, China is also signaling its efforts in next generation capabilities. Air and trade shows are displaying growing numbers of autonomous and teaming systems, including for combat applications. In these concepts, PRC developers are demonstrating an interest in additional growth beyond ISR and EW into both air-to-air and air-to-ground combat, with a substantial amount of development displaying efforts to produce swarming capability for operational applications.

Air and Missile Defense. The PLAAF possesses one of the largest forces of advanced long-range SAM systems in the world, composed of Russian-sourced SA-20 (S-300) battalions and domestically produced CSA-9 (HQ-9) and follow-on HQ-9b battalions. To improve its strategic long-range air defenses, the PRC has acquired the SA-21 (S-400) SAM system from Russia. The PRC is also developing its indigenous CH-AB-X-02 (HQ-19), which will likely have a ballistic missile defense (BMD) capability. China is also developing kinetic-kill vehicle technology to field a mid-course interceptor, which will form the upper layer of a multi-tiered missile defense. The PLA conducted a test of a land-based mid-course interceptor on February 4, 2021.

PLAAF Airborne Corps. The PLAAF Airborne Corps commands six airborne combined-arms brigades, a SOF brigade, an operational support brigade, an aviation transport brigade, a training base, and a new training brigade. The six combined arms brigades consist of three airborne infantry, one air assault, one wheeled airborne mechanized (wheeled air droppable armored vehicles), and one tracked airborne mechanized (tracked air droppable armored vehicles).

Each airborne combined-arms brigade typically commands four combined-arms battalions, an artillery battalion, a reconnaissance and pathfinder battalion, an operations support battalion, and a service support battalion, and possibly a transportation battalion.

Airborne units conducted significant joint training events in 2021. The PLAAF Airborne Corps participated in the ZAPAD/INTERACTION-2021 exercise held in western China, which included paradrops from Y-20 aircraft and joint training with Russian military forces. PLAAF Airborne Corps also trained in 2021 for core strategic missions such as long range insertion, and seizure and control of key locations. In October, the PLAAF Airborne Corps conducted joint training with the PLAN Marine Corps off southern Hainan Island, in an effort to further their ability to execute joint force projection. Additionally, the PLAAF Airborne Corps used simulation technology, including virtual reality parachute simulators to improve effectiveness of parachute training.

Major Aviation Units



PEOPLE'S LIBERATION ARMY ROCKET FORCE (PLARF)

Key Takeaways

- The PLARF is advancing its long-term modernization plans to enhance its strategic deterrence capabilities.
- In 2021, the PLARF launched approximately 135 ballistic missiles for testing and training. This was more than the rest of the world combined excluding ballistic missile employment in conflict zones.
- The PLARF continues to grow its inventory of DF-26 intermediate-range ballistic missiles (IRBMs), which are capable of conducting both conventional and nuclear precision strikes against ground targets as well as conventional strikes against naval targets.
- The PRC is developing new intercontinental ballistic missiles (ICBMs) that will significantly improve its nuclear-capable missile forces and will require increased nuclear warhead production, partially due to the introduction of multiple independently targetable reentry vehicle (MIRV) capabilities. In 2021, the PRC continued building three solid-fueled ICBM silo fields, which will cumulatively contain at least 300 new ICBM silos.

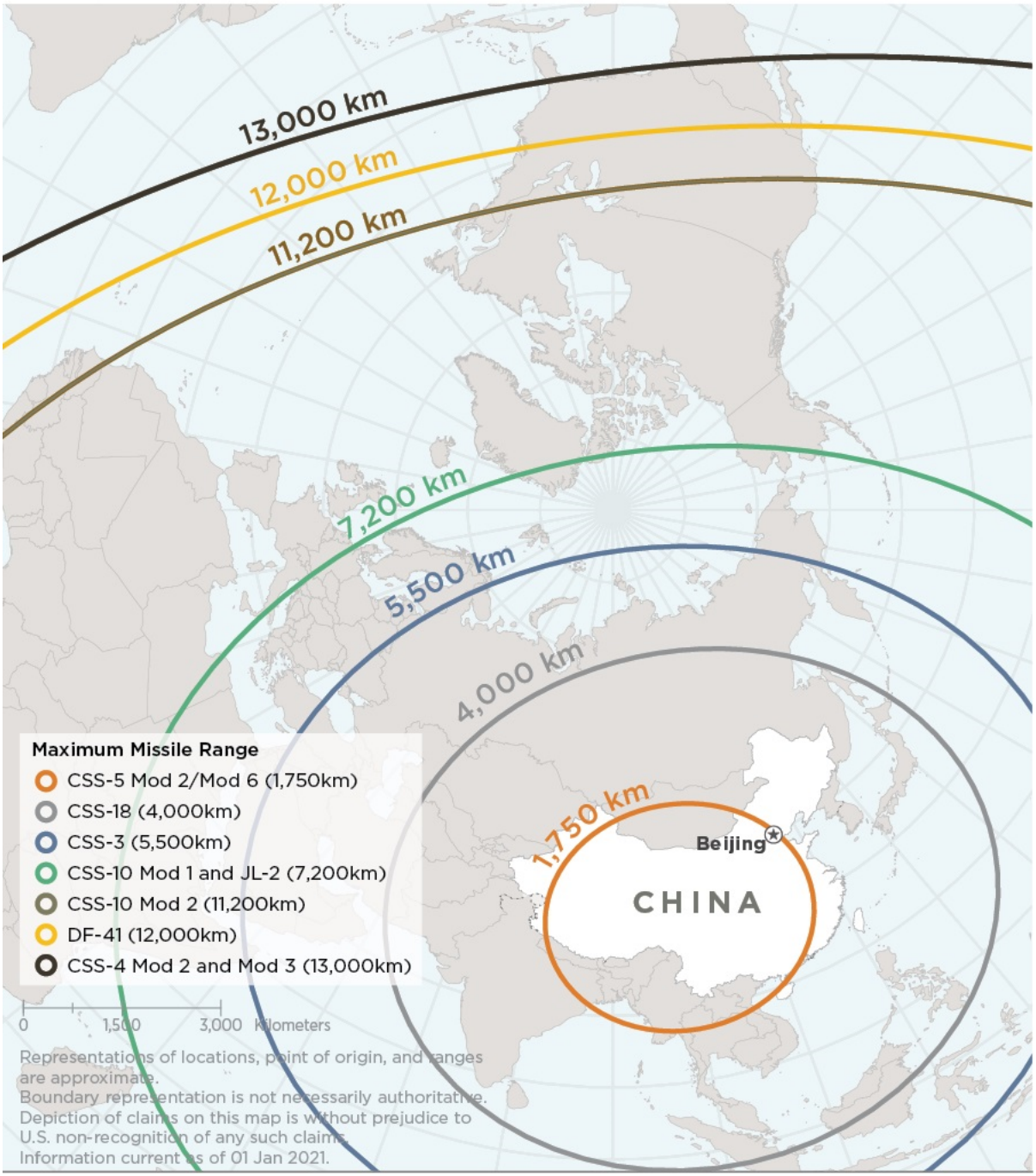
The PLA Rocket Force (PLARF) organizes, mans, trains, and equips the PRC's strategic land-based nuclear and conventional missile forces and associated support forces and missile bases. The PLARF is a critical component of the PRC's nuclear deterrence strategy and its strategy to deter and counter third-party intervention in regional conflicts. According to the PRC's 2019 defense white paper, the PLARF is working towards "enhancing its credible and reliable capabilities of nuclear deterrence and counterattack, strengthening intermediate and long-range precision strike forces, and enhancing strategic counter-balance capability, so as to build a strong and modernized rocket force.

The PLARF fields a variety of conventional mobile ground-launched short-, medium-, and intermediate-range ballistic missiles and ground-launched cruise missiles. The PLARF's ground-based missile forces complement the air and sea-based precision strike capabilities of the PLAAF and PLAN. The PLARF's conventional missile forces includes the CSS-6 (DF-15) short-range ballistic missile (SRBM) (range 725-850 km); the CSS-7 (DF-11) SRBM (600 km); the CSS-11 (DF-16) SRBM (more than 700 km); the land-attack and anti-ship variants of the CSS-5 (DF-21) medium-range ballistic missile (MRBM) (approximately 1,500 km); the hypersonic glide vehicle capable DF-17 MRBM; the DF-26 IRBM (approximately 3,000 km); the CJ-10 (DH-10) ground-launched cruise missile (GLCM) (approximately 1,500 km); and the CJ-100 (DF-100) GLCM (approximately 2,000 km). The PLARF's conventionally armed CSS-5 Mod 5 (DF-21D) ASBM variant gives the PLA the capability to conduct long-range precision strikes against ships, including aircraft carriers, out to the Western Pacific

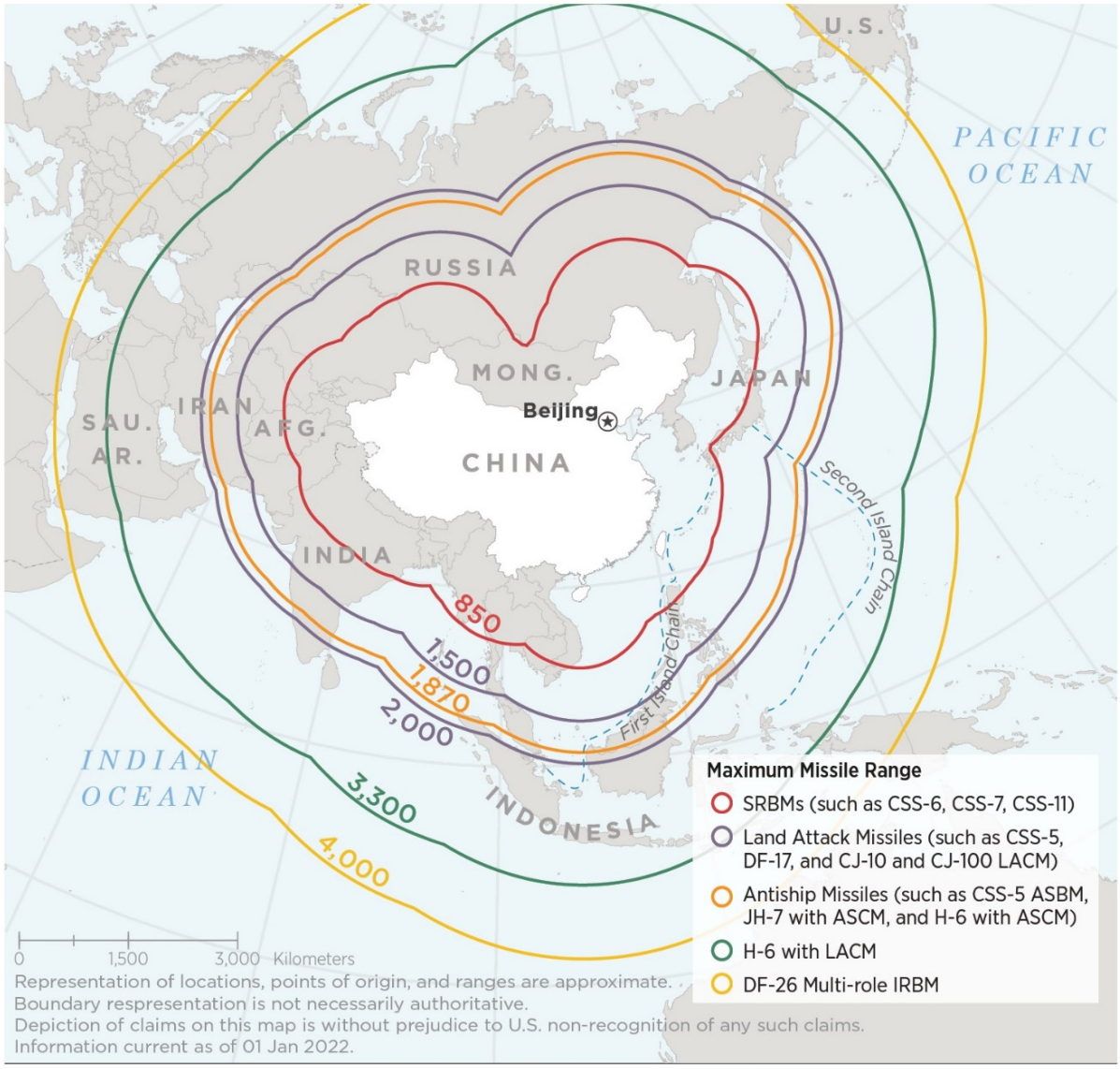
from mainland China. The DF-21D has a range exceeding 1,500 km, is fitted with a maneuverable reentry vehicle (MaRV), and is reportedly capable of rapidly reloading in the field. The PLARF continues to grow its inventory of DF-26 IRBMs, which it first revealed in 2015 and fielded in 2016. The multi-role DF-26 is designed to rapidly swap conventional and nuclear warheads and is capable of conducting precision land-attack and anti-ship strikes in the Western Pacific, the Indian Ocean, and the South China Sea from mainland China. In 2020, China fired anti-ship ballistic missiles against a moving target in the South China Sea. The PLARF is developing and testing several new variants of theater-range missiles and developing capabilities and methods to counter adversary ballistic missile defense (BMD) systems. In 2021, the PLARF launched approximately 135 ballistic missiles for testing and training, more than the rest of the world combined excluding ballistic missile employment in conflict zones. The DF-17 passed several tests successfully and is deployed operationally. While the DF-17 is primarily a conventional platform, it may be equipped with nuclear warheads. In 2020, a PRC-based military expert described the primary purpose of the DF-17 as striking foreign military bases and fleets in the Western Pacific.

The PLARF is developing intercontinental ballistic missiles (ICBMs) that will significantly improve its nuclear-capable missile forces with more survivable delivery systems, and will require increased nuclear warhead production, partially due to the introduction of multiple independently targetable reentry vehicle (MIRV) capabilities. The PRC appears to be doubling the numbers of launchers in some ICBM units. The PRC's ICBM arsenal consists of approximately 300 ICBMs, including fixed and mobile launchers capable of launching unitary and multiple reentry vehicles. China's fixed ICBMs consist of the shorter range CSS-3 (DF-4), as well as the silo-based CSS-4 Mod 2 (DF-5A) and MIRV-equipped Mod 3 (DF-5B), which is capable of carrying up to five MIRVs. PRC media indicates a follow-on DF-5C may be in development. The solid-fueled, road-mobile CSS-10 class and CSS-20 (DF-41) ICBMs complement this force. The CSS-10 Mod 2 (DF-31A), with a range in excess of 11,000 km, can reach most locations within the continental United States. PRC media reports suggest a DF-31B might also be in development. The DF-41 ICBM has been operationally deployed with commentary during the 2019 parade noting that two brigades existed for the system. The PRC appears to be considering additional DF-41 launch options, including rail-mobile and silo basing. The PRC is building multiple ICBM silo's intended to support the land-based component of the PRC's nuclear triad. Additionally, sources indicate a "long-range" DF-27 ballistic missile is in development. Official PRC military writings indicates this range-class spans 5,000-8,000km, which means the DF-27 could be a new IRBM or ICBM. Additionally, on 27 July 2021, China conducted the first fractional orbital launch of an ICBM with an HGV. The HGV flew around the world and impacted inside China. This demonstrated the greatest distance flown (~40,000 km) and longest flight time (~100+ minutes) of any PRC land-attack weapons system to date. According to senior U.S. military officials, the HGV did not strike its target, but came close.

Nuclear Ballistic Missiles



Conventional Strike



STRATEGIC SUPPORT FORCE (SSF)

Key Takeaways

- The PLA Strategic Support Force (SSF) is a theater command-level organization established to centralize the PLA's strategic space, cyberspace, electronic, information, communications, and psychological warfare missions and capabilities.
- The SSF's Network Systems Department is responsible for information warfare with an integrated mission set that includes cyberspace warfare, technical reconnaissance, electronic warfare, and psychological warfare.

- The PRC continues to develop counterspace capabilities—including direct-ascent anti-satellite missiles, co-orbital satellites, electronic warfare, and directed-energy systems—that can contest or deny an adversary's access to and operations in the space domain during a crisis or conflict.

- The PRC's space enterprise continues to mature rapidly and Beijing has devoted significant resources to growing all aspects of its space program, from military space applications to civil applications such as profit-generating launches, scientific endeavors, and space exploration. SSF works with civilian organizations, such as universities and research organization, to integrate civilian support to military efforts.

The PLA Strategic Support Force (SSF) was established in 2015 to centralize the PLA's strategic space, cyberspace, electronic, and psychological warfare missions and capabilities. The SSF reports directly to the CMC and supports the entire PLA with its capabilities. The PRC's 2019 Defense White Paper described the SSF's modernization goals as "seeking to achieve big development strides in key areas and accelerate the integrated development of new-type combat forces, so as to build a strong and modernized strategic support force."

The SSF oversees two deputy theater command-level departments: the Space Systems Department responsible for military space operations, and the Network Systems Department responsible for information operations (IO), which includes technical reconnaissance, EW, cyberspace warfare, and psychological operations. At the headquarters level, the SSF has a four-department administrative structure that includes the Staff, Equipment, Political Work, and Logistics Departments. As a strategic organization, the SSF is directly subordinate to the CMC, but some of its subordinate units may report to the theater commands in wartime. The SSF provides information support derived from space-, cyber-, and terrestrial-based means to all PLA services and the five joint theater commands. Civilian reserve and militia units – typically comprised of personnel from the Ministry of Information and Industry Technology, Ministry of Public Security, Ministry of State Security, and academic institutions – augment SSF cyberspace operations during peacetime and are organized into specialized units during wartime to support network defense operations.

In 2021, General Ju Qiansheng was promoted to SSF commander. He previously served as commander of the Network Systems Department. Lt. Gen. Shang Hong was the commander of the Space Systems in 2021. He previously served as the chief of staff for the former General Armaments Department, Chairman of the China Satellite Launch and Tracking General, and commander of the Jiuquan Satellite Launch center. The leader of the Network Systems Department is unknown.

The SSF participates in joint exercises and training throughout China, including possible national strategic joint exercises. For example, since its creation, the SSF has participated in joint far seas training exercises with the PLA Navy, Air Force, and Rocket Force concentrated on advancing joint operations and informatized warfare capabilities. These exercises allow

the SSF to assess and improve its capabilities to support joint operations and better enable the PLA to project power into the East and South China seas.

Network Systems Department. The SSF Network Systems Department is responsible for information warfare with a mission set that includes cyberspace warfare, technical reconnaissance, electronic warfare (EW), and psychological warfare. By placing these missions under the same organizational umbrella, the PRC seeks to remedy the operational coordination challenges that hindered information sharing under the PLA's pre-reform organizational structure. The integration of cyberspace and EW elements under one organization was a crucial step towards realizing the operational concept of integrated network and electronic warfare that the PLA has envisioned since the early 2000s. The Network Systems Department operates five theater–aligned technical reconnaissance bases, a number of signals intelligence bureaus, and several research institutes. The Network Systems Department provides intelligence support to the theater commands by leveraging a diverse suite of ground-based technical collection assets to provide a common operating picture to geographically dispersed operational units.

> ***The SSF and the "Three Warfares" Concept*:** The SSF Network Systems Department, performs missions and tasks associated with the PLA's concept of "Three Warfares," which comprises psychological warfare, public opinion warfare, and legal warfare. This department is the only publicly known organization in the PLA that performs psychological warfare operations. See 'Special Topic: PRC Views of Information and Information Dominance' for more on PLA views on information warfare, including psychological warfare.

The SSF's strategic space, cyberspace, and psychological warfare capabilities and missions are not bound by geographic constraints and can be used independently or to enable and support PLA global power projection operations. The SSF's information support role involves centralizing technical intelligence collection and management, which provides strategic intelligence support to the theater commands, enables power projection, supports strategic defense in the space and nuclear domains, and enables joint operations. The PRC continues to develop a variety of counterspace capabilities designed to limit or prevent an adversary's use of space-based assets during crisis or conflict. In addition to the development of directed-energy weapons and satellite jammers, the PLA has an operational ground-based anti-satellite (ASAT) missile intended to target low-Earth orbit satellites, and the PRC probably intends to pursue additional ASAT weapons capable of destroying satellites up to geosynchronous Earth orbit.

Cyberspace Activities Directed Against the U.S. Department of Defense (DoD)

PRC-based intrusions continued to target computer systems around the world, including those owned by the U.S. Government, throughout 2021. These and past intrusions focus on accessing networks and extracting information. The PRC uses its cyberspace capabilities to not only support intelligence collection against U.S. political, economic, academic, and military targets, but also to exfiltrate sensitive information from the defense industrial base to gain military advantage and possibly for cyberattack preparations. The targeted information can benefit the PRC's defense high-technology industries, support the PRC's military modernization, provide China's leadership with insights into U.S. plans and intentions, and enable diplomatic negotiations. Additionally, targeted information could enable their cyberspace forces to build an operational picture of U.S. defense networks, military disposition, logistics, and related military capabilities that could be exploited prior to or during a crisis. The access and skills required for these intrusions are similar to those necessary to conduct cyberspace operations in an attempt to deter, delay, disrupt, and degrade DoD operations prior to or during a conflict. In aggregate, these cyber-enabled campaigns threaten to erode U.S. military advantages and imperil the infrastructure and prosperity on which those advantages rely.

SSF Space Systems Department

Space and Counterspace Trends. The PRC's space enterprise continues to mature rapidly and Beijing has devoted significant economic and technological resources to growing all aspects of its space program, from military space applications to civil applications such as profit-generating launches, human spaceflight, scientific endeavors, as well as lunar and Martian exploration missions. Space has been considered a distinct domain of warfare since at least 2015, and the PLA expects space to play an important role in future conflicts by enabling long-range precision strikes and in denying other militaries the use of overhead command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems. The PRC probably will continue to develop the capabilities for use against satellites in orbit to degrade and deny adversary space capabilities.

Space and Counterspace Organizations. The SSF Space Systems Department is responsible for nearly all PLA space operations, including space launch and support; space surveillance; space information support; space telemetry, tracking, and control; and space warfare. The Space System Department operates at least eight bases, including those whose core missions are the launch, tracking, R&D, and operation of the satellites vital to China's overhead C4ISR architecture. The SSF operates tracking, telemetry, and command stations in several locations worldwide. The SSD also operates Yuan Wang space support ships that track satellite and intercontinental ballistic missile (ICBM) launches.

China's space program comprises organizations in the military, political, defense-industrial, and commercial sectors. The PLA historically has managed China's space program and continues to support both civilian and military interests. This includes strengthening and investing in its science and technology sector, growing international partnerships, and improving China's capabilities in space-based ISR, SATCOM, satellite navigation, human spaceflight, and robotic space exploration. Although state-owned enterprises are China's primary civilian and military space contractors, China is placing greater emphasis on decentralizing and diversifying its space industry to increase competition.

The SSD's China Launch and Tracking Control (CLTC) operates all four launch sites, in addition to Yuan Wang space support ships, two major satellite control centers—Xian Satellite Control Center (XSCC) and the BACC—and the PLA telemetry, tracking, and control (TT&C) system for all Chinese satellites.

China leads the Asia-Pacific Space Cooperation Organization (APSCO), a multilateral organization with rotating leadership whose members include China, Bangladesh, Iran, Mongolia, Pakistan, Peru, Thailand, and Turkey, with Egypt, Indonesia, and Mexico as associate members. APSCO oversees a space surveillance project known as the Asia-Pacific Ground-Based Optical Space Object Observation System (APOSOS). As part of the project, China provided to Iran, Pakistan, and Peru 15-cm telescopes that are able to track objects in LEO and GEO. All tasking information and subsequent observation data collected is funneled through the Chinese Academy of Science's National Astronomical Observatory of China. APOSOS has near full coverage of LEO and GEO. The organization is planning to improve optical system capabilities, coverage, and redundancy as well as data sharing networks.

China utilizes locations worldwide to aid in TT&C of space missions both around the Earth as well as in cislunar and deep space. There are ground stations in Argentina, Brazil, Chile, Ethiopia, France, Greenland, Kenya, Kiribati, Namibia, Norway (Svalbard), Pakistan, South Africa, and Spain. There are also four sites in Antarctica that can provide similar support as well as a BeiDou reference station: Great Wall, Kunlun, Taishan, and Zhongshan Stations.

The State Council's State Administration for Science, Technology, and Industry for National Defense (SASTIND) is the primary civilian organization that coordinates and manages China's space activities, including allocating space research and development funds. It also maintains a working relationship with the PLA organization that oversees China's military acquisitions. SASTIND guides and establishes policies for state-owned entities conducting China's space activities.

The China National Space Administration (CNSA), subordinate to SASTIND, serves as the public face of China's civilian space efforts. China is increasingly using CNSA efforts to bolster relationships with countries around the world, providing opportunities to cooperate on space issues. China had more than a hundred cooperative space-related agreements with more than three dozen countries and four international organizations.

Many space technologies can serve a civilian and military purpose, and China emphasizes "military-civil fusion"—a phrase used, in part, to refer to the use of dual-use technologies, policies, and organizations for military benefit. The SSF works with civilian organizations like universities and research organizations to incorporate civilian support to military efforts since there is an already high demand for aerospace talent and competition for finite human resources. China's commercial space sector features partially state-owned enterprises such as Zhuhai Orbita, Expace, Galactic Energy, and OK-Space for remote sensing, launch, and communication services.

International Cooperation. In 2021, China launched the China-France Oceanography Satellite, China-Brazil Earth Resources Satellite 04A, Ethiopian Remote-Sensing Satellite, and Student Small Satellites (SSS) for the Asia-Pacific Space Cooperation Organization (APSCO). Beijing also completed the in-orbit delivery of the Pakistan Remote-Sensing Satellite (PRSS-1), Venezuelan Remote-Sensing Satellite (VRSS-2), Sudan Remote-Sensing Satellite (SRSS-1), and the Algerian Communications Satellite (Alcomsat-1). China has provided satellite carrying or launching services for countries including Saudi Arabia, Pakistan, Argentina, Brazil, Canada, Laos, and Luxembourg. China has built satellite data receiving stations with countries including Bolivia, Indonesia, Namibia, Thailand and South Africa.

Space and Counterspace Operations. The PLA views space superiority, as well as the ability to control the space-enabled information sphere and to deny adversaries their own space-based information gathering and communication capabilities, as critical components of modern "informatized warfare." China's perceptions of the importance of space-enabled operations to the United States and its allies has shaped integral components of PLA military planning and campaigns. In addition, space is a critical enabler of beyond-line-of-sight operations for deployed PLA forces. The PLA probably views counterspace operations as a means to deter and counter a U.S. intervention during a regional military conflict. Moreover, PRC defense academics suggest that reconnaissance, communication, navigation, and early warning satellites could be among the targets of attacks designed to "blind and deafen the enemy."

The PRC seeks to enhance the PLA's C2 for joint operations and establish a real-time surveillance, reconnaissance, and warning system, and it is increasing the number and capabilities of its space systems, including communications and intelligence satellites, as well as the BeiDou navigation satellite system. These capabilities allow the PLA to maintain situational awareness of potential flashpoints as well as monitor, track, and target adversary forces. Additionally, the PRC continues to develop direct ascent, co-orbital, electronic warfare, and directed energy capabilities that can contest or deny an adversary's access to and operations in the space domain during a crisis or conflict. PLA writings indicate the purpose of these capabilities is to deter and counter the intervention of a third party during a military conflict.



JOINT LOGISTIC SUPPORT FORCE (JLSF)

Key Takeaway

- The JLSF is concentrating its efforts on improving joint strategic and campaign-level logistic efficiencies through training and integrating civilian products and services.
- The JLSF also had an active role coordinating with civilian entities to provide logistic support in response to the ongoing COVID-19 pandemic.

The PLA Joint Logistic Support Force (JLSF) provides integrated joint logistics support for the PLA. The JLSF is directly subordinate to the CMC and is central to China's efforts to build a joint, efficient "combat-oriented modern logistics system," which Beijing views as essential for modern warfare. The JLSF works to modernize PLA joint strategic- and campaign-level logistics by overseeing theater wide supply operations, establishing and coordinating support relationships among the PLA service logistics elements, conducting joint logistics exercises with the PLA services, and integrating civilian logistics resources into military operations. The JLSF conducts exercises of various size, scope, and complexity to improve the PLA's ability to conduct joint logistics operations.

The JLSF is headquartered at Wuhan Joint Logistics Support Base. It operates five joint logistics support centers (JLSCs) aligned with each of the theater commands that are intended to streamline logistics support to the PLA. Under the JLSCs' control are units that provide materiel support to the PLA and joint logistics brigades (JLSBs), who focus exclusively on providing mobile logistic support to combat operations.

The JLSF provides the PLA with joint strategic- and campaign-level logistics, enabling the PLA to conduct large-scale operations. Force elements of the JLSF include weapons and ammunition, warehousing, medical services, transport, fuel, engineering and construction management, reserve equipment, and procurement support. During peacetime, the JLSF has authority over the JLSCs' operations and activities; during wartime, theater commands possibly would assume control of their designated JLSC.

The JLSF routinely integrates civilian logistics resources and equipment into military operations and exercises, a known PLA practice to leverage China's civilian products, services and transportation, such as aircraft and buses, to improve resupply and move military personnel and equipment more rapidly. The JLSF continues to play a lead role working with the civilian sector to provide logistic support in response to the continuing COVID-19 outbreak.

PLA Training to Improve Readiness

The CMC sought to improve PLA combat readiness, interoperability, and training through the 14th Five-Year Plan and reinforced these priorities through military training mobilization orders and senior leadership guidance. In 2021, PLA training focused on reconnaissance, rapid mobilization, disaster relief, medical response, and joint warfare in a realistic combat environment. PLA training increasingly integrated non-military government agencies and militias. There was growing emphasis on incorporating the militia and PLA Reserve Forces into PLA joint training and operations.

Throughout 2021, the PLA sustained, and in some cases increased, the frequency, scale, and duration of joint exercises. The COVID-19 pandemic likely did not significantly impact the PLA's ability to conduct joint exercises. The PLA successfully completed at least thirteen

bilateral and multinational exercises conducting naval drills, maritime patrols, and humanitarian assistance and disaster relief efforts. Although the PLA has improved some combat proficiencies, the force as a whole still struggles with jointness, command and control, and professional military education, especially among the mid-level officers.

PLA RESERVES, PARAMILITARY & MILITIA

Key Takeaway

- Interoperability and integration between the PLA, its reserve components, and the PRC's paramilitary forces continues to grow in scale and sophistication, including the coordination between the PLAN, the China Coast Guard (CCG), and the People's Armed Forces Maritime Militia (PAFMM).

The PRC's Internal Security Forces

The PRC's internal security forces consist primarily of the Ministry of Public Security (MPS), the Ministry of State Security (MSS), the People's Armed Police (PAP), the People's Liberation Army (PLA), and the militia. The CCP relies on these forces to address challenges ranging from protests over political, social, environmental, or economic problems, to terrorism and natural disasters. In 2021, the PRC deployed more than 100,000 PLA, PAP, and militia personnel for disaster relief following devastating floods in Henan Province.

Ministry of Public Security (MPS). The MPS leads the PRC's civilian national police, which serves as the front force for public order. The key mission of the MPS is domestic law enforcement and the "maintenance of social security and order" with duties including anti-rioting and anti-terrorism.

Ministry of State Security (MSS). The MSS is the PRC's main civilian intelligence and counterintelligence service. MSS operations include but are not limited to: protect the PRC's national security; conduct counterintelligence; combating foreign espionage; and investigate organizations or individuals inside the PRC who carry out or direct, support, or aid other people perceived to threaten national security. On April26th 2021, the PRC enacted a new counter espionage law permitting the MSS authority to identify companies and organizations deemed susceptible to foreign infiltration or influence and require these institutes to implement measures to prevent foreign infiltration.

People's Armed Police (PAP). The PAP is a paramilitary component of the PRC's armed forces. Its primary missions include internal security, maritime security, and augmentation to the PLA during conflict. As part of a security structures reorganization in 2018, the CMC centralized control of the PAP. The same reform also subordinated the CCG to the PAP.

People's Liberation Army (PLA). In addition to its national defense mission, the PLA has formal and informal roles in the PRC's internal security. As the principal armed wing of the CCP, the PLA is the ultimate guarantor of the CCP's survival, and supports other internal security forces as necessary. The 2015 white paper, *China's Military Strategy*, outlined eight PLA strategic tasks: safeguard the sovereignty of China's territory; safeguard national unification; safeguard China's interests in new domains, such as space and cyberspace; safeguard China's overseas interests; maintain strategic deterrence; participate in international security cooperation; maintain China's political security and social stability; and conduct emergency rescue, disaster relief, and "rights and interest protection" missions.

Militia. PRC's militia is a force that can be mobilized for a variety of peace- and war-time missions and is distinct from the PLA's Reserve Force. The militia is organized by townships, administrative villages, urban sub-districts, and enterprises and institutions, and the missions may vary widely. In wartime, militia units assist the PLA with its military operations, conduct independent security operations, and provide support and manpower replacement to the PLA. During peacetime, the militia assists in humanitarian aid and disaster relief, supports military training, and maintains internal security. PRC's Military Service Law requires male citizens between 18 to 35 years of age who are fit for military service, excluding those already in active service, be enrolled into the militia. The militia is divided into two categories. The primary militia consists of former soldiers, personnel that have received military training, and personnel selected for military training that are under the age of 28, in good health, and politically reliable. The remainder of male citizens between 18 and 35 years of age are considered ordinary militia. The primary militia may recruit female citizens when necessary and the age limits can be waived under special circumstance. Local maritime militia forces, referred to by many western analysts as the People's Armed Forces Maritime Militia, perform tasks including safeguarding maritime claims, protecting fisheries, providing logistic support, search and rescue, and surveillance and reconnaissance, often in conjunction or coordination with the PLAN and the CCG.

People's Liberation Army Reserve Force. The PLA Reserve Force was founded in 1983 and professionalized throughout the 1990s and 2000s. On July 1, 2020, the PRC amended laws, regulations, and policies to bring the Reserve Force under the command of the Central Committee of the CCP and the CMC. The previous arrangement split control of the Reserve Force between the PLA and local Party committees. Motivations for the change include improving combat capability, facilitating cooperation with active-duty units, and upholding the CCP's absolute leadership over the military. Chinese sources often stated specifically that the reform would enhance reserve performance in Tibet and Xinjiang. Additionally, the PLA appears to have begun making a partial restructure towards using a PLAA reserve base system to continue to improve facilitation and support for active-duty units.

The PLA Reserve Force is comprised of approximately 510,000 personnel subordinate to the Army Reserve, Navy Reserve, Air Force Reserve, and Rocket Force Reserve. According to official Chinese media and journal articles, a small number of active duty cadre serve as a permanent backbone for the Reserve Force to enable the influx of reserve officers and soldiers when required. The 2020 Science of Military Strategy published by the PLA's National Defense University states the building of the reserve force is an important part of national defense construction and is the basic and strategic project to consolidate national defense. The primary mission of the reserves is to reinforce active-duty forces for national defense, with a secondary mission to aid in national disasters or maintaining social order. The Reserve Force should be prepared to effectively respond to a variety of emergencies and military threats, safeguard national sovereignty, security and development interests, and the core security of the country.

Reserve officers are selected from veteran PLA officers, local officials, PAP or militia officers, and other technical personnel. Reserve soldiers are selected from eligible PLA veterans, trained grass-roots militias, and other local or military specialty personnel. Some reserve soldiers also failed to meet active duty entry requirements and conduct remedial training in the reserves until they are able to join the active duty force.

Anecdotal evidence suggests that significant issues remain in the mobilization of reserve forces, including which equipment should be used, what level of government pays for the mobilization, and resistance from enterprises at the sudden requisition of their employees. Chinese documents state that Reserve Force equipment is predominately antiquated; one report stated that more than 70% of air defense artillery and artillery equipment is at or beyond its maximum service life. Some of the equipment is no longer manufactured and repair requires cannibalization.

The PLA Reserve Force also provides significant support to local areas after natural disasters. The PLA Reserve Force does not include militias, the Civil Air Defense, or myriad other groups (e.g. the People's Armed Police or the Xinjiang Production and Construction Corps (XPCC)).

People's Armed Police (PAP). The PAP is a component of the PRC's armed forces and an armed wing of the CCP with an estimated 660,000 personnel. In the 2020 National Defense University publication Science of Military Strategy, the primary responsibilities of the PAP include maintaining political, institutional and regime security, handling emergency rescue, counter-terrorism, air support, maritime rights protection, administrative law enforcement, and defense operations. The PAP is organized into three main parts: the Internal Security Corps, the Mobile Corps, and the China Coast Guard (CCG). The Internal Security Corps covers each of the PRC's provinces, provincial-level cities, and autonomous regions. There is not yet a reported permanent presence of the PAP in the Special Administrative Regions (SARs) of Hong Kong or Macao, but since 2019, the PAP maintains a rotational deployment in Hong Kong. The Mobile Corps is comprised of myriad PAP units placed to reinforce the

Internal Security Corps and provide flexibility in responding to internal security issues. Mobile Corps units are concentrated in the west and south (Xinjiang, Tibet, Sichuan, Yunnan, and Qinghai) as well as the major cities of Beijing and Shanghai. Xinjiang is a particular focus of the PAP due to PRC perceived separatist activity, as well as its proximity to areas of unrest in Central Asia. The China Coast Guard is covered in depth in the next section of this report.

Xi Jinping and the CCP leadership tasked the PAP with integrating themselves into the PLA's joint operation system. The PAP's main mission is internal security, but is increasingly focused on joint operations with the PLA and is developing capabilities for rapid response, mobility, and counterterrorism operations. The PAP also conducts training with foreign partners, including at least Uzbekistan, Kyrgyzstan, and Russia. Since at least 2016, PAP forces have likely operated in Tajikistan, patrolling the tri-border region connecting Tajikistan, Afghanistan, and the PRC.

In 2021, the PAP reportedly executed numerous emergency rescue and disaster response operations in response to heavy flooding and typhoons, as well as conducting counter-terrorism and opposing force training and exercises.

China Coast Guard (CCG). The CCG is subordinate to the PAP and is responsible for a wide range of maritime security missions, including defending the PRC's sovereignty claims; fisheries enforcement; combating smuggling, terrorism, and environmental crimes; as well as supporting international cooperation. In 2021, the Standing Committee of China's National People's Congress passed the Coast Guard Law which took effect on 1 February 2021. The legislation regulates the duties of the CCG, to include the use of force, and applies those duties to seas under the jurisdiction of the PRC. The law was met with concern by other regional countries that may perceive the law as an implicit threat to use force, especially as territorial disputes in the region continue.

The CCG's rapid expansion and modernization has made it the largest maritime law enforcement fleet in the world. Its newer vessels are larger and more capable than older vessels, allowing them to operate further off shore and remain on station longer. A 2019 academic study published by the U.S. Naval War College estimates the CCG has over 140 regional and oceangoing patrol vessels (of more than 1,000 tons displacement). Some of the vessels are former PLAN vessels, such as corvettes, transferred to the CCG and modified for CCG operations. The newer, larger vessels are equipped with helicopter facilities, high-capacity water cannons, interceptor boats, and guns ranging from 20 to 76 millimeters. In addition, the same academic study indicates the CCG operates more than 120 regional patrol combatants (500 to 999 tons), which can be used for limited offshore operations, and an additional 450 coastal patrol craft (100 to 499 tons).

China's Maritime Militia

Background & Missions. The People's Armed Forces Maritime Militia (PAFMM) is a subset of China's national militia, an armed reserve force of civilians available for mobilization that is ultimately subordinate to the Central Military Commission through the National Defense Mobilization Department. Throughout China, militia units organize around towns, villages, urban sub-districts, and enterprises, and vary widely in composition and mission.

PAFMM vessels train with and assist the People's Liberation Army Navy (PLAN) and the China Coast Guard (CCG) in tasks such as safeguarding maritime claims, surveillance and reconnaissance, fisheries protection, logistics support, and search and rescue. China employs the PAFMM in gray zone operations, or "low-intensity maritime rights protection struggles," at a level designed to frustrate effective response by the other parties involved. China employs PAFMM vessels to advance its disputed sovereignty claims, often amassing them in disputed areas throughout the South and East China Seas. In this manner, the PAFMM plays a major role in coercive activities to achieve China's political goals without fighting, and these operations are part of broader Chinese military theory that sees confrontational operations short of war as an effective means of accomplishing strategic objectives.

Operations. PAFMM units have been active for decades in maritime incidents and combat operations throughout China's near seas and in these incidents PAFMM vessels are often used to supplement CCG cutters at the forefront of the incident, giving the Chinese the capacity to outweigh and outlast rival claimants. In March of 2021, hundreds of Chinese militia vessels moored in Whitsun Reef, raising concerns the Chinese planned to seize another disputed feature in the Spratly Islands. Other notable incidents include standoffs with the Malaysian drill ship *West Capella* (2020), defense of China's HYSY-981 oil rig in waters disputed with Vietnam (2014), occupation of Scarborough Shoal (2012), and harassment of USNS *Impeccable* and *Howard O. Lorenzen* (2009 and 2014). Historically the maritime militia also participated in China's offshore island campaigns in the 1950s, the 1974 seizure of the Paracel Islands from South Vietnam, and the occupation of Mischief Reef in the Spratly Islands in 1994.

The PAFMM also protects and facilitates PRC fishing vessels operating in disputed waters. For example, from late December 2019 to mid-January 2020, a large fleet of over 50 PRC fishing vessels operated under the escort of multiple China Coast Guard patrol ships in Indonesian claimed waters northeast of the Natuna Islands. At least a portion of the PRC ships in this fishing fleet were affiliated with known traditional maritime militia units, including a maritime militia unit based out of Beihai City in Guangxi province. While most traditional maritime militia units operating in the South China Sea continue to originate from townships and ports on Hainan Island, Beihai is one of a number of increasingly prominent maritime militia units based out of provinces in the PRC. These mainland based maritime militia units routinely operate in the Spratly Islands and in the southern South China Sea, and their

operations in these areas are enabled by increased funding from the PRC government to improve their maritime capabilities and grow their ranks of personnel.

Capabilities. Through the National Defense Mobilization Department, Beijing subsidizes various local and provincial commercial organizations to operate PAFMM vessels to perform "official" missions on an ad hoc basis outside of their regular civilian commercial activities. PAFMM units employ marine industry workers, usually fishermen, as a supplement to the PLAN and the CCG. While retaining their day jobs, these mariners are organized and trained, often by the PLAN and the CCG, and can be activated on demand. Additionally, starting in 2015, the Sansha City Maritime Militia in the Paracel Islands has developed into a salaried full-time maritime militia force equipped with at least 84 purpose-built vessels armed with mast-mounted water cannons for spraying and reinforced steel hulls for ramming along with their own command center in the Paracel Islands. Lacking their normal fishing responsibilities, Sansha City Maritime Militia personnel, many of whom are former PLAN and CCG sailors, train for peacetime and wartime contingencies, often with light arms, and patrol regularly around disputed South China Sea features even during fishing moratoriums. Additionally, since 2014, China has built a new Spratly backbone fleet comprising at least 235 large fishing vessels, many longer than 50 meters and displacing more than 500 tons. These vessels were built under central direction from the Chinese government to operate in disputed areas south of twelve degrees latitude that China typically refers to as the "Spratly Waters," including the Spratly Islands and southern SCS. Spratly backbone vessels were built for prominent PAFMM units in Guangdong, Guangxi, and Hainan Provinces. For vessel owners not already affiliated with PAFMM units, joining the militia was a precondition for receiving government funding to build new Spratly backbone boats. As with the CCG and PLAN, new facilities in the Paracel and Spratly Islands enhance the PAFMM's ability to sustain operations in the South China Sea.

JOINT CAPABILITIES IN DEVELOPMENT

Key Takeaways

- The PLA is aggressively developing capabilities to provide options for the PRC to dissuade, deter, or, if ordered, defeat third-party intervention in the Asia-Pacific region.
- The PLA is also developing the capabilities to conduct military operations deeper into the Indo-Pacific region, and in some cases, globally.
- Although the PLA has undertaken important structural reforms to promote joint operations, the capability of the PLA to carry out joint operations in support of counter-intervention or joint campaigns outside the First Island Chain remains in its infancy.

Joint Capabilities for Counter-intervention

The PRC's counter-intervention strategy aims to restrict the United States from having a presence in China's immediate periphery and limit US access in the broader Asia-Pacific region. The PLA's anti-access/area-denial (A2/AD) capabilities are, to date, the most robust within the First Island Chain, although the PLA is increasingly able to project power into the Philippine Sea, and the PRC seeks to strengthen its capabilities to reach farther into the Pacific Ocean.

PLA ground, naval, air and rocket forces are increasingly capable of projecting power at greater distances from China. However, joint service training is still in its infancy and the PLA has demonstrated limited joint operational capabilities beyond the FIC. Instead, overseas activities are mostly conducted by single services and do not involve combat.

Beijing recognizes the importance of increasing military capabilities to achieve global security objectives and has encouraged the PLA to increase its operations beyond the Indo-Pacific. As detailed in China's 2015 and 2019 Defense White Papers, Beijing is primarily interested in developing these capabilities to protect Chinese maritime rights and commercial interests. However, the majority of PLA modernization and recent exercises remains focused on fighting and winning a regional conflict. As Beijing's economic interests expand in areas like Africa, Latin America, Central Asia, and the Middle East, we expect to see increased focus on expanding power projection operations globally.

Long-Range Precision Strike and Supporting ISR. PLA doctrinal writings state that precision attack in all warfare domains is critical in modern war. The PLA further notes that small elite forces using advanced weapons or capabilities can attain military effects that previously required large armies and much higher levels of damage and cost. Therefore, PLA writings state that precision weapons are not only force multipliers, but also a means of "war control" to prevent escalation. PLA documents further state that the range of vital political, economic, and military targets has grown as the advanced globalized economy develops, implying that growing PLA strike capabilities will attack an increasing array of targets, and thereby attaining international strategic effects by striking critical nodes of the global economy during a future conflict. The PRC's military modernization efforts have rapidly transformed the PLA's missile force. PLA writings frame logistics and power projection assets as potential vulnerabilities in modern warfare, which aligns with the PLA's expanding ability to conduct strikes against regional air bases, logistics and port facilities, communications, and other ground-based infrastructure.

U.S. bases in Guam are in range of a growing number of the PLA's ballistic and cruise missiles. In the future, LACMs will also likely be deployable on surface platforms like the RENHAI class guided-missile cruisers. H-6K bomber flights into the Philippine Sea demonstrate the PRC's ability to range Guam with air-launched LACMs. The DF-26

intermediate range ballistic missile is capable of reaching Guam, and is capable of conducting nuclear, precision conventional, and maritime attacks.

China views its ability to acquire timely, high-fidelity information as critical to its ability to execute precision strikes. The PLA's information support system for precision strikes depends heavily on Strategic Support Force (SSF) assets to detect, identify, target, and conduct battlefield damage assessments. China emphasizes the importance of space-based surveillance capabilities in supporting precision strikes. In 2021, the PRC continued to develop its constellation of military reconnaissance satellites that could support monitoring, tracking, and targeting of U.S. and allied forces, while also investing in reconnaissance, surveillance, command, control, and communications systems at the strategic, operational, and tactical levels to provide high-fidelity OTH targeting information for its strike platforms.

Integrated Air Defense System (IADS). The PRC has a robust and redundant IADS architecture over land areas and within 300 nm (556 km) of its coast that relies on an extensive early warning radar network, fighter aircraft, and a variety of SAM systems. The PRC has also placed radars and air defense weapons on outposts in the South China Sea, further extending the range of its IADS. It also employs point defenses, primarily to defend strategic targets against adversary long-range cruise missiles and airborne strike platforms.

The PLA has increasing numbers of advanced long-range SAMs, including its indigenous CSA-9 (HQ-9) and its follow-on HQ-9B, Russian SA-10 (S-300PMU), and SA-20 (S-300PMU1 / PMU2), all of which have the advertised capability to protect against both aircraft and low-flying cruise missiles. To improve its strategic air defenses, the PLA possesses Russian-built SA-21 (S-400) Triumf SAM systems as a follow-on to the SA-20. Compared to these other systems, the SA-21 systems possess a longer maximum range, improved missile seekers, and more sophisticated radars.

The PRC manufactures a variety of long-range air surveillance radars, including models claiming to support ballistic missile defense (BMD) and other models asserting the ability to detect stealth aircraft. Marketing materials also emphasize these systems' ability to counter long-range airborne strike and combat support aircraft. PLAAF AEW&C aircraft such as the KJ-2000 and KJ-500 can further extend the PRC's s radar coverage well past the range of its ground-based radars.

Ballistic and Cruise Missile Defense. The PLA's long-range SAM inventory also offers a limited capability against ballistic missiles. The PRC's domestic CSA-9 (HQ-9) long-range SAM system likely has a limited capability to provide point defense against tactical ballistic missiles. The PLA has SA-20 (S-300 PMU2) SAMs and SA-21 (S-400) SAMs that may have some capability to engage ballistic missiles, depending on the interceptors and supporting infrastructure. The PRC is working to develop BMD systems consisting of exo-atmospheric and endo-atmospheric kinetic-energy interceptors. China is pursuing a mid-course interceptor that may have capabilities against IRBMs and possibly ICBMs. The RENHAI cruiser has been

identified as a platform for mid-course intercept capabilities suggesting the PRC will have forward deployed missile defense in the near future. Additionally, the HQ-19 interceptor has undergone tests to verify its capability against 3,000 km-class ballistic missiles. The PLA's cruise missile defense capability is more robust than that of its ballistic missile defenses, with short-to-medium range SAMs, such as the HQ-22, augmenting the PLA's long-range SAMs in this role.

Hypersonic Weapons. China's deployment of the DF-17 HGV-armed MRBM will continue to transform the PLA's missile force. The system, fielded in 2020, is possibly intended to replace some older SRBM units, according to PRC media, and is intended to strike foreign military bases and fleets in the Western Pacific, according to a PRC-based military expert.

Aviation Forces (PLAAF, PLAA Aviation, PLAN Aviation). PLA aviation forces are fielding advanced platforms capable of supporting future long-distance operations, as their mission sets evolve from defending Chinese territorial space to launching offensive operations at distances beyond the First Island Chain. While interoperability is a stated priority, joint exercises between the aviation's forces are limited. Individually, the PLAAF, PLAN Aviation, and PLAA Aviation continue to improve their capabilities to conduct offensive and defensive operations offshore, including strike, air and missile defense, strategic mobility, early warning and reconnaissance missions, and insertion. The PLAAF, in particular, has received repeated calls from its leadership to become a truly "strategic" air force, able to project power at long distances to advance and defend the PRC's global interests.

- In 2021, the Y-20U tanker entered service, supporting the continued PLAAF expansion of air refuelable fighters, bombers, and SMA aircraft like the KJ-500 AEW&C aircraft. These new air refuelable aircraft will significantly expand China's ability to conduct long-range offensive air operations.
- China was developing a new generation of long-range bombers, likely named the H-20, according to multiple reports and a 2016 public statement by then PLAAF Commander General Ma Xiaotian. The H-20, which may debut sometime in the next decade, will have a range of more than 10,000km, enabling the PLAAF to cover the Second Island Chain and into the western region of the Pacific. The H-20 bomber's range could be extended to cover the globe with aerial refueling. It is also expected to employ both conventional and nuclear weaponry and feature a stealthy design.
- The PLA Army aviation and air assault units are enabling highly-mobile, modular ground task force capable of expeditionary operations. In 2021, the PLAA added at least six heavy lift Z-8 transport helicopters and 12 medium lift Z-20 helicopters. According to PRC media, three Z-8 transport aircraft battalions could airdrop a combat battalion in one lift. The Z-20 is also expected to fill a variety of missions including special force insertion and shipborne ASW.
- PRC's outposts in the South China Sea extends the operating reach of PLA aviation forces.

ADVANCING TOWARD AN INFORMATIZED MILITARY

Key Takeaways

- The PLA considers information operations (IO) as a means of achieving information dominance early in a conflict, and continues to expand the scope and frequency of IO in military exercises.
- The PRC presents a significant, persistent cyber-enabled espionage and attack threat to an adversary's military and critical infrastructure systems.
- The PLA is pursuing next-generation combat capabilities based on its vision of future conflict, which it calls "intelligentized warfare," defined by the expanded use of AI and other advanced technologies at every level of warfare.

Chairman Xi Jinping has called for the PLA to create a highly informatized force capable of dominating all networks and expanding the country's security and development interests. PRC military writings describe informatized warfare as the use of information technology to create an operational system-of-systems, which would enable the PLA to acquire, transmit, process, and use information during a conflict to conduct joint military operations across the ground, maritime, air, space, cyberspace, and electromagnetic spectrum domains. The PLA is accelerating the incorporation of command information systems, providing forces and commanders with enhanced situational awareness and decision support to more effectively carry out joint missions and tasks to win informatized local wars. The PLA continues to expand the scope and regularity of military training exercises that simulate informatized operations and likely views offensive and defensive cyberspace operations as a means to achieve information dominance early in a crisis or conflict.

Command, Control, Communications, Computers, and Intelligence Modernization (C4I). The PRC continues to prioritize C4I modernization as a response to trends in modern warfare that emphasize the importance of rapid information collection, processing, and sharing and accelerated decision making. The PLA is continuing modernization and reform efforts, both technologically and organizationally, to effectively command complex, joint operations across all warfare domains and potentially in multiple theaters.

The PLA sees networked, technologically advanced C4I systems as essential to providing reliable, secure communications to fixed and mobile command posts, thereby enabling rapid, effective, multi-echelon decision making. These systems are designed to distribute real-time data—including intelligence, battlefield information, logistical information, and weather reports via redundant, resilient communications networks—to improve commanders' situational awareness. PLA field commanders view near-real-time ISR and situational data as well as redundant and reliable communications as essential to streamlining decision making processes and shortening response timelines. China has expanded its communications and

intelligence gathering capabilities in key regions like the South China Sea, where it has rapidly constructed new facilities and antennas likely supporting satellite communications and technical collection between 2018 and 2021. The PRC is also fielding the Integrated Command Platform to units at multiple echelons across the force to enable lateral and cross-service communications and intelligence sharing required for joint operations. Digital databases and command automation tools allow commanders to simultaneously issue orders to multiple units while on the move and enable units to quickly adapt to shifting conditions in the battlespace.

As the PLA continues to focus on improving its ability to fight and win informatized wars, future information systems will likely implement emerging technologies such as automation, big data, the internet of things, artificial intelligence (AI), and cloud computing to improve process efficiencies. The PLA has already begun this process by embracing big data analytics that fuse a variety of data to improve automation and to create a comprehensive, real-time picture for warfighters.

Electronic Warfare (EW). The PLA considers EW to be an integral component of modern warfare and seeks to achieve information dominance in a conflict through the coordinated use of cyberspace and electronic warfare to protect its own information networks and deny the enemy the use of the electromagnetic spectrum. The PRC's EW strategy emphasizes suppressing, degrading, disrupting, or deceiving enemy electronic equipment throughout the continuum of a conflict. The PLA will likely use electronic warfare early in a conflict as a signaling mechanism to warn and deter adversary offensive action. Potential EW targets include adversary systems operating in radio, radar, microwave, infrared and optical frequency ranges, as well as adversary computer and information systems. PLA EW units routinely train to conduct jamming and anti-jamming operations against multiple communication and radar systems and Global Positioning System (GPS) satellite systems during force-on-force exercises. These exercises test operational units' understanding of EW weapons, equipment, and procedures and they also enable operators to improve confidence in their ability to operate effectively in a complex electromagnetic environment. In addition, the PLA reportedly tests and validates advances in EW weapons' R&D during these exercises.

Cyberspace warfare. The development of cyberspace warfare capabilities is consistent with PLA writings, which identify information operations (IO)—comprising cyberspace, electronic, space, and psychological warfare—as integral to achieving information superiority early in a conflict as an effective means to counter a stronger foe. The PRC has publicly identified cyberspace as a critical domain for national security and declared its intent to expedite the development of its cyber forces.

The PRC presents a sophisticated, persistent cyber-enabled espionage and attack threat to military and critical infrastructure systems, and presents a growing influence threat. The PRC seeks to create disruptive and destructive effects—from denial-of-service attacks to physical disruptions of critical infrastructure—to shape decision-making and disrupt military

operations beginning in the initial stages and throughout a conflict. The PRC can launch cyberspace attacks that, at a minimum, can cause localized, temporary disruptions to critical infrastructure within the United States, and the PRC believes these capabilities are even more effective against militarily superior adversaries that depend on information technologies. As a result, the PRC is advancing its cyberspace attack capabilities and has the ability to launch cyberspace attacks—such as disruption of a natural gas pipeline for days to weeks—in the United States.

Authoritative PLA sources call for the coordinated employment of space, cyberspace, and EW as strategic weapons to "paralyze the enemy's operational system of systems" and "sabotage the enemy's war command system of systems" early in a conflict. PLA writings judge other countries have effectively used cyberspace warfare and other IO in recent conflicts and argue for attacks against C2 and logistics networks to affect an adversary's ability to make decisions and take actions in the early stages of conflict. The PLA also considers cyberspace capabilities to be a critical component in its overall integrated strategic deterrence posture, alongside space and nuclear deterrence. PLA studies discuss using warning or demonstration strikes—strikes against select military, political, and economic targets with clear awing effects—as part of deterrence. Accordingly, the PLA probably seeks to use its cyber-reconnaissance capabilities to collect data for intelligence and cyberspace attack purposes; to constrain an adversary's actions by targeting network-based logistics, C2, communications, commercial activities, and civilian and defense critical infrastructure; and, to serve as a force-multiplier when coupled with kinetic attacks during armed conflict.

The PLA's recent structural reforms may further change how the PLA organizes and commands IO, particularly as the SSF continues to develop its capabilities and further integrate into joint planning, exercises, and operations with other PLA forces. The SSF likely is generating synergies by combining national-level cyberspace reconnaissance, attack, and defense capabilities in its organization, alongside other strategic IO capabilities.

Intelligentized Warfare. In October 2020, the CCP announced that modern warfare was evolving to include intelligentization and incorporated the concept into its 14th Five-Year Plan. Beijing anticipates that AI and other advanced technologies, such as cloud computing and big data analytics, will be key to success in future warfare. As a result, it is adjusting the PRC's defense modernization plans to focus on integrating the development of "mechanization, informatization, and intelligentization," suggesting the PLA will field some intelligentized capabilities as it completes mechanization and informatization over the next decade.

PLA strategists have stated new technologies will increase the speed and tempo of future warfare, and that operationalization of AI will be necessary to improve the speed and quality of information processing by reducing battlefield uncertainty and providing decision making advantage over potential adversaries. The PLA is researching various applications for AI including support for missile guidance, target detection and identification, and autonomous

systems. The PLA is exploring next-generation operational concepts for intelligentized warfare, such as attrition warfare by intelligent swarms, cross-domain mobile warfare, AI-based space confrontation, and cognitive control operations. The PLA also considers unmanned systems to be critical intelligentized technologies, and is pursuing greater autonomy for unmanned aerial, surface, and underwater vehicles to enable manned and unmanned hybrid formations, swarm attacks, optimized logistic support, and disaggregated ISR, among other capabilities.

SPACE AND COUNTERSPACE CAPABILITIES

Key Takeaways

- The PLA views space superiority, the ability to control the space-enabled information sphere and to deny adversaries their own space-based information gathering and communication capabilities, as critical components to conduct modern "informatized warfare."
- The PLA continues to invest in improving its capabilities in space-based intelligence, surveillance, and reconnaissance (ISR), satellite communication, satellite navigation, and meteorology, as well as human spaceflight and robotic space exploration.
- The PLA continues to acquire and develop a range of counterspace capabilities and related technologies, including kinetic-kill missiles, ground-based lasers, and orbiting space robots, as well as expanding space surveillance capabilities, which can monitor objects in space within their field of view and enable counterspace actions.

Space Strategy and Doctrine. The PRC officially advocates for the peaceful use of space and is pursuing agreements in the United Nations on the "non-weaponization" of space. China continues to improve its counterspace weapons capabilities and has enacted military reforms to better integrate cyberspace, space, and EW into joint military operations. China's space strategy is expected to evolve over time, keeping pace with the application of new space technology. These changes probably will be reflected in published national space strategy documents, through space policy actions, and in programs enacted by political and military leadership. In September 2021, President Xi Jinping stated that "space is an important strategic asset for the country that must be well managed and utilized and, more importantly, protected," and called for strengthened space traffic management and international cooperation on security issues to improve effectiveness in managing crises in space.

The PLA views space superiority, the ability to control the space-enabled information sphere and to deny adversaries their own space-based information gathering and communication capabilities, as a critical component to conduct modern "informatized warfare." China's first public mention of space and counterspace capabilities came as early as 1971, largely from academics reviewing foreign publications on ASAT technologies. However, Chinese science

and technology efforts on space began to accelerate in the 1980s, most likely as a result of the U.S. space-focused Strategic Defense Initiative to defend against the former Soviet Union's nuclear weapons. Subsequently, after observing the U.S. military's performance during the 1991 Gulf War, Kosovo, Afghanistan, and the second Iraq War, the PLA embarked on an effort to modernize weapon systems, across all domains including space, and update its doctrine to focus on using and countering adversary information-enabled warfare.

China's perceptions of the importance of space-enabled operations to the United States and its allies has shaped integral components of PLA military planning and campaigns. In addition, space is a critical enabler of beyond-line-of-sight operations for deployed PRC forces, and the PLA sees counterspace operations as a means to deter and counter a U.S. intervention during a regional military conflict. China has claimed that "destroying or capturing satellites and other sensors" would make it difficult for the U.S. and allied militaries to use precision-guided weapons. Moreover, PRC defense academics suggest that reconnaissance, communication, navigation, and early warning satellites could be among the targets of attacks designed to "blind and deafen the enemy."

Space and Counterspace Capabilities. The PRC's space enterprise continues to mature rapidly and Beijing has devoted significant economic and political resources to growing all aspects of its space program, from military space applications to civil applications such as profit-generating launches, scientific endeavors, and space exploration. The PRC's space enterprise includes the SSF and also encompasses other military, government, and civilian organizations, including state-owned enterprises, academic institutions, and commercial entities. The PLA has historically managed the PRC's space program and the SSF Space Systems Department is responsible for nearly all PLA space operations. The PRC continues to strengthen its military space capabilities, despite its public stance against the weaponization of space. The PLA continues to invest in improving its capabilities in space-based intelligence, surveillance, and reconnaissance (ISR), satellite communication, satellite navigation, and meteorology, as well as human spaceflight and robotic space exploration. In 2022, the PRC plans to have a permanent operating space station that will host its own and foreign payloads and astronauts. The PRC has built an expansive ground support infrastructure to support its growing on-orbit fleet and related functions including spacecraft and space launch vehicle (SLV) manufacture, launch, C2, and data downlink. Additionally, the PRC continues to develop counterspace capabilities—including direct ascent, co-orbital, electronic warfare, and directed energy capabilities—that can contest or deny an adversary's access to and operations in the space domain during a crisis or conflict.

China has devoted considerable economic and technological resources to growing all aspects of its space program, improving military space applications, developing human spaceflight, and conducting lunar and Martian exploration missions. In the past 10 years, China has doubled its launches per year and the number of satellites in orbit. China has placed three space stations in orbit, two of which have since deorbited, and the third of which launched in

2021. Furthermore, China has launched a robotic lander and rover to the far side of the Moon; a lander and sample return mission to the Moon; and an orbiter, lander, and rover in one mission to Mars. The PRC has also launched multiple anti-satellite (ASAT) missiles that are able to destroy satellites and developed mobile jammers to deny SATCOM and GPS.

Beijing's goal is to become a broad-based, fully capable space power. Its rapidly growing space program—second only to the United States in the number of operational satellites—is a source of national pride and part of Chairman Xi Jinping's "China Dream" to establish a powerful and prosperous China. The space program, managed by the PLA, supports both civilian and military interests, including strengthening its science and technology sector, growing international relationships, and modernizing the military. China seeks to rapidly achieve these goals through advances in the research and development of space systems and space-related technology.

China will continue to launch a range of satellites that substantially enhance its ISR capabilities; field advanced communications satellites able to transmit large amounts of data; increase Position, Navigation, and Timing (PNT) capabilities; and deploy new weather and oceanographic satellites. China has developed and will continue to develop weapons for use against satellites in orbit to degrade and deny adversary space capabilities.

The PLA continues to acquire and develop a range of counterspace capabilities and related technologies, including kinetic-kill missiles, ground-based lasers, and orbiting space robots, as well as expanding space surveillance capabilities, which can monitor objects in space within their field of view and enable counterspace actions. In concert with its marked improvements in satellite navigation, launch capabilities, and space object surveillance and identification, the PRC is developing electronic warfare capabilities such as satellite jammers; offensive cyberspace capabilities; and directed-energy weapons. Moreover, the PRC has demonstrated sophisticated, potentially damaging on-orbit behavior with space-based technologies. The PRC has an operational ground-based anti-satellite (ASAT) missile intended to target low-Earth orbit satellites, and China probably intends to pursue additional ASAT weapons capable of destroying satellites up to geosynchronous Earth orbit. The PRC is employing more sophisticated satellite operations and is probably testing dual-use technologies in space that could be applied to counterspace missions.

ISR Satellite Capabilities. China employs a robust space-based ISR capability designed to enhance its worldwide situational awareness. Used for military and civilian remote sensing and mapping, terrestrial and maritime surveillance, and intelligence collection, China's ISR satellites are capable of providing electro-optical and synthetic aperture radar (SAR) imagery as well as electronic and signals intelligence data. China also exports its satellite technology globally, including its domestically developed remote-sensing satellites.

As of the end of 2021, China's ISR satellite fleet contained more than 260 systems—a quantity second only to the United States, and nearly doubling China's in-orbit systems since 2018.

The PLA owns and operates about half of the world's ISR systems, most of which could support monitoring, tracking, and targeting of U.S. and allied forces worldwide, especially throughout the Indo-Pacific region. These satellites also allow the PLA to monitor potential regional flashpoints, including the Korean Peninsula, Taiwan, Indian Ocean, and the South China Sea.

Recent improvements to China's space-based ISR capabilities emphasize the development, procurement, and use of increasingly capable satellites with digital camera technology as well as space-based radar for all-weather, 24-hour coverage. These improvements increase China's monitoring capabilities—including observation of U.S. aircraft carriers, expeditionary strike groups, and deployed air wings. Space capabilities will enhance potential PLA military operations farther from the Chinese coast. These capabilities are being augmented with electronic reconnaissance satellites that monitor radar and radio transmissions.

Satellite Communications. China owns and operates more than 60 communications satellites, at least four of which are dedicated to military use. China produces its military-dedicated satellites domestically. Its civilian communications satellites incorporate off-the-shelf commercially manufactured components. China is fielding advanced communications satellites capable of transmitting large amounts of data. Existing and future data relay satellites and other beyond-line-of-sight communications systems could convey critical targeting data to Chinese military operation centers.

In addition, China is making progress on its ambitious plans to propel itself to the forefront of the global SATCOM industry. China is continuing to test next-generation capabilities like its Quantum Experimentation at Space Scale (QUESS) space-based quantum-enabled communications satellite, which could supply the means to field highly secure communications systems. In 2016, China launched the world's first quantum communications satellite (Micius) into low Earth orbit. Between 2017 and 2019, PRC scientists used Micius to send quantum keys to ground stations up to distances of 1,200 kilometers and as a trusted relay to transmit quantum keys between ground stations in China and Austria, facilitating intercontinental quantum-secured communications. In June 2020, a team of PRC scientists claimed to achieve quantum supremacy—the event that a quantum device performs a computational task that no existing or easily foreseeable classical device could perform—using a photonic quantum computer (Jiuzhang), followed by a Chinese superconducting quantum computer (Zuchongzhi), which also achieved quantum supremacy in 2021. Testing satellite-based quantum entanglement represents a major milestone in building a practical, global, ultra-secure quantum network, but the widespread deployment and adoption of this technology still faces hurdles.

China also intends to provide SATCOM support to users worldwide and plans to develop at least seven new SATCOM constellations in LEO. However, as these constellations are still in the early stages of development, their effectiveness remains uncertain.

Position, Navigation, and Timing (PNT) Capabilities. China's satellite navigation system, known as BeiDou, is an independently constructed, developed, and exclusively China-operated PNT service. China's priorities for BeiDou are to support national security and economic and social development by adopting PRC PNT into precise agriculture, monitoring of vehicles and ships, and aiding with civilian-focused services across more than 100 countries in Africa, Asia, and Europe. BeiDou provides all-time, all-weather, and high-accuracy PNT services to users domestically, in the Asia-Pacific region, as well as globally and consists of 49 operational satellites. Initially deployed to facilitate regional PNT services, BeiDou achieved worldwide initial operating capability in 2018. In June 2020, China successfully launched the final satellite in the BeiDou satellite constellation, completing its global navigation system. China's military uses BeiDou's high-accuracy PNT services to enable force movements and precision guided munitions delivery.

BeiDou has a worldwide positional accuracy standard of 10 meters; accuracy in the Asia-Pacific region is within 5 meters. In addition to providing PNT, the BeiDou constellation offers unique capabilities, including text messaging and user tracking through its Regional Short Message Communication service to enable mass communications among BeiDou users. The system also provides additional military C2 capabilities for the PLA.

China intends to use its BeiDou constellation to offer additional services and incentives to countries taking part in its Belt and Road Initiative emphasizing building strong economic ties to other countries to align partner nations with China's interests. As of May 2021, China is predicting BeiDou products and services will be worth $156 billion by 2025, and potentially export BeiDou products to more than 100 million users in 120 countries.

Human Spaceflight and Space Exploration Efforts. Following uncrewed missions that began in 1999, China became the third country to achieve independent human spaceflight when it successfully orbited the crewed Shenzhou-5 spacecraft in 2003. In 2011, China then launched its first space station, Tiangong-1, and in 2016, it launched its second space station, Tiangong-2. In 2020, China conducted its first orbital test of the New-Generation Manned Spaceship, which is expected to replace the Shenzhou series of crewed spacecraft. On 29 April 2021, China launched the first element, Tianhe, of its new Tiangong space station. Beijing launched the first supply vessel, Tianzhou, and has launched two PRC crews since then.

China has also taken on a greater role in deep space exploration and space science and has made notable accomplishments during the past several years. China has demonstrated its interest in working with Russia and the European Space Agency (ESA) to conduct deep-space exploration. China is the third country to place a robotic rover on the Moon and was the first to land a rover on the lunar far side in 2019, which is communicating through the Queqiao relay satellite that China launched the year before to a stable orbit around an Earth-Moon Lagrange point. In May 2021, China landed the Zhurong rover on Mars, the first PRC rover to operate on Mars.

Space Launch Capabilities. China is improving its space launch capabilities to ensure it has an independent, reliable means to access space and to compete in the international space launch market. China continues to improve manufacturing efficiencies and launch capabilities overall, supporting continued human spaceflight and deep-space exploration missions—including to the Moon and Mars. New modular space launch vehicles (SLVs) that allow China to tailor an SLV to the specific configuration required for each customer are beginning to go into operation, leading to increased launch vehicle reliability and overall cost savings for launch campaigns. China is also in the early stages of developing a super heavy-lift SLV similar to the U.S. Saturn V or the newer U.S. Space Launch System to support proposed crewed lunar and Mars exploration missions.

In addition to land-based launches, in 2020 China demonstrated the ability to launch a Long March-11 (LM-11) from a sea-based platform. This capability, if staged correctly, would allow China to launch nearer to the equator than its land-based launch sites, increase the rocket's carrying capacity, and potentially lower launch costs.

China has developed quick-response SLVs to increase its attractiveness as a commercial small satellite launch provider and to rapidly reconstitute LEO space capabilities, which could support Chinese military operations during a conflict or civilian response to disasters. Compared with medium- and heavy-lift SLVs, these quick-response SLVs are able to expedite launch campaigns because they are transportable via road or rail and can be stored launch-ready with solid fuel for longer periods than liquid-fueled SLVs. Because their size is limited, quick-response SLVs such as the Kuaizhou-1 (KZ-1), LM-6, and LM-11 are only able to launch relatively small payloads of up to approximately 2 metric tons into LEO. In June 2020, China announced its intention to upgrade the payload capacity of the LM-11 in the new LM-11A, designed for land or sea launches, beginning in 2022.

The expansion of non-state-owned PRC launch vehicle and satellite operation companies in China's domestic market since 2015 suggests that China is successfully advancing military-civil fusion efforts. Military-civil fusion blurs the lines between these entities and obfuscates the end users of acquired foreign technology and expertise.

Space Situational Awareness. China has a robust network of space surveillance sensors capable of searching, tracking, and characterizing satellites in all Earth orbits. This network includes a variety of telescopes, radars, and other sensors that allow China to support its missions including intelligence collection, counterspace targeting, ballistic missile early warning (BMEW), spaceflight safety, satellite anomaly resolution, and space debris monitoring.

Electronic Warfare Counterspace Capabilities. The PLA considers EW capabilities to be critical assets for modern warfare, and its doctrine emphasizes using EW to suppress or deceive enemy equipment. The PLA routinely incorporates jamming and anti-jamming techniques in its exercises that probably are intended to deny multiple types of space-based

communications, radar systems, and GPS navigation support to military movement and precision-guided munitions employment. China probably is developing jammers dedicated to targeting SAR, including aboard military reconnaissance platforms. Interfering with SAR satellites very likely protects terrestrial assets by denying imagery and targeting in any potential conflict involving the United States or its allies. In addition, China probably is developing jammers to target SATCOM over a range of frequency bands, including military-protected extremely high frequency communications.

Directed Energy Weapons (DEWs). During the past two decades, PRC defense research has proposed the development of several reversible and nonreversible counterspace DEWs for reversible dazzling of electro-optical sensors and even potentially destroying satellite components. China has multiple ground-based laser weapons of varying power levels to disrupt, degrade, or damage satellites that include a current limited capability to employ laser systems against satellite sensors. By the mid- to late-2020s, China may field higher power systems that extend the threat to the structures of non-optical satellites.

ASAT Missile Threats. In 2007, China destroyed one of its defunct weather satellites more than 800 kilometers above the Earth with an ASAT missile. The effect of this destructive test generated more than 3,000 pieces of trackable space debris, of which more than 2,700 remain in orbit and most will continue orbiting the Earth for decades. The PLA's operational ground-based ASAT missile system is intended to target LEO satellites. China's military units have continued training with ASAT missiles.

China plans to pursue additional ASAT weapons that are able to destroy satellites up to GEO. In 2013, China launched an object into space on a ballistic trajectory with a peak orbital radius above 30,000 kilometers, near GEO altitudes. No new satellites were released from the object, and the launch profile was inconsistent with traditional SLVs, ballistic missiles, or sounding rocket launches for scientific research, suggesting a basic capability could exist to use ASAT technology against satellites at great distances and not just LEO.

Orbital Threats. China is developing other sophisticated space-based capabilities, such as satellite inspection and repair. At least some of these capabilities could also function as a weapon. China has launched multiple satellites to conduct scientific experiments on space maintenance technologies and is conducting research on space debris cleanup; the most recent launch was the Shijian-21 launched into GEO in October 2021. In January 2022, Shijian-21 moved a derelict BeiDou navigation satellite to a high graveyard orbit above GEO. The Shijian-17 is a Chinese satellite with a robotic arm. Space-based robotic arm technology could be used in a future system for grappling other satellites.

Since at least 2006, the government-affiliated academic community in China began investigating aerospace engineering aspects associated with space-based kinetic weapons—generally a class of weapon used to attack ground, sea, or air targets from orbit. Space-based kinetic weapons research included methods of reentry, separation of payload, delivery

vehicles, and transfer orbits for targeting purposes. China conducted the first fractional orbital launch of an ICBM with a hypersonic glide vehicle from China on July 27th, 2021. This demonstrated the greatest distance flown (~40,000 kilometers) and longest flight time (~100+ minutes) of any PRC land attack weapons system to date.

NUCLEAR CAPABILITIES

Key Takeaways

- Over the next decade, the PRC aims to modernize, diversify, and expand its nuclear forces. Compared to the PLA's nuclear modernization efforts a decade ago, current efforts exceed beyond previous attempts in both scale and complexity.
- The PRC is investing in, and expanding, the number of its land-, sea-, and air-based nuclear delivery platforms and constructing the infrastructure necessary to support this major expansion of its nuclear forces. The PRC is also supporting this expansion by increasing its capacity to produce and separate plutonium by constructing fast breeder reactors and reprocessing facilities.
- In 2021, Beijing probably accelerated its nuclear expansion; DoD estimates China's operational nuclear warheads stockpile has surpassed 400.
- The PLA plans to "basically complete modernization" of its national defense and armed forces by 2035. If China continues the pace of its nuclear expansion, it will likely field a stockpile of about 1500 warheads by its 2035 timeline.
- The PRC is fielding the DF-41, China's first road-mobile and silo-based ICBM with MIRV capability. The system is likely intended to carry no more than three warheads per missile and has improved range and accuracy over DF-31 class ICBMs. The PRC is conducting continuous at-sea deterrence patrols with its six JIN-class (Type 094) submarines (SSBNs), which are equipped to carry up to 12 JL-2 or JL-3 SLBMs.
- The PRC is rapidly establishing its silo-based solid-propellant missile fields likely consisting of over 300 silos in total, which are capable of fielding both DF-31 and DF-41 class ICBMs. This project and the expansion of China's liquid-propellant silo force suggests that the PRC intends to increase the peacetime readiness of its nuclear force by moving to a launch-on-warning (LOW) posture.

Strategy. The PRC's approach to using nuclear force is based on PLA "deterrence" of an enemy first strike and "counterstrike" when deterrence fails, threatening retaliation against an adversary's military capability, population, and economy. The PRC's nuclear weapons policy prioritizes the maintenance of a nuclear force able to survive a first strike and respond with sufficient strength to conduct multiple rounds of counterstrike, deterring an adversary with the threat of unacceptable damage to its military capability, population, and economy. The

PLA probably selects its nuclear strike targets to achieve conflict de-escalation and return to a conventional conflict with a remaining force sufficient to deter its adversary. PLA planners would probably avoid a protracted series of nuclear exchanges against a superior adversary, and state that the scale and intensity of retaliatory force needs to be carefully controlled. It is unclear whether the buildup of the PLA's nuclear arsenal may influence or change the PRC's nuclear strategy in the future; the PLA insists its nuclear policy remains clear and consistent.

- The PRC's current approach to nuclear force includes a public declaratory "no first use" (NFU) policy. That policy states the PRC will never use nuclear weapons first at any time nor under any circumstances. In addition, the PRC unconditionally undertakes not to use or threaten to use nuclear weapons against any non-nuclear-weapon state or in nuclear-weapon-free zones. Despite this policy, China's nuclear strategy probably includes consideration of a nuclear strike in response to a nonnuclear attack threatening the viability of China's nuclear forces or C2, or that approximates the strategic effects of a nuclear strike. Beijing probably would also consider nuclear use to restore deterrence if a conventional military defeat gravely threatened PRC survival.

Readiness. Although the PRC almost certainly keeps the majority of its nuclear force on a peacetime status—with separated launchers, missiles, and warheads—nuclear and conventional PLARF brigades conduct "combat readiness duty" and "high alert duty." These apparently include assigning a missile battalion to be ready to launch, and rotating to standby positions, on about a monthly basis for unspecified periods of time. The PRC will likely increase the number of units on "high alert duty" during times of increased tension. Authoritative PLA text books on strategy state "high alert duty" is valuable for the defender in a nuclear war and recommend the PLARF adopt a high alert posture conceptually comparable to the claimed high alert posture kept by portions of U.S. and Russian nuclear force. Such a posture is compatible with the PRC's active defense concept, NFU policy, and post-strike response approach.

Land-Based Platforms. The PRC's land-based nuclear forces primarily consist of ICBMs with different basing modes complimented by several theater-range road-mobile MRBMs and IRBMs. The PRC has approximately 300 ICBMs, including the silo-based CSS-4 Mod 2 (DF-5A) and Mod 3 (DF-5B) and possibly more recently a CSS-10 class missile (DF-31 class); the solid-fueled, road-mobile CSS-10-class (DF-31 class) with new versions having improved survivability and lethality and CSS-20 (DF-41); and the more limited range roll-out-to-launch CSS-3 (DF-4). The PRC is establishing additional nuclear units and increasing the number of launchers in mobile ICBM units from six to 12. This strategic arsenal is complemented by road-mobile, solid-fueled CSS-5 Mod 2 and Mod 6 (DF-21) MRBMs and DF-26 IRBMs capable of ranging targets in the Indo-Pacific region. The PLA is probably upgrading its existing unitary and MIRVed DF-5 liquid propellant ICBMs.

Sea-based Platforms. The PRC likely began near-continuous at-sea deterrence patrols with its six operational JIN class SSBNs, which are equipped to carry up to 12 CSS-N-14 (JL-2) or CSS-NX-20 (JL-3) SLBMs. The PRC's next-generation Type 096 SSBN is probably intended to field MIRVed SLBMs judging from past developmental trends. The 096 SSBNs will likely begin construction in the early-2020s. Based on the 30-plus-year service life of the PRC's first generation SSNs, the PRC will operate its JIN and Type 096 SSBN fleets concurrently. The current range limitations of the JL-2 will require the JIN to operate in areas north and east of Hawaii if the PRC seeks to target the east coast of the United States. The fielding of newer, more capable, and longer ranged SLBMs such as the JL-3 gives the PLAN the ability to target the continental United States from littoral waters allowing the PLAN to consider bastion operations to enhance the survivability of its sea-based deterrent. The South China Sea and Bohai Gulf are probably the PRC's preferred options for employing this concept.

Air Platforms. The PLAAF has operationally fielded the H-6N bomber, providing a platform for the air component of the PRC's nascent nuclear triad. The H-6N, compared to other H-6 bombers, adds an air-to-air refueling probe, as well as its recessed fuselage modifications that would allow for external carriage of an air-launched ballistic missile (ALBM) assessed to be nuclear capable. China is probably also developing a strategic stealth bomber, according to PRC state media.

Future Developments. Over the next decade, the PRC will expand and diversify its nuclear forces. The PRC probably intends to develop new nuclear warheads and delivery platforms that at least equal the effectiveness, reliability, and/or survivability of some of the warheads and delivery platforms currently under development by the United States and/or Russia. The PLA seeks a diverse nuclear force, comprised of systems ranging from lower-yield precision strike missiles to ICBMs with multi-megaton yields. Developing robust nuclear strike options is likely intended to provide deterrence predominantly against a "strong enemy," as well as ensure China can inflict unacceptable damage with both proportionate and overwhelming retaliatory capabilities, and thus denying an adversary victory if a war escalates to the nuclear domain.

China is establishing new nuclear materials production and reprocessing facilities very likely to support its nuclear force expansion. Although these efforts are consistent with China's goals to increase nuclear energy generation and to close its nuclear fuel cycle, Beijing likely also considers this dual-use infrastructure as crucial to supporting its military goals, judging from Chinese nuclear industry reporting and think tank publications. Despite China's public support for a fissile material cutoff treaty, we judge that Beijing intends to use this infrastructure to produce nuclear warhead materials for its military in the near term.

- **Plutonium.** China is constructing two CFR-600 sodium-cooled fast breeder nuclear reactors at Xiapu, each capable of producing enough plutonium for dozens of nuclear warheads annually from blankets (referring to uranium placed around the fuel core for

the purpose of breeding plutonium) surrounding the core, according to think tank estimates and informed by PRC state media and nuclear industry reporting. China originally planned to use Russian-sourced mixed-oxide (MOX is a blend of uranium and plutonium) fuel for these reactors but changed the order to highly enriched uranium (HEU) fuel through 2030, according to nuclear industry reporting. By using HEU fuel, China has the potential to generate additional weapons-grade plutonium. In addition, China is constructing multiple new reprocessing plants that could extract this plutonium, according to a Western think tank. China has reduced transparency in its nuclear program as its capabilities are increasing. It ceased reporting its stockpile of separated plutonium to the International Atomic Energy Agency in 2017 while still being capable of producing plutonium in reactors and separating it at its reprocessing plant at Jiuquan, judging from PRC state media and a Western think tank.

- **Uranium and Tritium.** In the past several years, China's organization traditionally associated with military uranium enrichment has expanded production capacity and likely will continue to do so. China is also working to expand and diversify its capability to produce tritium by methods such as using tritium production targets in reactors and extraction from tritiated heavy water, according to Chinese nuclear industry reporting.

Evolving Nuclear Posture. The PRC's evolving posture is presently more consistent with what PLA writings describe as a "limited deterrent"—a posture that the PLA describes as the very wide space between a minimum and maximum deterrent. The PRC claims to adhere to a minimum deterrent which it defines as "…keeping its nuclear capabilities at the minimum level required for maintaining its national security." The PRC perceived national security requirements will grow as it transitions from a 'large country' to a 'powerful country' and its minimum number of military forces—to include nuclear—needed to defend those greater interests is also likely to grow.

Stockpile Size. In 2020, the DoD estimated China's operational nuclear warhead stockpile was in the low-200s and expected to at least double by 2030. However, Beijing probably accelerated its nuclear expansion, and DoD estimates this stockpile has now surpassed 400 operational nuclear warheads. By 2030, DoD estimates that the PRC will have about 1,000 operational nuclear warheads, most of which will be fielded on systems capable of ranging the continental United States (CONUS).

Beijing has not declared an end goal nor acknowledged the scale of its expansion, and has declined to engage in substantive arms control discussions. We continue to assess the PRC is constructing the infrastructure necessary to support this force expansion, including increasing its capacity to produce and separate plutonium by constructing fast breeder reactors and reprocessing facilities. Though this is consistent with the PRC goal of closing the nuclear fuel cycle, the PRC likely intends to use some of this infrastructure to produce plutonium for its expanding nuclear weapons program.

The PRC's long-term nuclear requirements—and the relationship between the PRC's nuclear requirements and its national strategy and goal to field a "world-class" military by mid-century—remain unclear from public sources. Hawkish PRC state media outlets have asserted that the PRC needs 1,000 warheads, while retired PLA officers have suggested that the PRC should possesses a 'mutually assured destruction' capability. The PLA plans to "basically complete modernization" of its national defense and armed forces by 2035. If China continues the pace of its nuclear expansion, it will likely field a stockpile of about 1,500 warheads by that time. While neither of those claims are official, anticipated changes to the capacity, capability, and readiness of the PRC's nuclear forces in the coming years seem likely to outpace potential developments by the nuclear forces of any adversary that could plausibly threaten the PRC ability to retaliate against a first strike. A Western think tank publication indicated that the PRC could field more than 1,000 nuclear warheads by the end of the decade, judging from the amount of plutonium that could be produced from reactors under construction.

In recent years, the PRC's possible preparation to operate its Lop Nur nuclear test site year-round and lack of transparency on its nuclear testing activities have raised concerns regarding its adherence to the U.S. "zero yield" standard adhered to by the United States, the United Kingdom, and France in their respective nuclear weapons testing moratoria.

Regardless of the ultimate number of nuclear weapons it makes, the PRC will probably continue to claim it is, like other nuclear powers, adhering to the minimum of nuclear weapons needed to protect its security interests.

Hypersonics and Fractional Orbital Bombardment. The PRC is probably developing advanced nuclear delivery systems such as a strategic hypersonic glide vehicle and a fractional orbital bombardment (FOB) system in part due to long-term concerns about United States missile defense capabilities, as well as to attain qualitative parity with future worldwide missile capabilities. On July 27th, 2021, the PRC conducted a test of an ICBM-range hypersonic glide vehicle that travelled 40,000 kilometers. The test likely demonstrated the PRC's technical ability to field a FOB system.

Lower-yield Nuclear Weapons. The PRC probably seeks lower yield nuclear warhead capabilities to provide proportional response options that its high-yield warheads cannot deliver. PRC strategists have highlighted the need for lower-yield nuclear weapons in order to increase the deterrence value of the PRC's nuclear force, though they have not defined specific nuclear yield values. A 2017 defense industry publication indicated a lower-yield weapon had been developed for use against campaign and tactical targets that would reduce collateral damage. By late 2018, PRC concerns began to emerge that the United States would use low-yield weapons against its Taiwan invasion fleet, with related commentary in official media calling for proportionate response capabilities. The DF-26 is the PRC's first nuclear-capable missile system that can conduct precision strikes, and therefore, is the most likely weapon system to field a lower-yield warhead in the near-term.

PRC military writings in 2021 noted that the introduction of new precise small-yield nuclear weapons could possibly allow for the controlled use of nuclear weapons, in the warzone, for warning and deterrence. Additional PRC military writings as of 2017 noted that while strategic nuclear weapons remain the foundation of deterrence, tactical nuclear weapons with high hit precision and smaller yield would be effective in lowering the cost of war. Such discussions provide the doctrinal basis for limited nuclear employment on the battlefield, suggesting PRC nuclear thinkers could be reconsidering their long-standing view that nuclear war is uncontrollable.

Launch on Warning (LOW). The PLA is implementing a launch-on warning posture, called "early warning counterstrike" (预警反击), where warning of a missile strike leads to a counterstrike before an enemy first strike can detonate. PLA writings suggest multiple manned C2 organs are involved in this process, warned by space and ground based sensors, and that this posture is broadly similar to the U.S. and Russian LOW posture. The PRC probably seeks to keep at least a portion of its force, especially its new silo-based units, on a LOW posture, and since 2017, the PLARF has conducted exercises involving early warning of a nuclear strike and launch on warning responses.

China's considerations to attain a LOW posture date back to even the 1970s and 1980s, when the PRC considered using existing land-based ballistic missile early warning radar to support a LOW posture for its silo-based CSS-4 ICBMs, but apparently this early warning system was unreliable. In recent years, the PRC has been able to make advances in early warning needed to support a LOW posture. China has several ground-based large phase array radars—similar in appearance to U.S. PAVE PAWS radars—that could support a missile early warning role. There has likely been progress made in space-based early warning as well. In 2013, foreign media sources claimed to be in possession of PLA documents indicating expedited plans to field three geostationary satellites capable of detecting ballistic missile launches. Then, in 2015, the PRC's Defense White Paper identified "improved strategic early warning" as specific nuclear force modernization goals with the PRC's 13th Five-Year Plan (2016-2020) reported including requirements to place early warning satellites in space. As of 2022, the PRC likely has at least three early warning satellites in orbit. In 2019, Russia offered to assist China in developing a missile early warning system.

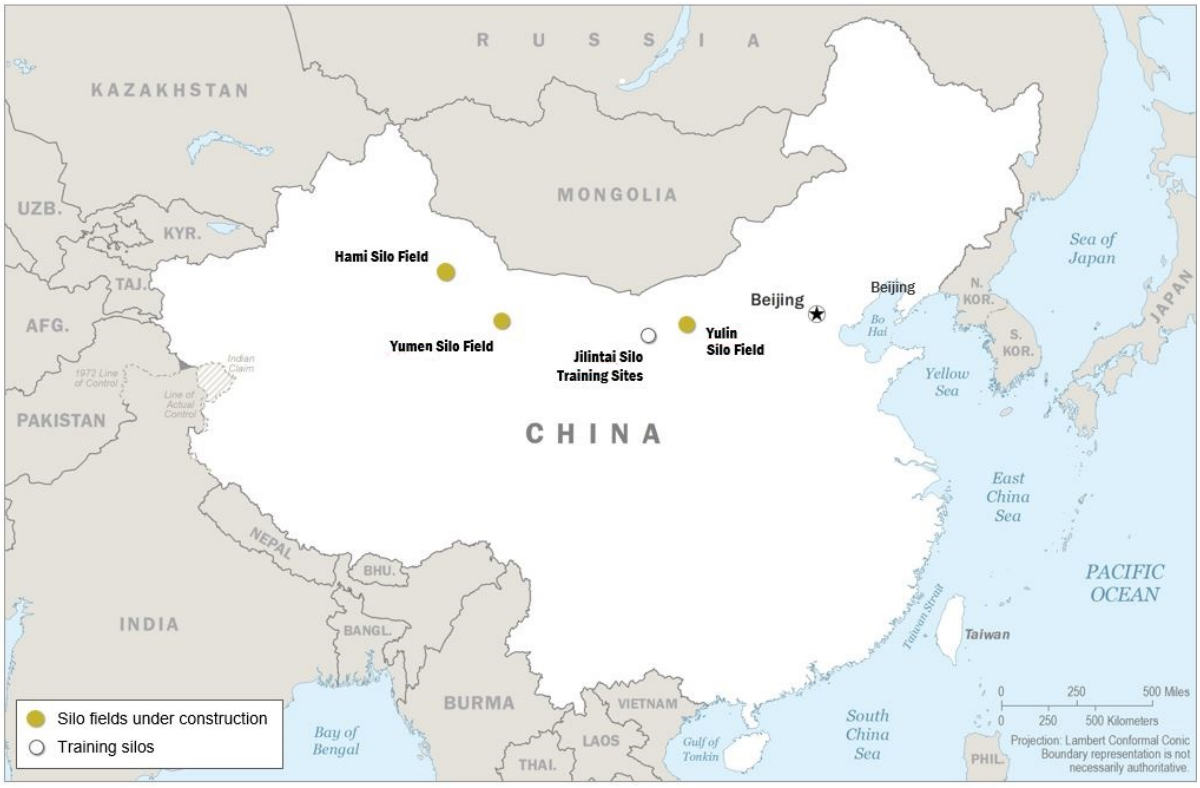
Despite these developments, the PRC has called upon other states to abandon similar launch-on-warning postures to enhance strategic stability while declining to engage in substantive dialogue on risk reduction. The PRC probably believes a LOW posture is consistent with its no first use policy, given that it involves a retaliatory strike that takes place after warning of an inbound first attack from an adversary. PRC military writings note that command and control systems—which would include early warning systems—can be a source of accidental nuclear war. China has refused to join the Hague Code of Conduct or participate in other confidence building measures designed to reduce the risk of accidental nuclear war. However, the PRC does have a bilateral missile and carrier rocket launch notification agreement with Russia called the Russian-Chinese Inter-governmental Agreement signed in 2009, which was

extended for 10 years in 2021—though little additional information regarding the implementation of the notification agreement is known.

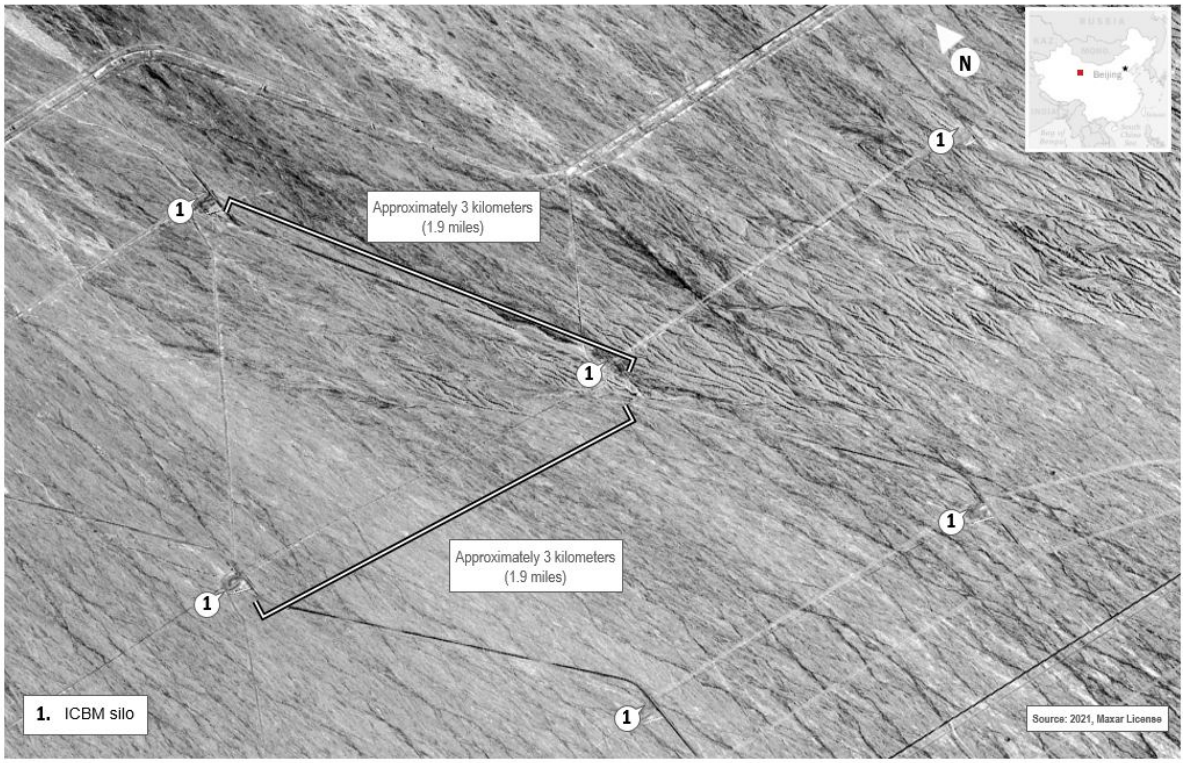
New ICBM Silos. The PRC is building hundreds of new ICBM silos. The PRC established a silo-based solid-propellant missile project likely consisting of at least 300 silos across three fields, judging from the size of the first field. These silos are capable of fielding both DF-31 and DF-41 class ICBMs. This project and the expansion of China's DF-5 class silo force suggests that the PRC intends to increase the peacetime readiness of its nuclear force by moving to a launch-on-warning (LOW) posture.

- The PRC is also building more silos for DF-5 class ICBMs; increasing the number of brigades while simultaneously increasing the number of launchers per brigade – though there is currently no indication this project will approach the size or numbers of the solid propellant missile silos.

China: Solid Propellant ICBM Silo Fields and Associated Training Site Locations



China: Yumen Silo Field Launch Sites



Chemical and Biological Research

Key Takeaways

- The PRC's chemical and biotechnology infrastructures are sufficient to research, develop, and produce some chemical and biological agents or toxins on a large scale.
- China probably has the technical expertise to weaponize chemical and biological warfare (CBW) agents, and China's robust armaments industry and numerous conventional weapon systems, including missiles, rockets, and artillery, probably could be adapted to deliver CBW agents.
- The PRC continues to engage in biological activities with dual-use applications, which raise concerns regarding its compliance with the Biological Weapons Convention (BWC). This includes studies at PRC military medical institutions on potent toxins with dual-use applications.
- The United States cannot certify that the PRC has met its obligations under the Chemical Weapons Convention (CWC) due to concerns regarding the PRC's research on pharmaceutical-based agents (PBAs) and toxins with potential dual-use applications.

The PRC continues to engage in biological activities with dual-use applications, which raise concerns regarding its compliance with the BWC. In addition, the United States does not have sufficient information to determine whether China eliminated its assessed historical biological warfare (BW) program, which the United States assesses that the PRC possessed from the 1950s to at least the late 1980s. China acceded to the Biological Weapons Convention (BWC) in 1984 and regularly submits to confidence-building measures (CBM) under the BWC; however, the PRC's CBM reporting has never acknowledged its past offensive program. As part of its historical BW program, the PRC had reported weaponized ricin, botulinum toxins, and the causative agents of anthrax, cholera, plague, and tularemia.

Based on available information, the United States cannot certify that the PRC has met its obligations under the Chemical Weapons Convention (CWC) due to concerns regarding the PRC's research of PBAs and toxins with potential dual-use applications. China has declared that it once operated a small chemical weapons program for offensive purposes; however, Beijing has consistently maintained that the program was dismantled and all agents and munitions were used before China ratified the CWC in 1997. Beijing also has declared two historical chemical warfare production facilities and was probably capable of producing mustard gas, phosgene, and lewisite.

Scientists at a PRC military institute have expressed interest in military applications of pharmaceutical-based agents (PBAs), including synthesis, characterization, and testing of PBAs with potential dual-use applications. In addition, available information on studies conducted at PRC military medical institutions indicates that researchers identify, test and characterize diverse families of potent toxins with dual-use applications.

China's chemical and biotechnology infrastructures are sufficient to research, develop, and produce some chemical and biological agents or toxins on a large scale. The PRC probably has the technical expertise to weaponize chemical and biological warfare (CBW) agents, and China's robust armaments industry and numerous conventional weapon systems, including missiles, rockets, and artillery, probably could be adapted to deliver CBW agents. China also has the technical expertise, military units, and equipment necessary to detect CBW agents and to defend against a CBW attack.

Entities and individuals in the PRC continue to supply countries of concern with technologies, components, and raw materials applicable to weapons of mass destruction and missile programs. Such material and technology transfers could assist countries in developing their own production capabilities.

CHAPTER THREE: OPERATIONAL STRUCTURE AND ACTIVITIES ON CHINA'S PERIPHERY

Key Takeaways

- The PRC continues to refine military reforms associated with the establishment of the Eastern, Southern, Western, Northern, and Central Theater Commands, which are organized based on the PRC's perception of peripheral threats.
- Under the direction of the Central Military Commission (CMC), each Theater Command has operational authority over the PLA conventional forces within the theater.

The PRC continues to make steady improvements to joint operations in the five theater commands, which were established in early 2016. Each theater command receives direction from the CMC, has operational authority over assigned PLA forces within its theater, and is responsible for all conventional combat and non-combat operations within its area of responsibility. Theater commands are responsible for developing theater-specific strategies aimed at preparing to fight and win against an adversary, developing joint operational plans and military capabilities, responding to crises, and safeguarding the sovereignty and stability of territories. The strategic directions of the theater commands are based on PRC perceptions of peripheral threats:

- Eastern Theater Command – Taiwan, East China Sea;
- Southern Theater Command – South China Sea, Southeast Asia border security, territorial and maritime disputes;
- Western Theater Command – India, Central Asia, "counterterrorism" in Xinjiang and Tibet;
- Northern Theater Command – Korean Peninsula, Russia border security;
- Central Theater Command – Capital defense; surge support to other theaters.

EASTERN THEATER COMMAND

Key Takeaways

- The Eastern Theater Command is oriented toward Taiwan and the East China Sea.
- The Eastern Theater Command likely would be in charge of executing a Taiwan invasion.

The Eastern Theater Command has responsibility for the East China Sea and likely executes operational control over military matters related to Taiwan and Japan, including contingencies in and around the Taiwan Strait and the Senkaku Islands. PLA units located within the Eastern Theater Command include 71st, 72nd, and 73rd Armies; the Eastern Theater Navy and its naval aviation division and two marine brigades; two Air Force divisions, two operational PLAAF bases, and one PLARF base. The Eastern Theater Command also likely commands all China Coast Guard (CCG) and maritime militia ships while they are conducting operations related to the ongoing dispute with Japan over the Senkaku Islands. During a contingency, the Eastern Theater Command likely also exercises command over some Strategic Support Force (SSF) units in theater and receives strategic intelligence support from the SSF to improve battlefield awareness and facilitate joint operations within the theater.

In 2021, the Eastern Theater Command focused on training and exercises to improve joint operations and combat readiness with long-distance maneuvers and mobilization, aerial combat, live-fire training, and the use of modified civilian ferries to augment transportation.

2021 Eastern Theater Command Leadership

Commander of the Eastern Theater Command – **General He Weidong [何卫东]**
Rank: General
Current position: Commander of the Eastern Theater Command
Previous position: Deputy Commander of the Western Theater Command,Commander of the Western Theater Command Army
DOB: 5/1957
Age: 64
Birthplace: Dongtai, Jiangsu Province [东台市江苏省]
Education: Army Command College, National University of Defense Technology

Political Commissar of the Eastern Theater Command – **General He Ping [何平]**
Rank: General
Current position: Political Commissar of the Eastern Theater Command
Previous position: Director of the Political Department of the Western Theater Command
DOB: 11/1957
Age: 64

Birthplace: Nanchong, Sichuan Province [四川省南充市]

Education: N/A

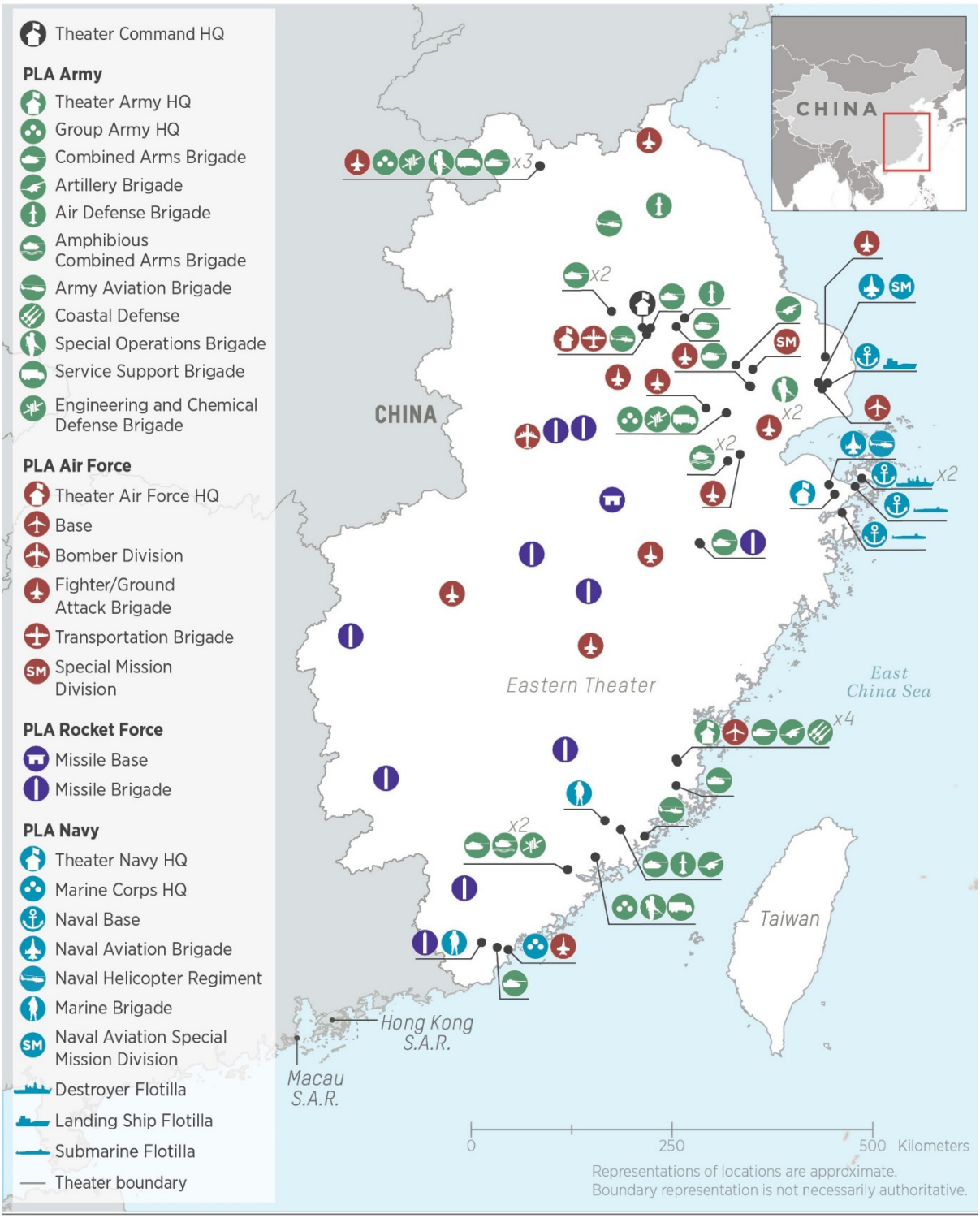
Chief of Staff of the Eastern Theater Command – **Lieutenant General Wang Xiubin [王秀斌]**

Rank: Lieutenant General
Current position: Chief of Staff of the Eastern Theater Command
Previous position: Commander of the 80th Group Army
DOB: 3/1964
Age: 57

Birthplace: Rudong County, Nantong, Jiangsu Province [江苏省南通市如东县]

Education: N/A

Eastern Theater



DEVELOPMENTS IN THE SECURITY SITUATION IN THE TAIWAN STRAIT

Key Takeaways

- The PRC intensified diplomatic, political, and military pressure against Taiwan in 2021.
- Throughout 2021, the PLA increased provocative and destabilizing actions in and around the Taiwan Strait, to include repeated flights into Taiwan's self-declared Air Defense Identification Zone and conducting island-seizure exercises.

Throughout 2021, island-seizure exercises became more frequent and realistic. The PLA conducted more than 20 naval exercises with an island-capture element, greatly exceeding the 13 observed in 2020. Many of these exercises focused on combat realism and featured night missions, training in adverse weather conditions, and simultaneous multi-domain operations.

The PLA is preparing for a contingency to unify Taiwan with the PRC by force if perceived as necessary by Beijing, while simultaneously deterring, delaying, or denying any intervention by a third-party, such as the United States and/or other like-minded partners, on Taiwan's behalf. As part of a comprehensive campaign to pressure Taiwan and the Tsai administration, and signal its displeasure at deepening Washington-Taipei ties, China has persistently conducted military operations near Taiwan and military training for a Taiwan contingency. Throughout 2021, the PLA increased provocative actions in and around the Taiwan Strait, to include repeated flights into Taiwan's self-declared Air Defense Identification Zone and numerous island seizure exercises.

PLA Unsafe and Unprofessional Behavior

Throughout 2021 and into 2022, PLA naval vessels and aircraft have exhibited a sharp increase in unsafe and unprofessional behavior in the Indo-Pacific region. Unsafe and unprofessional PLA behavior appear to target U.S. and U.S. allies and partner military aircrafts and naval vessels, risking a major incident or accident in the region.

Unsafe behaviors include lasing, aerobatics, discharging objects, and activity that impinge upon the ability of nearby aircraft to maneuver safely. For instance, in 2022, a PLA J-16 fighter maneuvered across the nose of an Australian P-8 operating in international airspace in the South China Sea and released a round of chaff that was ingested by the P-8 engine. The number of unsafe PLA intercepts against military aircraft operating lawfully in international airspace have increased steadily over the past five years.

EAST CHINA SEA

Key Takeaways

- The PRC continues to use maritime law enforcement vessels and aircraft to patrol near the Japan-administered Senkaku Islands.
- In 2021, the PRC passed new legislation regarding the rules of engagement for their Coast Guard vessels, creating a legal justification for more aggressive patrols.

The PRC claims sovereignty over the Japanese-administered Senkaku Islands in the East China Sea (ECS), which Taiwan also claims. Beijing continues to uphold the importance of the four-point consensus signed in 2014, which states Japan and the PRC will acknowledge divergent positions over the ECS but will prevent escalation through dialogue, consultation, and crisis management mechanisms. The United States does not take a position on sovereignty of the Senkaku Islands but recognizes Japan's administration of the islands and continues to reaffirm that the islands fall within the scope of Article 5 of the U.S.-Japan Mutual Security Treaty. In addition, the United States opposes any unilateral actions that seek to undermine Japan's administration of the islands.

The PRC uses maritime law enforcement vessels and aircraft to patrol near the islands, not only to demonstrate its sovereignty claims, but also to improve readiness and responsiveness to potential contingencies. In 2021, the PRC continued to conduct regular patrols into the contiguous zone territorial seas of the Senkaku Islands and stepped up efforts to challenge Japan's control over the islands by increasing the duration and assertiveness of its patrols. In one instance, China Coast Guard (CCG) ships entered Japanese-claimed waters for more than 100 consecutive days. Japan's government protested in January 2021, calling on China to ensure that new PRC legislation allowing its coast guard to use weapons in its waters complies with international law. In August 2021, seven CCG vessels—including four equipped with deck guns—sailed into disputed waters around the Japan-administered Senkaku islands in the East China Sea. According to the Japanese coast guard, the PRC vessels attempted to approach Japanese fishing vessels, but were prevented from doing so by Japan Coast Guard Vessels. Increased PRC assertiveness caused Japanese Defense Minister Nobuo Kishi to express "extremely serious concerns" in December 2021 and led to the Japanese and PRC defense ministries to begin operating a new hotline between the two countries to manage the risk of escalation.

SOUTHERN THEATER COMMAND

Key Takeaway

- The Southern Theater Command is oriented toward the South China Sea, Southeast Asia border security, and territorial and maritime disputes.

The Southern Theater Command covers mainland and maritime Southeast Asia, including the South China Sea (SCS). This geographic area implies that the Southern Theater Command is responsible for securing the SCS, supporting the Eastern Theater Command in any operation against Taiwan, and assuring the security of sea lines of communication (SLOCs) vital to China's global ambitions. PLA units located within the Southern Theater Command include 74th and 75th Group Armies, the Southern Theater Navy, three marine brigades, two PLA Air Force bases, and two PLA Rocket Force bases. The Southern Theater Command is responsible for responding to U.S. freedom of navigation operations in the SCS and can assume command as needed over all CCG and PAFMM vessels conducting operations within the PRC's claimed "nine-dash line."

2021 Southern Theater Command Leadership

Commander of the Southern Theater Command **– Yuan Yubai [袁誉柏]**
Rank: Admiral
Current position: Commander of the Southern Theater Command
Previous position: Commander of the PLA Navy Northern Theater Navy and Deputy Command of the Northern Theater Command
DOB: 5/1956
Age: 65
Birthplace: Gongan County, Hubei Province [湖北省公安县]
Education: Attended and received a master's degree from the PLA Naval Submarine Academy from 1978-1981

Political Commissar of the Southern Theater Command – **Wang Jianwu [王建武]**
Rank: General
Current position: Political Commissar of the Souhern Theater Command
Previous position: Deputy Director of the CMC Political Work Department
DOB: 8/1958
Age: 63
Birthplace: Luoning, Henan Province [河南省洛宁]
Education: N/A

Chief of Staff of the Southern Theater Command – **Liu Yayong [刘亚永]**
Rank: Lieutenant General
Current position: Chief of Staff of the Southern Theater Command

Previous position: Deputy Chief of Staff of the Northern Theater Command
DOB: 4/1958
Age: 63
Birthplace: Duchang, Jiangxi Province [江西省都昌]
Education: N/A

The Southern Theater Command is responsible for training, force disposition, and operations in the SCS. In 2020 and 2021, Southern Theater Command units conducted multiple live-fire drills and amphibious training events near PRC-occupied features in the SCS. The Southern Theater Command also plays a significant role in the PLA's bilateral and multilateral exercises with countries in Southeast Asia, participating in a joint naval exercise with Pakistan, a counterterrorism exercise with Cambodia, and a U.S. co-led multilateral exercise in Thailand, in 2021.

The PLA Hong Kong and Macao garrisons are subordinate to the Southern Theater Command. In August 2021, the PLA Hong Kong and Macao garrisons conducted an annual rotation of forces. Since 1997, the PLA has rotated forces by land, air, and sea from Shenzhen at night, nominally as part of the usual annual rotation. Since the 2019 pro-democracy protests, China maintains a rotational deployment of PAP forces in Hong Kong. The PAP and PLA units continued to publicly highlight their anti-riot, counterterrorism, and disaster prevention training.

All of the PLA's 24 Su-35s purchased from Russia are assigned to the Southern Theater Command Air Force and have flown patrols in the SCS and the Western Pacific. The Southern Theater Command was also the first command to receive the PLAN's H-6J maritime strike bombers. In December 2019, the PRC commissioned its first-domestically produced aircraft carrier, *Shandong* into service at Yulin Naval Base in the Southern Theater Command. Shortly after, the carrier returned to its shipyard in the Northern Theater to complete testing and flight certifications with J-15 fighter aircraft before returning to its homeport on Hainan Island sometime in 2020.

Southern Theater



SOUTH CHINA SEA

Key Takeaways

- The PRC's Spratly outposts are capable of supporting military operations, include advanced weapon systems, and have supported non-combat aircraft; however, no large-scale presence of combat aircraft has been yet observed there.

- In 2021, the PRC continued to deploy PLAN, CCG, and civilian vessels in response to Vietnamese and Malaysian drilling operations within the PRC's claimed "nine-dash-line" and Philippines' construction at Thitu Island.

Developments in the Security Situation in the South China Sea

In July 2016, pursuant to provisions in the 1982 UN Convention on the Law of the Sea (UNCLOS), an arbitral tribunal convened at the Philippines' behest ruled that the PRC's claims to "historic rights" in the SCS, within the area depicted by the "nine-dash line," were not compatible with UNCLOS. Since December 2019, four SCS claimants (Indonesia, Malaysia, the Philippines, and Vietnam) have explicitly referenced the arbitral ruling in notes verbales to the UN denying the validity of the PRC's "historic rights" and nine-dash line claims. Beijing, however, categorically rejects the tribunal decision, and the PRC continues to use coercive tactics, including the employment of PLA naval, coast guard, and paramilitary vessels, to enforce its claims and advance its interests. The PRC does so in ways calculated to remain below the threshold of provoking conflict.

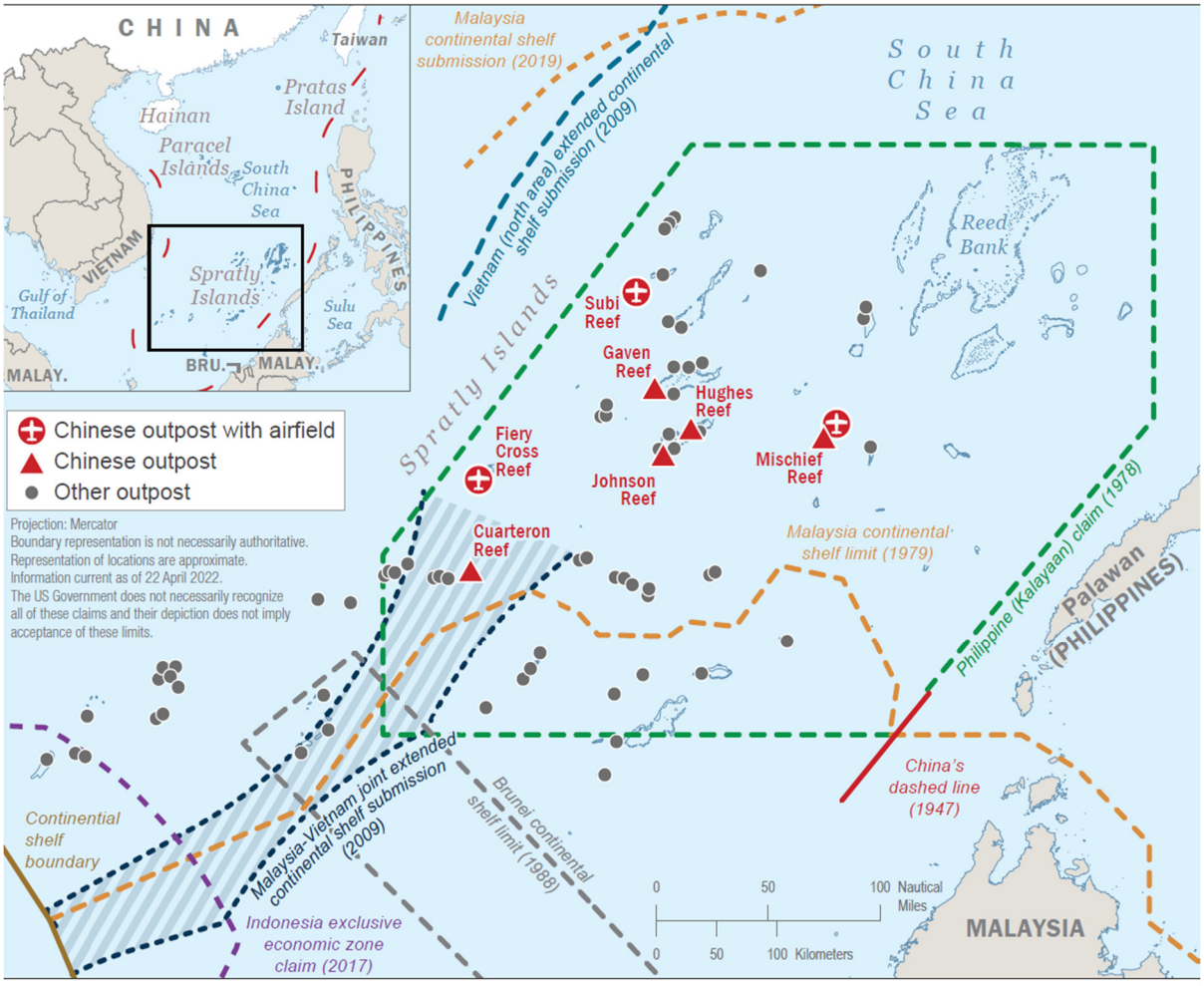
- The PRC states that international military presence within the SCS is a challenge to its sovereignty. Throughout 2021, the PRC deployed PLAN, CCG, and civilian vessels to maintain a presence in disputed areas, such as near Scarborough Reef and Thitu Island, and in response to oil and gas exploration operations by rival claimants within the PRC's claimed "nine-dash line." Separately, the CCG blocked two Philippine supply boats on their way to an atoll in the South China Sea and employed water cannons against them, prompting the United States to warn that an armed attack on Philippine public vessels would invoke U.S. defense commitments.

- In April 2020, Beijing announced the creation of two new administrative districts in the SCS covering the Paracels and the Spratly Islands. This action were likely intended to further solidify PRC claims in these areas—especially in terms of domestic law—and justify its actions in the region.

- In July 2019, China and Association of Southeast Asian Nations (ASEAN) members completed the first reading of the China-ASEAN Code of Conduct (CoC), with a second and third reading remaining before China and ASEAN members finalize the agreement. China and ASEAN member states had sought to complete CoC negotiations by 2021; however, the COVID-19 pandemic has delayed its progress.

When negotiations resumed in November of 2021, China was met with hostility from Philippine President Rodrigo Duterte following the aforementioned CCG actions against Philippine vessels. Negotiations did not produce substantive outcomes, likely because China and some SCS claimants were sensitive to language in the CoC that limits their activities. Given the complexity of the disagreement and ASEAN's consensus-based process, it is extremely unlikely that there will be a CoC signed in 2022.

Outposts in the Spratly Islands



South China Sea Outposts Capable of Supporting Military Operations

Since early 2018, PRC-occupied Spratly Islands outposts have been equipped with advanced anti-ship and anti-aircraft missile systems and military jamming equipment, marking the most capable land-based weapons systems deployed by any claimant in the disputed South China Sea to date. From early 2018 through 2021, the PRC regularly utilized its Spratly Islands

outposts to support naval and coast guard operations in the South China Sea. In mid-2021, the PLA deployed an intelligence-gathering ship and a surveillance aircraft to the Spratly Islands during U.S.-Australia bilateral operations in the region.

The PRC has added more than 3,200 acres of land to the seven features it occupies in the Spratlys. The PRC has stated the main objectives of these projects are mainly to improve marine research, safety of navigation, and the living and working conditions of personnel stationed on the outposts. However, the outposts provide airfields, berthing areas, and resupply facilities that allow the PRC to maintain a more flexible and persistent military and paramilitary presence in the area. This improves the PRC's ability to detect and challenge activities by rival claimants or third parties and widens the range of response options available to Beijing

WESTERN THEATER COMMAND

Key Takeaway

- The Western Theater Command is oriented toward India and counterterrorism missions along China's Central Asia borders.

The Western Theater Command is geographically the largest theater command within the PRC and is responsible for responding to conflict with India and terrorist threats in western China. PLA units located within the Western Theater Command include 76th and 77th Group Armies and ground forces subordinate to Xinjiang and Xizang Military Districts; three PLAAF bases, one transportation division, and one flying academy; and one PLARF base. PAP units responsible for internal security operations are also likely under the control of the Western Theater Command.

Within China, the Western Theater Command focuses on Xinjiang and Tibet Autonomous Regions, where the CCP perceives a high threat of separatism and terrorism, particularly among Uyghur populations in Xinjiang. According to the U.S. Department of State's *2021 Country Reports on Human Rights Practices*, in the PRC, "genocide and crimes against humanity occurred during the year against the predominantly Muslim Uyghurs and other ethnic and religious minority groups in Xinjiang." Authorities were reported to have arbitrarily detained more than one million Uyghurs, ethnic Kazakhs, Kyrgyz, and other Muslims in extrajudicial internment camps designed to erase religious and ethnic identities. PRC government officials justified the camps under the pretense of "combatting terrorism, separatism, and extremism," however, greater criticism from the international community, including the United Nations, refute such justifications. Moreover, ethnic oppression of Muslim Uyghurs and other ethnic and religious minority groups in Xinjiang is likely used by extremist organizations as a propaganda and recruiting tool, generating new threats to the region.

Since early May 2020, sustained tensions along the India-China border dominated the Western Theater Command's attention. Differing perceptions of border demarcations along the Line of Actual Control (LAC) combined with recent infrastructure construction, led to multiple unarmed clashes, an ongoing standoff, and military buildups on both sides of the India-China border. In response to a skirmish in June 2020 between PRC and Indian patrols in Galwan Valley—the most violent clash between the two countries in 45 years—the Western Theater Command conducted a large-scale mobilization and deployment of PLA forces along the LAC. Negotiations stalled throughout 2021, with the 13th round of military commander negotiations breaking down in October. Due to the sustained military development along the LAC, the Western Theater Command's deployment will likely continue through 2022.

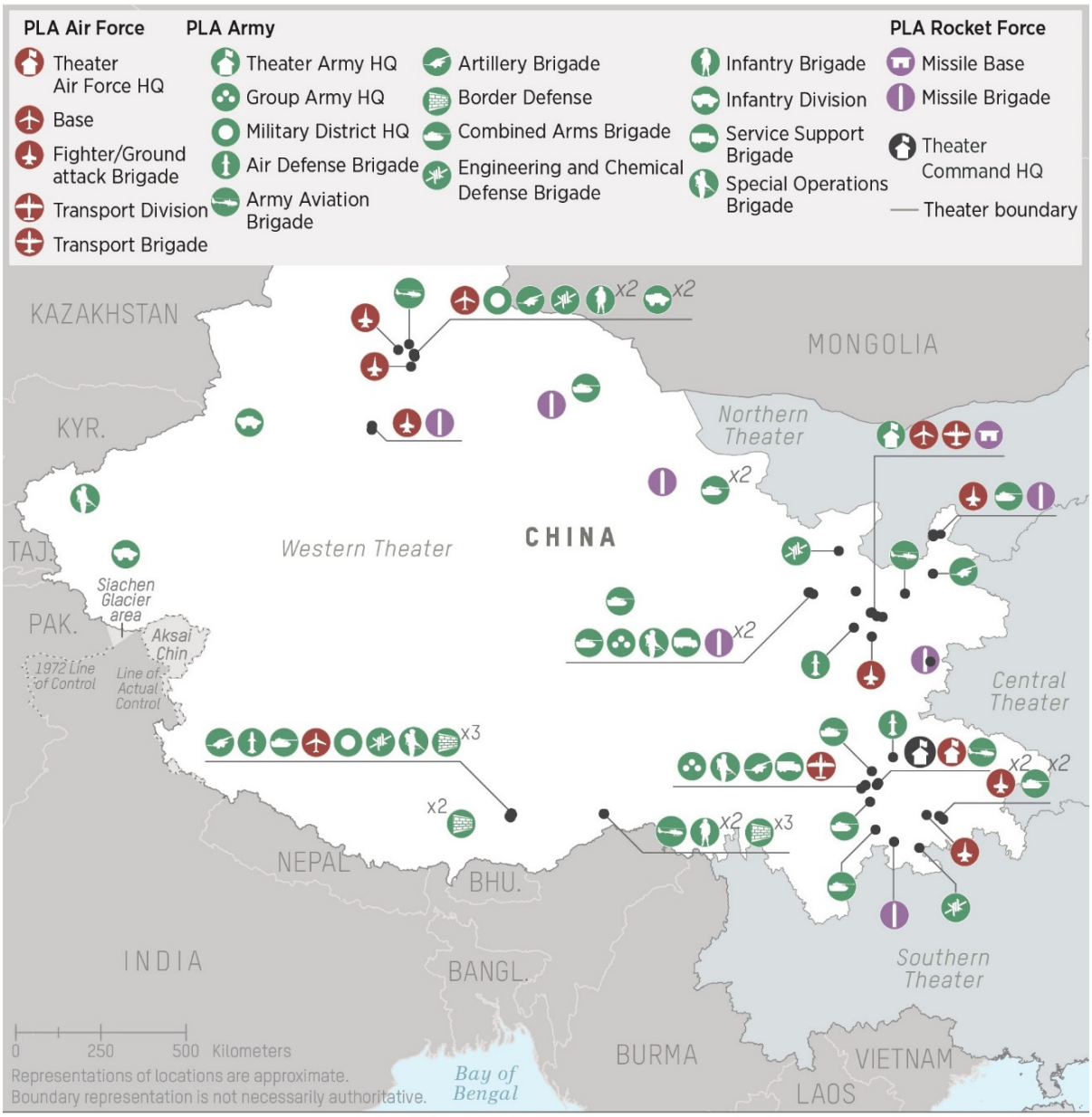
2021 Western Theater Command Leadership

Commander of the Western Theater Command – **General Zhang Xudong [张旭东]**
Rank: General
Current position: Commander of the Western Theater Command
Previous position: Commander of the Central Theater Command Army
DOB: 11/1962
Age: 59
Birthplace: Qian'an, Tangshan, Hebei Province [河北省唐山市迁安市]
Education: N/A

Political Commissar of the Western Theater Command – **General Wu Shezhou [吴社洲]**
Rank: General
Current position: Political Commissar of the Western Theater Command
Previous position: Political Commissar of the Central Theater Command Army and Deputy Political Commissar of the Central Theater Command
DOB: 1958
Age: 63
Birthplace: Hanchuan County, Hubei Province [湖北省汉川县]
Education: N/A

Chief of Staff of the Western Theater Command – **Lieutenant General Rong Guiqing [戎贵卿]**
Rank: Lieutenant General
Current position: Chief of Staff of the Western Theater Command
Previous position: Chief of Staff of the Chengdu Military Region
DOB: 5/1958
Age: 63
Birthplace: Weishi County, Henan Province [河南省尉氏县]
Education: Graduated with a master's degree from the Department of Joint Campaign Command of the PLA National Defense University

Western Theater



CHINA-INDIA BORDER

Key Takeaways

- Throughout 2021, the PLA sustained the deployment of forces and continued infrastructure build up along the LAC.
- Negotiation made minimal progress as both sides resist losing perceived advantages on the border.

Beginning in May 2020, PRC and Indian forces faced off in clashes with rocks, batons, and clubs wrapped in barbed wire at multiple locations along the LAC. The resulting standoff triggered the buildup of forces on both sides of the disputed border. Each country demanded the withdrawal of the other's forces and a return to pre-standoff conditions, but neither China nor India agreed on those conditions. The PRC blamed the standoff on Indian infrastructure construction, which it perceived as encroaching on PRC territory, while India accused China of launching aggressive incursions into India's territory. Since the 2020 clash, the PLA has maintained continuous force presence and continued infrastructure build up along the LAC.

- The 2020 Galwan Valley incident was the deadliest clash between the two nations in the past 46 years. On June 15th, 2020, patrols violently clashed in Galwan Valley resulting in approximately twenty Indian soldiers and the death of four PLA soldiers, according to PRC officials.
- Throughout the standoff, PRC officials sought to downplay the severity of the crisis, emphasizing Beijing's intent to preserve border stability and prevent the standoff from harming other areas of its bilateral relationship with India. The PRC seeks to prevent border tensions from causing India to partner more closely with the United States. PRC officials have warned U.S. officials to not interfere with the PRC's relationship with India.

NORTHERN THEATER COMMAND

Key Takeaway

- The Northern Theater Command is oriented toward the Korean Peninsula and Russian border security.

The Northern Theater Command includes the PRC's provinces bordering Mongolia, Russia, North Korea, and the Yellow Sea. It is responsible for operations along China's northern periphery and border security associated with North Korean, Russia, and Mongolia. PLA units located within the Northern Theater Command include the 78th, 79th, and 80th Group Armies; the Northern Theater Navy and its naval aviation division and two marine brigades;

two operational PLAAF bases, one special mission aircraft division, and one flying academy; and one PLARF base.

During a contingency, the Northern Theater Command likely exercises command over some Strategic Support Force (SSF) units in theater and receives strategic intelligence support from the SSF to improve battlefield awareness and facilitate joint operations within the theater. The North Sea Fleet would be responsible primarily for protecting the sea approaches to northern China, but it could provide mission-critical assets to support other fleets during contingencies located beyond the Northern Theater. In 2021, Northern Theater Command forces conducted various joint and single service training activities including carrier navigation and flight training, and, likely, UAS training.

2021 Northern Theater Command Leadership

Command of the Northern Theater Command – **General Li Qiaoming [李桥铭]**
Rank: General
Current position: Commander of the Northern Theater Command
Previous position: Deputy Commander of the Northern Theater Command
DOB: 4/1961
Age: 60
Birthplace: Yanshi, Henan Province [河南省偃师市]
Education: N/A

Political Commissar of the Northern Theater Command – **General Fan Xiaojun [范骁骏]**
Rank: General
Current position: Political Commissar of the Northern Theater Command
Previous position: Director of the Political Work Department of the PLA Air Force
DOB: 10/1956
Age: 65
Birthplace: Danyang, Jiangsu Province [江苏省丹阳市]
Education: N/A

Northern Theater



RELATIONS WITH NORTH KOREA

Key Takeaways

- The PRC's relations with North Korea remained officially friendly in 2021, but the land border remained closed and North Korea's continued isolation prevented high-level diplomacy.
- The PLA conducts military exercises in preparation for a contingency on the Korean Peninsula.

Throughout 2021, PRC sought to prevent bilateral relations with North Korea from stalling due to Pyongyang's self-imposed COVID-19 isolation, which has prevented high-level diplomatic exchanges. The land border remained closed, but in late 2021, North Korea was reportedly making preparations to reopen it and resume trade with China and Russia. The PRC continues to import North Korean coal by sea, despite United Nations sanctions, and still fails to act against prohibited ship-to-ship transfers in their territorial waters. In October 2021, the PRC and Russia circulated a draft UN Security Council resolution that would lift some sanctions on North Korea, but the Council did not act on the draft.

The PRC's objectives for the Korean Peninsula include stability, denuclearization, and the absence of U.S. forces near China's border. The PRC's focus on maintaining stability on the Korean Peninsula involves preventing North Korea's collapse or military conflict. Toward these ends, the PRC continues to advocate for an approach towards North Korea that prioritizes dialogue, to include the resumption of U.S.-North Korea talks. Beijing urges Washington to acknowledge Pyongyang's "legitimate concerns" and argues that Pyongyang has taken denuclearization measures that merit a commensurate U.S. response, such as sanctions relief.

The PLA conducts military exercises in preparation for a contingency on the Korean Peninsula including air, land, sea, and chemical defense training events. China's leaders could order the Northern Theater Command to engage in a range of operations in the event of a crisis. These could include securing the China-North Korea border to control the flow of refugees, or a military intervention into North Korea to secure weapons of mass destruction or preserve a North Korean buffer state.

CENTRAL THEATER COMMAND

Key Takeaway

- The Central Theater Command's mission is the defense of Beijing while providing support to other theater commands.

The Central Theater Command's primary responsibility is to defend the capital and CCP leadership while providing a strategic reserve to the other theater commands. It is centrally located, connecting the four remaining theater commands. Major military units under the Central Theater Command military include the PLAA's 81st, 82nd, and 83rd Group Armies; the PLAAF's 13th Transport Division, 34th VIP Transport Division, 36th Bomber Division, 15th Airborne Corps, the Shijiazhuang Flying Academy, the Wuhan and Datong PLAAF bases; and one PLARF base.

2021 Central Theater Command Leadership

Commander of the Central Theater Command – **Yi Xiaoguang [乙晓光]**
Rank: General
Current position: Commander of the Central Theater Command
Previous position: Deputy Chief of Staff of the Joint Staff Department
DOB: 6/1958
Age: 63

Birthplace: Shuyang County, Jiangsu Province [**江**苏省沭阳县]

Education: Graduated from the Baoding Aviation School and received master's degree from the PLA National Defense University

Political Commissar of the Central Theater Command – **Zhu Shengling [朱生岭]**
Rank: General
Current position: Political Commissar of the Central Theater Command
Previous position: Political Commissar of the People's Armed Police
DOB: 11/1957
Age: 64

Birthplace: Dongtai, Jiangsu Province [东台市江苏省]

Education: Master's Degree in Military Science

Chief of Staff of the Central Theater Command – **Wang Changjiang [王长江]**
Rank: Vice Admiral
Current position: Chief of Staff of the Central Theater Command
Previous position: Deputy Commander of the Northern Theater Command
DOB: 2/1959
Age: 62

Birthplace: Luanzhou, Tangshan, Hebei Province [**河北省唐山市**滦州是]

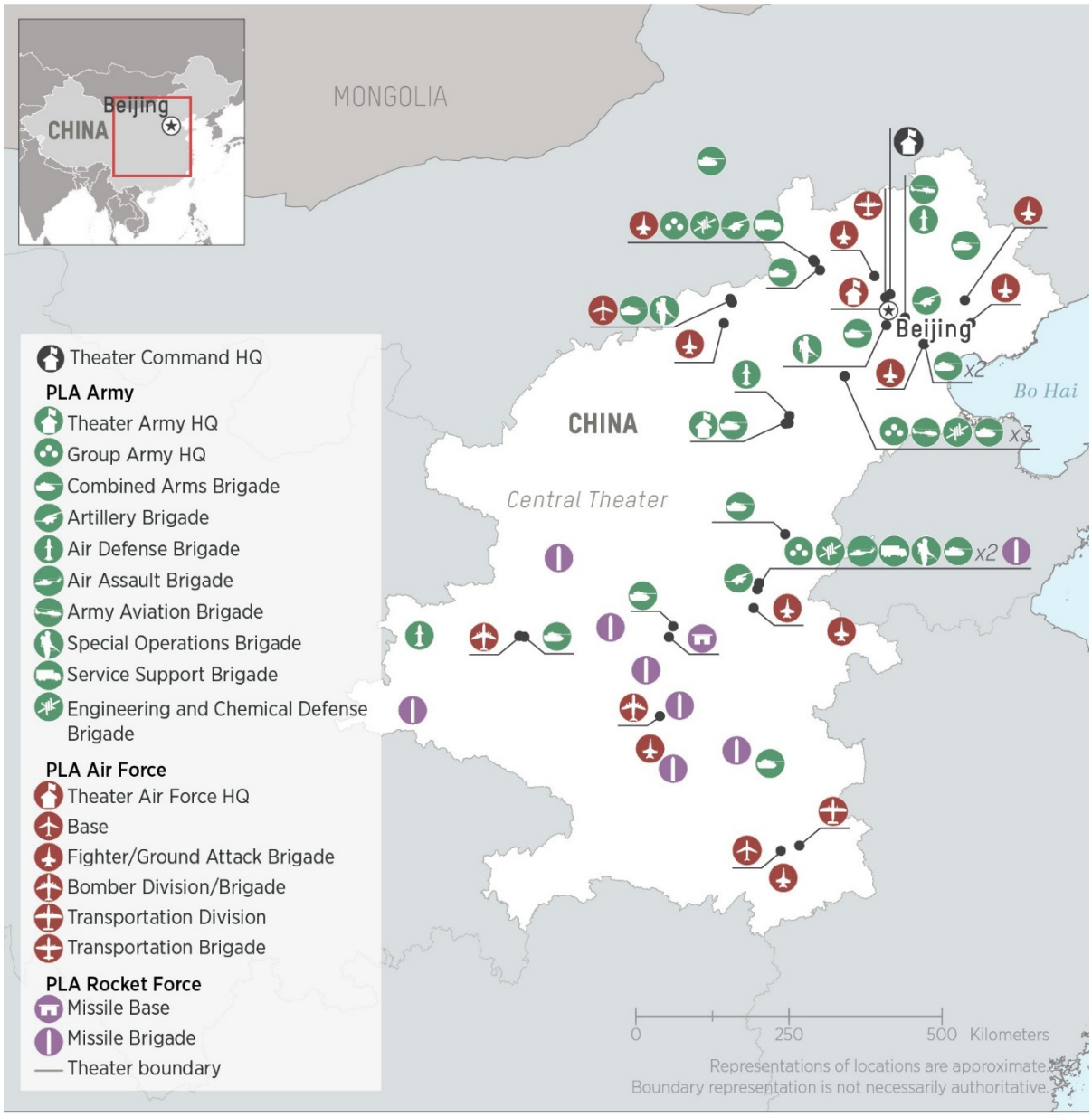
Education: The PLA Air Force's Fourth Aviation Academy

2021 Central Theater Command Activities

On May 31 2021, 16 Ilyushin Il-76 and Y-20 aircraft originating from the Central Theater Command's 13th Transport Division, and possibly the Western Theater Command's 4th Transportation Division, were operating near the contested areas of Malaysian airspace.

On July 20 2021, the Central Theater Command deployed more than 6,000 soldiers and 16,000 militiamen for disaster relief in the flood-stricken area of Henan province.

Central Theater



THE PRC'S STRATEGY & CAPABILITIES DEVELOPMENT IN THE TAIWAN STRAIT

Key Takeaways

- Although the PRC publicly advocates for peaceful unification with Taiwan, the PRC has never renounced the use of military force; the circumstances under which the PRC has historically indicated it would consider using force remain ambiguous and have evolved over time.

- The PRC could conduct a range of options for military campaigns against Taiwan, from an air and/or maritime blockade to a full-scale amphibious invasion to seize and occupy some of its offshore islands or all of Taiwan, with varying degrees of feasibility and risks associated.

Tensions between the PRC and Taiwan heightened in 2021, as the PRC intensified political and military pressure aimed at Taiwan. The PRC continues its suspension of formal communication with Taiwan, which it did in 2016, and remains adamant that Taiwan must accept Beijing's view of the "1992 Consensus" to restart formal engagement. China's leaders have directly equated the "1992 Consensus" to Beijing's "One China principle" which was reaffirmed by General Secretary Xi Jinping in a January 2019 address to "compatriots" in Taiwan.

PRC efforts to conflate foreign one China *policies* with its "One China *principle*"

Beijing's "One China *principle*," established in 1949, according to PRC government white papers, predicates diplomatic relations with the PRC on "recognizing" the "government of the PRC as the sole legitimate government representing the whole of China" and "that Taiwan is part of China."

Since the establishment of the PRC in 1949, countries around the world have enacted respective and unique "One China" *policies* that govern their relations with the PRC and Taiwan. Some countries have endorsed Beijing's "One China *principle*" in their national "One China" *policies*, while other countries have determined to "acknowledge," "understand," or "note" the PRC's position within their respective, national "One China" *policies.* These unique "One China" *policies,* and their attendant joint communiques with the PRC, provide countries around the world with the legal basis upon which each country engages with the PRC and Taiwan.

The United States' one China policy is guided by the Taiwan Relations Act, the three Joint Communiques, and the Six Assurances. Under the three Joint Communiques, the U.S. acknowledged the PRC's position and reaffirmed U.S. interest in a peaceful settlement of

the "Taiwan question." The United States' implementation of the 1982 Communique related to arms sales to Taiwan is guided by President Ronald Reagan's August 17, 1982 internal presidential memo, where he stated the U.S. willingness to reduce its arms sales to Taiwan is conditioned "absolutely" upon the continued commitment of the PRC to the peaceful solution of the Taiwan-PRC cross-Strait differences. The Six Assurances, delivered to Taiwan in 1982, outlined key principles for continued U.S. support for Taiwan.

The PRC has sought to conflate the United States' one China policy, as well as other foreign nations' respective "One China" *policies,* with its own "One China *principle.*" This effort erroneously portrays broad international support for its claim over Taiwan, attempts to legitimize PRC coercion against Taiwan, and make assertions of "broken legal commitments" by countries who engage with Taiwan in ways that Beijing perceives as threatening to its unification objectives.

In October 2021, Taiwan President Tsai Ing-Wen called for a building of consensus around four commitments: 1) to a free and democratic constitutional system; 2) that Taiwan and China should not be subordinate to each other; 3) to resist annexation or encroachment upon the island's sovereignty, and 4) that Taiwan's future be decided in accordance with the will of its people. Xi replied in a 2021 New Year's Eve speech, stating the complete unification of "the motherland" was an aspiration shared by people on both sides of the Strait − referring to Taiwan, which Xi described as "sacred" territory. This speech came a week after Beijing's Taiwan Affairs Office warned that China would take "drastic measures" if Taiwan makes moves towards formal independence.

The PRC appears willing to defer the use of military force as long as it considers that unification with Taiwan could be negotiated over the long-term and the costs of conflict outweigh the benefits. The PRC argues that the credible threat of force is essential to maintaining the conditions for political progress on its terms and preventing Taiwan from making moves toward independence. In January 2019, General Secretary Xi Jinping publicly reiterated the PRC's long-standing refusal to renounce the use of force to resolve the Taiwan issue and its position on peaceful unification under the model of "one country, two systems." In his July 2021 speech, Xi put more emphasis on opposing Taiwan independence than on pressing unification during his tenure. In addition, Xi omitted China's offer of "one country, two systems" including the "protection" of Taiwan's social system, way of life, private property, religious beliefs, and "lawful rights and interests," provided the PRC's "sovereignty, security, and development interests," are ensured. However, the PRC's 2022 Taiwan White Paper published by the Taiwan Affairs Office restated the PRC's preference for peaceful reunification under the "one country, two systems" framework, while maintaining a refusal to renounce the use of force to compel unification, if needed.

Based on changing public sentiment in Taiwan from polling data over recent years, PRC leaders may perceive a closing window of opportunity to subjugate Taiwan under Beijing's "one country, two systems" framework. The PRC in 2021 continued an aggressive pressure campaign against Taiwan and the Tsai administration to curtail Washington-Taipei ties and deter "Taiwan independence." The PRC conducting persistent military operations near Taiwan—and training for a Taiwan contingency—likely signals a greater urgency for the PLA to improve its planning and capabilities should PRC leaders look to a military option to achieve their objectives.

- The circumstances under which the PRC has historically indicated it would consider the use force have evolved over time. These circumstances have included:
  - Formal declaration of Taiwan independence;
  - Undefined moves toward Taiwan independence;
  - Internal unrest in Taiwan;
  - Taiwan's acquisition of nuclear weapons;
  - Indefinite delays in the resumption of cross-Strait dialogue on unification;
  - Foreign military intervention in Taiwan's internal affairs.
- Article 8 of the PRC's March 2005 *Anti-Secession Law* states that the PRC may use "non-peaceful means" if "secessionist forces … cause the fact of Taiwan's secession from China," if "major incidents entailing Taiwan's secession" occur, or if "possibilities for peaceful reunification" are exhausted. The PRC's use of such non-specific conditions increases their policy flexibility through deliberate strategic ambiguity.

PLA Increasing Military Pressure on Taiwan Through 2021, Rising in 2022

Throughout 2021 and into 2022, the PRC has increasingly deployed military means to pressure Taiwan to yield to Beijing's "reunification" objectives and punish Taiwan for perceived transgressions.

The PLA Air Force (PLAAF) markedly increased its air operations inside Taiwan's self-declared Air Defense Identification Zone (ADIZ) in 2021 compared to 2020, with PLAAF aircraft entering the Taiwan ADIZ on 240 days of 2021, according to data published by Taiwan's Ministry of National Defense (MND). Notably, the ratio of advanced PLAAF J-16 fighters in these operations increased throughout 2021 and special mission aircraft operating inside the Taiwan ADIZ on a near daily basis.

Amphibious exercises—training events that would help prepare the PLA for an amphibious assault on Taiwan—also increased in 2021. Moreover, the PLA Navy (PLAN) conducted more than 20 naval exercises with an island-capture element, exceeding the 13 observed in 2020. In one three-month period, the PLAN conducted more than 120 maritime training exercises. The PLA also tested new platforms that could potentially play a key role in an amphibious assault, such as the Type 05 amphibious assault vehicle (AAV), which it used in large numbers for the first time in 2021.

The PLA has continued to erode the status quo across the Taiwan Strait into 2022. In reaction to the U.S. Speaker of the House's Congressional Delegation in early August, the PLAAF flew more than 250 fighter aircraft sorties across the Taiwan Strait median line in August 2022, according to Taiwan MND data. Additionally, in August 2022, the PLA Rocket Force (PLARF) fired multiple ballistic missiles into impact zones in waters around Taiwan, including at least four missiles that overflew Taiwan, according the Japan Ministry of Defense – an unprecedented act. The PLA likely will continue to increase military pressure—in concert with diplomatic, information, and economic pressure—in an attempt to compel Taiwan towards unification.

PRC MILITARY COURSES OF ACTION AGAINST TAIWAN

The PRC continues to signal its willingness to use military force against Taiwan. The PLA has a range of options to coerce Taipei based on its increasing capabilities in multiple domains. The PRC could pursue a measured approach by signaling its readiness to use force or conduct punitive actions against Taiwan. The PLA could also conduct a more comprehensive campaign designed to force Taiwan to capitulate to unification, or attempt to compel Taiwan's leadership to the negotiation table under Beijing's terms. Notably, the PRC would seek to deter potential U.S. intervention in any Taiwan contingency campaign—capabilities relevant to deterring or countering potential U.S. intervention were among those that the PRC highlighted during its October 2019 military parade celebrating its 70th anniversary. Failing that, the PRC would attempt to delay and defeat intervention in a limited war of short duration. In the event of a protracted conflict, the PLA might choose to escalate cyberspace, space, or nuclear activities in an attempt to end the conflict, or it might choose to fight to a stalemate and pursue a political settlement. The PLA could offer the following military options against Taiwan, listed below individually or in combination, with varying degrees of feasibilities and risk associated.

Air and Maritime Blockade. PLA writings describe a Joint Blockade Campaign in which the PRC would employ blockades of maritime and air traffic, including a cut-off of Taiwan's vital imports, to force Taiwan's capitulation. Large-scale missile strikes and possible seizures of Taiwan's offshore islands would accompany a Joint Blockade Campaign in an attempt to compel Taiwan's surrender, while at the same time, posturing air and naval forces to conduct weeks or months of blockade operations if necessary. The PRC likely will complement its air and maritime blockades with concurrent electronic warfare (EW), network attacks, and

information operations (IO) to further isolate Taiwan's authorities and populace and to control the international narrative of the conflict.

Limited Force or Coercive Options. The PRC could use a variety of disruptive, punitive, or lethal military actions in a limited campaign against Taiwan, probably in conjunction with overt and clandestine economic and political activities supported by a variety of information operations to shape perceptions or undercut the effectiveness or legitimacy of the Taiwan authorities. Such a campaign could include computer network or limited kinetic attacks against Taiwan's political, military, and economic infrastructure to induce fear in Taiwan and degrade the Taiwan population's confidence in their leaders. Similarly, PLA special operations forces (SOF) could infiltrate Taiwan and conduct attacks against infrastructure or leadership targets.

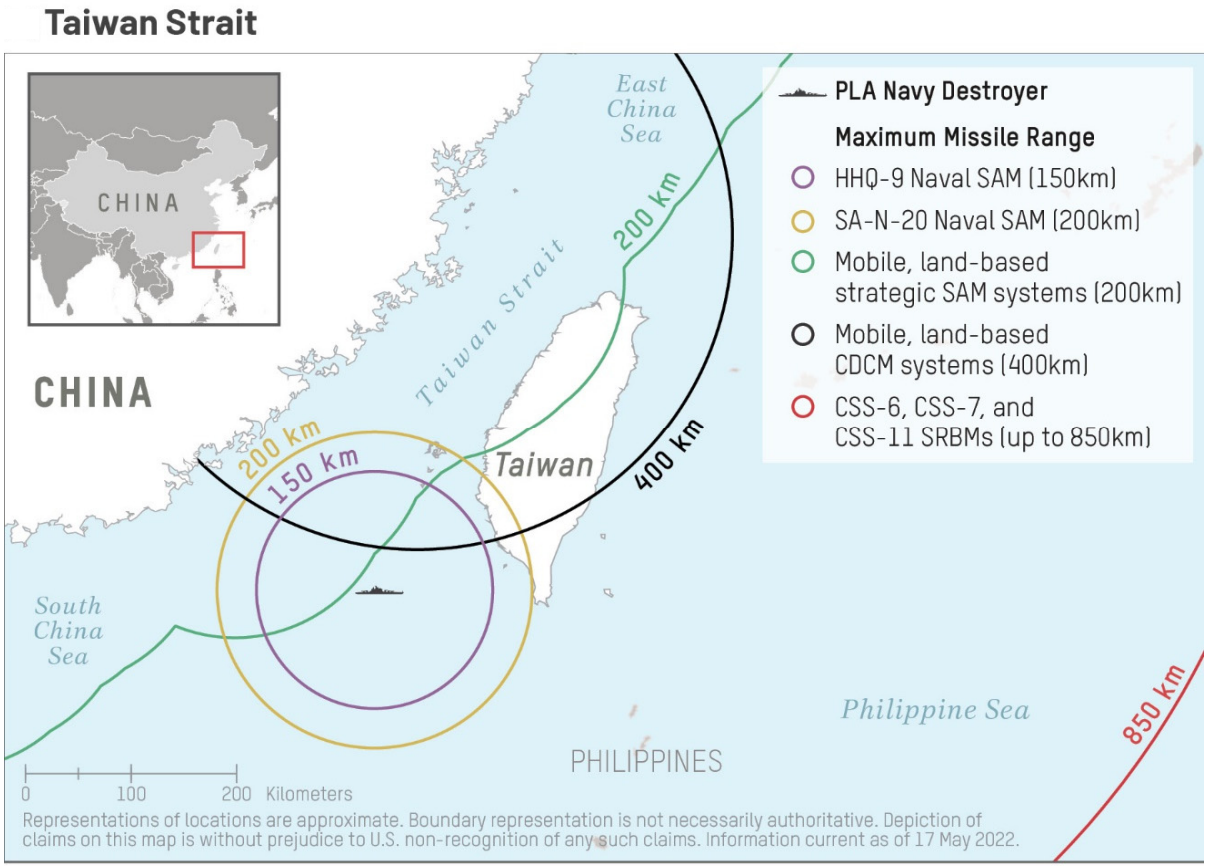
Air and Missile Campaign. The PRC could use precision missile and air strikes against key government and military targets, including air bases, radar sites, missiles, space assets, and communications facilities to degrade Taiwan's defenses, neutralize Taiwan's leadership, or undermine the public's resolve to resist.

Invasion of Taiwan. PRC writings describe different operational concepts for an amphibious invasion of Taiwan. The most prominent of these, the Joint Island Landing Campaign, envisions a complex operation relying on coordinated, interlocking campaigns for EW, logistics, air, and naval support. The objectives are to break through or circumvent shore defenses, establish a beachhead, build up combat power along Taiwan's western coastline, and seize key targets or the entire island.

The PRC continues to build and exercise capabilities that would likely contribute to a full-scale invasion. In 2021, the PLA conducted joint amphibious assault exercises near Taiwan and completed construction of its third LHA. In addition to this capability, the PLA likely will augment their capabilities with civilian "roll on/roll off" ships, under the legal basis of the 2016 National Defense Transportation Law. The PLA experimented with launching amphibious assault vehicles from these civilian ships in July 2020 and summer 2021, allowing them to flow amphibious forces directly to the beach rather than disembarking at port facilities.

Large-scale amphibious invasion is one of the most complicated and difficult military operations, requiring air and maritime superiority, the rapid buildup and sustainment of supplies onshore, and uninterrupted support. An attempt to invade Taiwan would likely strain PRC's armed forces and invite international intervention. Combined with inevitable force attrition, complexity of urban warfare, and potential insurgency, these factors make an amphibious invasion of Taiwan a significant political and military risk for Xi Jinping and the Chinese Communist Party, even assuming a successful landing and breakout.

The PLA is capable of various amphibious operations short of a full-scale invasion of Taiwan. With few overt military preparations beyond routine training, the PRC could launch an invasion of small Taiwan-occupied islands in the South China Sea such as Pratas or Itu Aba. A PLA invasion of a medium-sized, better-defended island such as Matsu or Kinmen is within the PLA's capabilities. Such an invasion would demonstrate military capability, political resolve, and achieve tangible territorial gain while simultaneously showing some measure of restraint. This kind of operation involves significant, and possibly prohibitive, political risk because it could galvanize pro-independence sentiment on Taiwan and generate powerful international opposition.



THE PLA'S CURRENT POSTURE FOR A TAIWAN CONFLICT

PLA Army (PLAA). The PLAA continues to enhance its readiness to prevent Taiwan independence and execute an invasion. Significant reorganizations and amphibious assault training in recent years likely indicate that the Taiwan contingency is a high priority for the Army. Major PLAA contributions to a Taiwan invasion scenario likely include extensive amphibious, army aviation, and air assault operations.

The PLAA fields six amphibious combined arms brigades—four in the Eastern Theater Command (nearest Taiwan) and two in the Southern Theater Command. PLAA units continued amphibious assault training as a single service and with joint service counterparts in 2021. Training events refined the tactics of rapid loading, long-distance transport and beach assault under complicated sea situations, and logistic support capabilities. Press reports also claimed extensive use of sea, air, and ground unscrewed systems in support of the amphibious assault operation. PLAA amphibious brigades reportedly conduct realistic, large-scale amphibious operations that are almost certainly aimed at supporting a Taiwan invasion scenario.

Amphibious trainings were frequent in 2021—in one 3-month period the PLA held more than 120 maritime trainings. They also tested new platforms that would play a key role in an amphibious seizure. In 2021, the PLA debuted the YUSHEN class amphibious assault ship (Type 075) Hainan LHA, designed to improve forces' operational capabilities and vessel maneuver. Additional YUSHEN class hulls are currently under construction. It appears that the PLA is also planning to build a new class of amphibious assault ship—the Type 076. The new Type 076 reportedly will be equipped with electromagnetic catapults, which would enhance its ability to support fixed-wing aircraft and make it somewhat more like an aircraft carrier. 2021 also saw the PLA's most advanced amphibious armored equipment, the Type 05 amphibious assault vehicle (AAV), used in large numbers for the first time. These AAVs represent an upgrade in armor, survivability, and speed from the last-generation Type 63A, and provide the PLA with a more capable amphibious assault platform.

PLA Navy (PLAN). The PLAN is improving its anti-air, anti-surface, and anti-submarine warfare capabilities, further developing an at-sea nuclear deterrence, and introducing new multi-mission platforms capable of conducting diverse missions during peace and war. New attack submarines and modern surface combatants with anti-air capabilities and fourth-generation naval aircraft are designed to achieve maritime superiority within the First Island Chain to deter and counter any potential third-party intervention in a Taiwan conflict.

The PRC's amphibious fleet has in recent years focused on acquiring a modest number of ocean-going amphibious transport docks (LPDs) and amphibious assault ships (LHAs) ships. There is no indication the PRC is significantly expanding its tank landing ships (LSTs) and medium sized landing craft at this time. Although the PLAN has not invested in the large number of landing ships and medium landing craft that outsiders believe the PLA would need for a large-scale assault on Taiwan, it is possible the PLA assesses it has sufficient amphibious capacity and has mitigated shortfalls through investment in other operational capabilities—such as civilian lift vessels and rotary-wing assets— to address this gap. The PLA may also have confidence in the PRC's shipbuilding industry's massive capacity to produce the necessary ship-to-shore connectors relatively quickly.

PLA Air Force (PLAAF). The PLAAF has maintained a ready force posture for a variety of capabilities necessary in a Taiwan contingency. It has acquired a large number of advanced

aircraft capable of conducting operations against Taiwan without requiring refueling, providing it with a significant capability to conduct air and ground-attack operations. A number of long-range air defense systems provide a strong layer of defense against attacks on key military installations or population centers on China's mainland. The PRC's development of support aircraft provides the PLAAF with improved ISR capability to support PLA operations. Additionally, the PLAAF has improved refueling capabilities, expanding its ability to operate further from China and increasing its ability to threaten third party intervention.

PLA Rocket Force (PLARF). The PLARF is prepared to conduct missile attacks against high-value targets, including Taiwan's C2 facilities, air bases, and radar sites, to degrade Taiwan's defenses, neutralize Taiwan's leadership, or break the public's will to fight. 2021 saw an acceleration of the positioning of conventional missiles. PLARF nuclear units will likely be postured to conduct deterrence operations.

Strategic Support Force (SSF). PLA doctrinal writings emphasize the importance of space and cyberspace domains in joint operations. The PRC's 2019 Defense White Paper stated that its armed forces are accelerating the build-up of its cyberspace capabilities, specifically its cyber defenses and its ability to detect and counter network intrusions. PLA writings suggest that the SSF would be responsible for EW and cyberspace operations during a Taiwan contingency, as one of the missions of the force is to seize and maintain information dominance. The SSF 311 Base would be responsible for political and psychological warfare, such as disseminating propaganda against Taiwan to influence public opinion and promote the PRC's interests. The SSF would also play a strategic information and communications support role, centralizing technical intelligence collection and management and providing strategic intelligence support to theater commands involved in a Taiwan contingency.

Joint Logistic Support Force (JLSF). The JLSF's primary goal is to provide joint logistics support to the PLA's strategic and campaign-level operations, such as a Taiwan contingency, by conducting C2 of joint logistics, delivering materiel, and overseeing various support mechanisms.

TAIWAN'S ABILITY TO DETER FORCE

Key Takeaways

- The PRC's multi-decade military modernization effort continues to widen the capability gap compared to Taiwan's military.
- To counter the PRC's improving capabilities, Taiwan is developing new concepts and capabilities for asymmetric warfare.

Taiwan has positioned itself as "a beacon of democracy" to garner international support and expand regional security ties. Taiwan is taking steps to compensate for the growing disparity with the PLA, including building its war reserve stocks, growing its defense-industrial base, improving joint operations and crisis response capabilities, and strengthening its officer and noncommissioned officer corps. Taiwan's Quadrennial Defense Review 2021 reflects adjustments to the military's strategy for defending the island, placing emphasis on protecting its littorals and near-shore coastal areas in a multi-layered defense-in-depth. The modified strategy stresses enhanced asymmetric and joint capabilities, as well as suggesting greater reliance on Taiwan's Air Force and Navy through multi-domain deterrence measures. However, these improvements only partially address Taiwan's defense challenges.

Taiwan's armed forces are authorized to fill approximately 215,000 billets, including 188,000 active duty billets. As of 2021, the Ministry of National Defense accomplished the goal to fill 90 percent of the active duty billets (169,000) with volunteers. As Taiwan transitioned to an all-volunteer force, the cost savings from manpower reductions provided some margin to improve individual pay and benefits, housing, and incentive pay; however, these savings have been insufficient to cover the full increase in manpower-related costs needed to attract and retain personnel under the new system. Taiwan also faces considerable equipment and readiness challenges. Reservists and civil defense volunteers support the active duty forces. Taiwan's reserves number approximately 2.3 million, roughly 750,000 of which participate in refresher training. In 2021, Taiwan passed legislation to establish an organization within its national security structure to improve whole of society mobilization to support defense.

Taiwan continues to increase its defense budget in order to support defense acquisitions and bolster its forces against PRC pressure. In 2020, the Tsai administration announced defense spending to be the highest level since 1990. Taiwan announced a further 10 percent increase from the previous year, bringing the 2021 defense budget to NT$453 billion ($15.4 billion), and representing more than 2% of Taiwan's GDP. Meanwhile, China's official defense budget continues to grow and is about 17 times larger than Taiwan's defense budget, with much of it focused on developing the capability to unify Taiwan with the PRC by force. Recognizing the growing disparity between their respective defense expenditures, Taiwan has stated that it is working to develop new cost effective concepts and capabilities for asymmetric warfare. Some specific areas of emphasis include offensive and defensive information and electronic warfare, high-speed stealth vessels, shore-based mobile missiles, rapid mining and minesweeping, unmanned aerial systems, and critical infrastructure protection. Taiwan has also dedicated significant defense spending toward its domestic submarine program, upgrading its existing F-16 fighters, as well as producing four transport docks and four minelaying ships to supplement its navy.

Consistent with the TRA, the United States contributes to peace, security, and stability in the Taiwan Strait by providing defense articles and services to enable Taiwan to maintain a sufficient self-defense capability. From fiscal year 2019 to 2021, the United States has notified

approximately $17 billion in potential arms sales to Taiwan, including 66 F-16 Block 70 fighter jets, 108 M1A2T Abrams tanks, four MQ-9 Reaper surveillance drones, Patriot missile system components, 250 Stinger missiles, 18 Mk-48 Mod 6 heavyweight torpedoes, artillery rocket systems, Paladin howitzers, 100 Harpoon coastal defense cruise missile systems, and AGM-84 SLAM-ER missiles.

CHAPTER FOUR: THE PLA'S GROWING GLOBAL PRESENCE

Key Takeaways

- CCP leaders view the PLA's growing global presence as an essential part of the PRC's international activities to create an international environment conducive to China's national rejuvenation.
- The CCP has tasked the PLA to develop the capability to project power outside China's borders and immediate periphery to secure the PRC's growing overseas interests and advance its foreign policy goals.

The CCP continues its goal to create international conditions that are conducive to the PRC's development and compatible with its aspirations for the PRC's rejuvenation as a "great modern socialist country." CCP leaders believe that the PRC's global activities, including the PLA's growing global presence, contribute to creating a "favorable" international environment for the PRC's national rejuvenation. This evolving approach parallels the Party's view that the initial decades of the 21st century represent a "period of strategic opportunity" to focus on building the PRC's comprehensive national power.

The CCP has tasked the PLA to develop the capability to project power outside China's borders and immediate periphery to secure the PRC's growing overseas interests and advance its foreign policy goals. The PRC is focusing efforts to develop security relationships with key countries along its periphery. In addition to promoting BRI, the PRC has begun to seek new cooperative security partnerships with foreign nations, including the expansion of the PLA's global military attaché presence and access, expansion of strategic partnerships, and ensuring more reliable, cost-effective, and diverse sources of energy and other strategic resources.

The PRC probably will continue to expand the PLA's global military presence through humanitarian assistance, naval escorts and port calls, UN peacekeeping operations (PKO), arm sales, influence operations, and bilateral and multilateral military exercises. Through these engagements, Beijing can strengthen and expand its diplomatic relationships to advance its foreign policy goals, to include shaping the international system to align with the PRC's interests, gaining operational experience for the PLA, and attracting foreign interest in hosting PLA bases abroad.

CHINA'S GLOBAL MILITARY ACTIVITIES

Key Takeaways

- The PRC has increasingly determined that its armed forces should take a more active role in advancing its foreign policy goals.

- As the PRC's overseas interests have grown over the past two decades, the Party's leaders have increasingly pushed the PLA to think about how it will develop the capabilities to operate beyond China's borders and its immediate periphery to advance and defend these interests. This has led to the PRC's greater willingness to use military coercion—and inducements—to advance its global security and development interests.

- In 2021, the PLA continued to normalize its presence overseas, build closer ties to foreign militaries, and provide COVID-19 related aid. In late 2021, China and Cambodia attended a groundbreaking ceremony for the construction of a military police shooting range. Around the same time, PRC medical experts from the PLA General Hospital provided online training to PRC doctors assigned to PRC peacekeeping forces overseas.

The PLA's Evolving Missions & Tasks. In 2004, one of the "new historic missions" given to the PLA by then-President Hu Jintao was to support China's overseas interests and diplomacy. The PLAN's evolving focus—from "offshore defense" to "open seas protection"—reflects the PLAN's interest in a wider operational reach. The PLAAF's missions and tasks have similarly evolved towards conducting operations beyond China and its immediate periphery, and supporting the PRC's interests by becoming a "strategic" air force. Additionally, the PLA has embraced its concept of non-war military activities (NWMA) as an effective way to support and safeguard the PRC's development, expand the PRC's global interests, and gain valuable operational experience.

The PLAN, PLAAF, PLAA, and SSF have deployed abroad for counterpiracy, humanitarian assistance and disaster relief (HA/DR), peacekeeping, training exercises, and space support operations. Within the PLA, the PLAN has the most experience operating abroad due to its far seas deployments and counterpiracy missions, the PLAAF likely has the most experience conducting rapid response HA/DR operations abroad, and the PLAA has the most experience conducting peacekeeping operations. The SSF operates tracking, telemetry, and command stations in Namibia, Pakistan, Argentina, and Kenya. The SSF also has a handful of Yuan Wang space support ships to track satellite and intercontinental ballistic missile (ICBM) launches.

- Increasingly, the PLAN is operating outside of its home waters in places that include the Middle East, Europe, Africa, South Asia, Southeast Asia, Oceania, and Latin America. The PLAN has also conducted submarine deployments to the Indian Ocean,

demonstrating its increasing familiarity in that region and underscoring the PRC's interest in protecting sea lines of communication (SLOCs) beyond the South China Sea. In 2015, three PLAN ships from a Gulf of Aden naval escort task force evacuated 629 PRC citizens from Yemen to Djibouti and Oman.

- Since 2002, the PLAAF has delivered aid after natural disasters throughout Southeast Asia and South Asia, assisted with evacuation from Libya in 2015. The PLAAF has delivered COVID-19 related aid to multiple countries including Myanmar, Vietnam, Pakistan, and Tunisia.

Military Cooperation. As China's regional and international interests grow increasingly complex, the PLA's international engagements likely will continue to expand. Beijing often relies on senior military visits, bilateral and multilateral exercises and training, and peacekeeping and military assistance to promote China's foreign policy objectives. For example, through 2021, Beijing continued to conduct global "vaccine diplomacy" with Cambodia, Pakistan, Mongolia, Sudan, Zimbabwe, and Ethiopia, among other countries, which has allowed China to deepen bilateral relations and set itself up as a global leader. As part of this COVID assistance, China has also donated personal protective equipment to more than 50 countries throughout 2021 and has deployed its naval hospital ship nine times over the past ten years to provide medical services for more than 40 countries and regions.

PRC has sought to gain security access through policing cooperation agreements and is likely to continue seeking these agreements. Following domestic unrest and riots in the Solomon Islands that threatened Chinese property and nationals in late 2021, Beijing offered to provide Honiara with policing assistance.

While senior-level military visits and international exchanges remained limited throughout 2021 due to the pandemic, China continued to promote selective military engagements, such as signing a revised memorandum of understanding with the Republic of Korea regarding the establishment and use of direct communication lines between their respective air forces and navies in March 2021. China may have used these engagements as an opportunity to observe foreign military command structures, unit formation, operational training, and shaping foreign approaches to shared security concerns. In 2021, China's Minister of National Defense, General Wei Fenghe, led delegations to Sri Lanka, Vietnam, Bangladesh, Singapore, and Tajikistan, where he also met with Russian Defense Minister General Sergey Shoygu. Wei undertook these visits to further promote bilateral relations and, in the case of the meeting with Shoygu, to demonstrate China's solidarity and expanding relationship with Russia.

The PRC continues to expand the PLA's participation in bilateral and multilateral military exercises, normalizing the PLA's presence overseas and establishing ties to foreign militaries. For example, in 2021, the PLA participated in seventeen bilateral or multilateral exercises, including hosting Russian forces for Interaction-2021, as well as Peace Mission 2021 along with forces from other Shanghai Cooperation Organization (SCO) militaries including

Kazakhstan, Tajikistan, Kyrgyzstan, India, Pakistan, and Uzbekistan. China also hosted forces from Pakistan, Mongolia, and Thailand in Queshan County, Henan Province for Shared-Destiny-2021, a multinational peacekeeping exercise. Additionally, China partnered with Iran and Russia for joint naval drills in February of 2022. For a list of selected PLA bilateral and multilateral exercises in 2021, see Appendix III.

In recent years, the PRC has expanded its efforts on global peacekeeping and increased contributions to multilateral organizations, particularly in Africa. The PRC currently has more than 2,500 forces participating in peacekeeping missions worldwide, of which approximately 1,800 are performing missions in several countries and regions. The PLA also deploys regular convoys in the Gulf of Aden, and has a number of forces stationed in Lebanon. China's peacekeeping forces have provided a wide variety of services, including medical training and support, minesweeping efforts to include donating mine clearance equipment, and repair and construction of key infrastructure.

Military Attaché Presence. China's military attaché presence has grown around the world, which reflects its increasing global interests. Military attaches manage much of the PLA's day-to-day military diplomacy efforts using PLA military attachés in over 110 offices worldwide. The attachés serve as military advisors to the ambassador, support Ministry of Foreign Affairs and PLA foreign policy objectives. They also perform a variety of duties tied to PLA military and security cooperation, including counterpart exchanges with host-nation and third-country personnel. Additionally, attachés may conduct clandestine and overt intelligence collection on their areas of assignment. Although the general function of an attaché office is the same worldwide, attaché offices probably prioritize different specific missions or diplomatic priorities based on China's defense objectives across different countries.

China's military attaché offices vary in size, generally ranging from two to ten officers. Most offices consist of just a few accredited officers; however, offices in countries considered important to China's strategic interests are often considerably larger, potentially including multiple assistant attachés, dedicated naval or air force attachés, and support staff.

Counterterrorism. Beijing is implementing its global counterterrorism (CT) strategy through international outreach that spans across diplomatic and military domains to garner the assistance of partner governments to prevent terrorist attacks in China and against PRC citizens abroad. China routinely lobbies foreign partners to extradite alleged Uyghur extremists, pursues formal extradition treaties with countries with large Chinese diaspora populations and seeks public endorsement of its CT efforts in multilateral forums. Beijing further leverages involvement in regional security forums, joint border patrols, and international exercises to press its neighbors into adopting China's approach to CT operations.

Counterpiracy Efforts. In 2021, China continued to conduct counterpiracy operations within the Gulf of Aden and Somali waters by deploying its 37th, 38th, 39th and 40th naval escort task

forces to the area since 2008. The 39th Task Force escorted 48 Chinese ships and foreign ships while voyaging over 90,000 nautical miles in over 165 days. At the conclusion of deployments, these task groups usually conducted port calls and bilateral engagements with host-country militaries and local Chinese communities, providing additional opportunities for PLA military diplomacy. However, it is unclear if this activity has resumed, likely due to continued concerns about the COVID-19 pandemic.

Peacekeeping Operations. In 2022, the PRC continued to contribute the largest number of forces among the permanent members of the United Nations (UN) Security Council. The PRCs participation in UN Peacekeeping Operations (PKO) supports the PRC's objectives of highlighting its role as a global actor and obtaining operational experience for the PLA. The PRC could use its role in nine UN PKOs to collect intelligence on other UN units, and supporting these missions demonstrates the PLA's ability to operate outside of China's borders. The PRC provides PLA forces and other personnel to several UN PKOs, primarily across Africa and in Lebanon. For the PRC, contributing PLA forces to UN peacekeeping operations is one of several measures it employs to support its country's engagement across the African continent to expand its foreign policy goals. Beijing continues to provide PLA personnel to UN operations in Mali, Moroccan Sahara, Sudan and South Sudan, Cyprus, and Lebanon. PRC personnel deployed to peacekeeping operations consist of forces, police, staff officers, and experts that include engineers, medical professionals, and logisticians. As of the end of 2021, the PRC was the ninth largest contributor of personnel to the UN PKOs with approximately 2,235 personnel among nine UN PKO missions in Africa and the Middle East. The PRC's force contributions decreased from 2,548 personnel in October 2020 to 2,235 at the end of 2021. The PRC is the second largest financial contributor to UN PKOs and has funded 15 percent of the total $6.38 billion 2021-2022 UN PKO budget.

Military Education Collaboration. Beijing considers establishing international professional military education (PME) to create transnational networks of alumni, establish the doctrinal foundation for globally integrated operations, and strengthen China's defense and security ties. Over the past decade, China has increased its military exchange programs with a bias toward junior officers. Nearly half of the 70 military academies operating in China admit foreign students but only a few offer senior-level education. The College of Defense Studies of the PLA National Defense University (PLA NDU) is the highest level of training for foreign officers offered by the Chinese People's Liberation Army. In addition to training foreign senior military officials, PLA NDU conducts international exchanges and academic discussions on defense and security issues. The PLA NDU has accepted students from more than 100 partner nations and has pursued relationships with Latin American and African militaries.

Although third countries have historically perceived Chinese PME as less prestigious than Russian or U.S. PME, Beijing's growing economic clout and expanded global security presence has bolstered the international reputation of Chinese programs. For example, PLA

NDU offers students higher stipends and greater exposure to Chinese technological and scientific innovations (such as military applications of AI) than Russian schools.

China also cultivates transnational alumni and shared doctrinal understanding through short-term course offerings. Since 2002, the PLA NDU sought to increase exchanges with the international military community by sponsoring security seminars annually, which aim to foster cooperation, strengthen military exchanges, and attempt to impart a common approach to issues of interest to the community. The PLA NDU has received thousands of students from over 90 countries; it also maintains regular contacts with military academies in more than 10 countries in addition to over 140 countries' militaries.

Despite the PLA's progress to enhance its PME programs, cultural and linguistic barriers limit the effectiveness of PRC PME. For example, foreign student and host nation student contacts and opportunities for interaction are limited owing to the separation between Chinese and foreign language courses. Additionally, PRC military schools rarely consider root causes of the security problems they teach their students despite a detailed dive into the problems themselves. Lastly, military ethics and human rights are off-limits for discussion within the PLA NDU curriculum; students are prohibited from criticizing Beijing's record in these areas, whether they are Chinese or foreign.

PRC Influence Operations. The PLA views controlling the information spectrum in the modern battlespace as a critical enabler and means of achieving information dominance early in a conflict. Since the early 2000s, as part of the PRC's overall influence operations, the PLA has been developing the "Three Warfares" concept, which calls for the coordinated use of public opinion warfare, psychological warfare, and legal warfare. Public opinion warfare creates and disseminates information to guide an adversary's public opinion and gain support from domestic and foreign audiences. Psychological warfare uses propaganda, deception, and coercion to induce pressure and affect the behavior of the target audience. Legal warfare uses domestic and international laws to shape narratives that advance PRC interests and undermine those of an adversary. The PLA likely seeks to couple digital influence activities with the "Three Warfares" concept to demoralize adversaries and influence domestic and foreign audiences during conflict.

From the CCP's perspective, influence operations are undertaken by all nations, especially the United States, which Beijing believes uses digital narratives, to undermine the CCP's governance system in the PRC. Thus in the CCP's view, the PRC's influence operations are a means to counter this perceived subversion and are considered a defensive measure to protect the party and the military.

At the heart of the PRC's influence operations is the CCP's ability to maintain its stable and continued governance of China. Domestically, the CCP uses influence activities to protect the PLA's image to the public and garner their support for the military. Internationally, Beijing aims to create an information environment favorable to its strategic objectives. The PRC

conducts influence operations that target media organizations, business, academic, cultural institutions, Chinese diaspora communities, and policy communities of the United States, other countries, and international organizations, to shape public discourse and achieve outcomes favorable to its strategic and military objectives.

PRC influence operations are coordinated at the high level and executed by a range of actors, such as the PLA Political Work Department, United Front Work Department (UFWD), International Liaison Department, the Ministry of State Security (MSS), and the PLA Strategic Support Force (SSF). The CCP likely seeks to condition international institutions and public opinion to accept the PRC's narrative surrounding its priorities such as the "inevitable rise" of the PRC as a great power, Beijing's "one China principle" on Taiwan unification, the Belt and Road Initiative, political control over Hong Kong, and territorial and maritime claims in the South China Sea and East China Sea.

The PRC almost certainly will increase its influence over foreign governments using a combination of diplomatic, economic, and defense engagements tools. Beijing engages in such activities to promote its interests abroad while undermining U.S. influence. PRC influence operations take advantage of corruption where present and can include lobbying, bribing, or cultivating foreign politicians. PRC influence operations also aim to inject Chinese cultural narratives or values into foreign education systems, bridging academic or think tank researchers' access to China, and flooding Chinese language media abroad, all of which can be accomplished via diplomacy or coercive means. A foundation of the PRC's influence strategy includes appealing to overseas PRC citizens or ethnic Chinese of other countries as indirect proxy to assert the CCP's objectives through soft power engagements. The PRC also uses threats, blackmail, and other forms of coercion to force members of Chinese diaspora communities to assist in carrying out Beijing's priorities. As part of this strategy, the PRC often targets Uyghurs overseas with threats to imprison their family members in China. Furthermore, the UFWD collaborated with overseas Chinese communities in Latin America and Caribbean countries in order to shape positive views of China that would better facilitate economic ties. Additionally, the PRC's hundreds of known "talent recruitment programs," such as the Thousand Talents, target ethnic Chinese and non-Chinese scientists and experts around the world to support a systematic strategy of identifying and acquiring technologies critical to the PRC's scientific and technical modernization.

The PRC has also demonstrated its intent to use multilateral forums and organizations to expand its defense influence and security cooperation while establishing a leadership role in those organizations. The PRC promotes strategic messaging by portraying China as a responsible global actor through organizations such as the World Trade Organization, Association of Southeast Asian Nations, and the Brazil, Russia, India, China, and South Africa (BRICS) mechanism. Additionally, the PRC augments this strategic communication with "forum diplomacy," the creation of regional diplomatic bodies such as the Forum on

China-Africa Cooperation, the China-CELAC Forum, the China-Arab States Cooperation Forum, and the China-Central Central Eastern Cooperation Framework.

The PRC uses overt and covert messaging vectors, such as the Internet, social media platforms, and military cyberspace capabilities during peacetime and wartime. The PLA's goals for social media influence operations can fall into three broad categories: promote a narrative favorable to the PRC, undermine adversary resolve, and shape foreign governments' policies in favor of Beijing's interests. The PLA views social media through the prism of information dominance and during a crisis, the PRC could use digital influence operations to undermine enemy morale and confuse or deceive adversary decision makers. Most Chinese media platforms, including traditional and digital newspaper, and television programs, are either state-owned or heavily influenced by Beijing to augment the CCP's response to geopolitics and often take on a more aggressive messaging tone.

The creation of the PLA SSF in 2015 reflected that the CCP understood cyberspace operations as the primary mean for psychological manipulation. As the PLA seeks to expand the reach of its influence operations around the world and seize information dominance on the battlefield, it is researching and developing the next evolution of psychological warfare called cognitive domain operation (CDO) (认知领域作战) that leverages subliminal messaging, deep fakes, overt propaganda, and public sentiment analysis. The PLA views CDO as a more aggressive form of psychological warfare that it could employ across a range of domains to influence an adversary's cognitive functions.

The CCP has consistently framed the United States and the broader Western community as a threat to its interests and security. This has enabled Beijing to continue expanding the target audience of its influence campaigns to discredit the United States, amplify the PRC's great power narratives, and reorder the Indo-Pacific region to China's advantage.

China's Energy Supplies. In 2021, China imported approximately 10.3 million barrels per day of crude oil, which met about 72 percent of its needs, according to an industry report. China continues to build its crude oil emergency petroleum reserve (EPR) capacity to safeguard against supply disruptions with a goal to have the equivalent of 90 days' worth of imports—about 1.25 billion barrels—in storage. China's EPR storage capacity is approximately 600 million barrels, according to industry data. China met about 45 percent of its natural gas demand with imports in 2021, and industry experts estimate that China's natural gas imports will increase to about 50 percent by 2035. In 2021, most of China's oil and natural gas imports came from Africa, Central Asia, the Persian Gulf, and Russia. China's investments in transport networks for oil and gas could help diversify its supply and reduce dependency on strategic chokepoints such as the Strait of Malacca.

China relies on maritime routes that transit the South China Sea and Strait of Malacca for most of its hydrocarbon deliveries. Approximately 76 percent of China's oil imports and 23

percent of its total natural gas imports transit the South China Sea and Strait of Malacca. Despite China's efforts to diversify energy suppliers, the sheer volume of oil and natural gas imported from Africa and the Middle East will make securing strategic maritime routes a priority for Beijing for at least the next 15 years.

Crude oil pipelines from Russia and Kazakhstan to China demonstrate China's interest in increasing overland fuel supply. In 2021, China imported about 600,000 barrels per day of Russian crude oil via the East Siberia–Pacific Ocean pipeline, which has a total designed capacity of 1.6 million barrels per day. China also imports crude oil from Middle Eastern—primarily Saudi—and African suppliers via a crude oil pipeline across Burma. This 440,000-barrels-per-day pipeline bypasses the Strait of Malacca by transporting crude oil from Kyaukpyu, Burma, to Yunnan Province, China, and reduces shipping time by more than a third.

In 2021, approximately 20 percent of China's natural gas imports came from Turkmenistan via a pipeline that runs through Kazakhstan and Uzbekistan. This pipeline can transport 55 billion cubic meters per year; Turkmenistan and China are planning to expand it to 80 billion cubic meters per year. A natural gas pipeline connecting China to Burma can deliver 12 billion cubic meters per year, but only 4.1 billion cubic meters of gas was shipped in 2021. In early December 2020, the middle section of the China-Russia East natural gas pipeline—which is connected to the Power of Siberia pipeline—began operations, which will increase gas supply to 27 million cubic meters per day. The pipeline is projected to reach an annual capacity of 38 billion cubic meters per year by 2025.

China in the Polar Regions. China has increased activities and engagement in the Arctic region since gaining observer status in the Arctic Council in 2013. In May 2019, China hosted the Arctic Circle China Forum in Shanghai where PRC Officials highlighted Beijing's interest in expanding its partnership with countries along the Polar Silk Road. In January 2018, China published its first Arctic strategy that promoted a "Polar Silk Road" and declared China to be a "near-Arctic State." The strategy identifies Beijing's interests as access to natural resources, sea lines of communication, and promoting an image of a "responsible major country" in Arctic affairs. The strategy highlights China's icebreaker vessels and research stations as integral to implementation. During the 2019 Arctic Circle China Conference, PRC officials underlined the importance of China's role in protecting the Arctic environment.

China maintains research stations in Iceland and Norway and operates two icebreaking research vessels. The first is the Xue Long, which in 2017 became the first Chinese official vessel to traverse Canada's Northwest Passage, and in September 2019, completed the 10th Arctic expedition, which focused on research on the Arctic environment. In 2018, Beijing launched its second icebreaking research vessel, the Xue Long 2. The Xue Long 2 can break ice up to 1.5 meters thick, compared to the Xue Long's maximum of 1.2 meters. Furthermore, the Xue Long 2 is the first polar research vessel in the world that can break ice while moving forwards or backwards. In July 2021, the Xue Long 2 commenced the PRC's 12th Arctic

expedition, during which researchers studied the ecosystem and new pollutants in Arctic waters. The Xue Long 2 explored the Gakkel Ridge in order to learn about the formation of rocks and magma and the geomorphic features. During the 12th Arctic Expedition, the PRC deployed an autonomous underwater vehicle (AUV) for the first time in the Arctic Ocean. In November 2020, the Xue Long 2 embarked on the PRC's 37th Antarctic expedition, where researchers planned to carry out hydrological, meteorological and environmental studies, and monitor new pollutants such as microplastics and drifting garbage in the Antarctic Ocean.

The PRC's expanding Arctic engagement has created new opportunities for engagement between the PRC and Russia. Russian Foreign Minister referred to the PRC as Russia's "priority partner" in the Arctic. In April 2019, China and Russia established the Sino-Russian Arctic Research Center. PRC and Russia plans to use this center to conduct a joint expedition to research optimal routes of the Northern Sea Route (NSR) and climate change were probably limited due to a continuation of the COVID-19 pandemic.

In mid-2021, during a virtual summit between PRC President Xi Jinping and Russian President Vladimir Putin, the PRC and Russia agreed to deepen cooperation in the Arctic and strengthen collaboration on the use of the NSR. The PRC and Russia support further cooperation on commercial issues, energy development, and infrastructure projects such as the Yamal LNG project in north-central Siberia and LNG 2, a notional second natural gas plant which Russia and the PRC signed agreements for in 2018. In 2019, Russia and China also agreed to found a joint Arctic research center, furthering their academic cooperation alongside economic measures. As of late 2021, PRC banks agreed to provide 2.5 billion rubles, although the PRC continued to raise the issues of Yamal LNG dividend taxation. However, some limitations and potential bilateral friction points remain. In 2019 and in 2022, Russia proposed regulations governing the passage along the Northern Sea Route, which would have required foreign warships to give Moscow 45 days' notice of their intention to transit and to have a Russian pilot on board, and would have reserved Moscow the right to refuse passage. Additionally, Russian experts have noted private Russian objections to China's "Polar Silk Road" concept, saying it undermines a Russian-led Northern Sea Route.

The PRC is also increasing its presence in the Antarctic through scientific projects, commercial ventures, and infrastructure and capability investments, likely intended to strengthen its position for future claims to natural resources and maritime access. The PRC's strategy for Antarctica includes the use of dual-use technologies, facilities, and scientific research, which are likely intended, at least in part, to improve PLA capabilities. Beijing's 2015 National Security Law identifies polar regions, along with deep sea and outer space, as areas for development and exploitation.

China-Russia Relations. Throughout 2021, Russia and the PRC continued to broaden their strategic diplomatic, informational, military and economic cooperation, primarily aimed countering the United States. PRC leaders, including PRC President Xi Jinping, have reiterated on multiple occasions the strength and commitment toward sustaining Sino-Russian

relations. In August 2021, more than 13,000 Russian and Chinese military personnel reportedly conducted joint land and air operations within Chinese territory as part of Western Joint 2021. China and Russia probably used their participation in WESTERN JOINT/ZAPAD INTERACTION 2021 to signal the strength of Sino-Russian cooperation rather than to improve interoperability. Separately, both navies conducted joint operations in the Sea of Japan in October 2021 as part of Joint Sea 2021. The PRC and Russia likely perceive further cooperation between the two militaries, including joint defense technology development, exercises, and other military modernization initiatives, as advantageous to their respective interests. Ahead of Russia's invasion of Ukraine, on February 4, 2022, PRC President Xi Jinping and Russian President Vladimir Putin released a joint statement underscoring China and Russia's commitment to "deepening strategic coordination of mutual support." The PRC has maintained rhetorical and diplomatic alignment with Russia before, following, and during Russia's invasion of Ukraine. Despite on-going military cooperation, the PRC and Russia continue to stop short of characterizing its partnership as a formal alliance with mutual security guarantees.

China-Iran Relations. Since at least 2018, China has pursued closer economic and military ties with Iran, with the two countries signing a memorandum of understanding on intelligence and security cooperation in 2018. In 2020, PRC and Iranian diplomats signed the China-Iran 25-year Comprehensive Strategic Partnership agreement, which paved the way for an expanded PRC presence in Iran's banking, telecommunications, and infrastructure, and locked in discounted oil sales for China. Additionally, China and Iran—along with Russia—have conducted three joint naval exercises in the Indian Ocean since 2019, most recently in February 2022, titled the Maritime Security Belt Combined Exercises. Despite these activities, however, the threat of sanctions related to Iran's nuclear ambitions have probably limited China's appetite for investing in Iran, particularly after secondary sanctions stemming from Huawei's activities in Iran led to the arrest of Huawei CFO Meng Wanzhou in 2018.

PLA OVERSEAS BASING AND ACCESS

Key Takeaways

- The PRC is seeking to expand its overseas logistics and basing infrastructure to allow the PLA to project and sustain military power at greater distances.
- A global PLA military logistics network could disrupt U.S. military operations as the PRC's global military objectives evolve.
- Beyond the PLA support base in Djibouti, the PRC is very likely already considering and planning for additional military logistics facilities to support naval, air, and ground forces projection.

- The PRC has likely considered Myanmar, Thailand, Singapore, Indonesia, Pakistan, Sri Lanka, United Arab Emirates, Kenya, Equatorial Guinea, Seychelles, Tanzania, Angola, and Tajikistan among other places as locations for PLA military logistics facilities.

The PRC is seeking to establish a more robust overseas logistics and basing infrastructure to allow the PLA to project and sustain military power at greater distances. Beijing may assess that a mixture of military logistics models, including preferred access to commercial infrastructure abroad, exclusive PLA logistics facilities with prepositioned supplies co-located with commercial infrastructure, and bases with stationed forces, most closely aligns with the PRC's overseas military logistics needs. Currently, the PRC uses commercial infrastructure to support all of its military operations abroad, including the PLA's presence in other countries' territories, such as at its base in Djibouti. Some of the PRC's BRI projects could create potential military advantages, such as PLA access to selected foreign ports to pre-position the necessary logistics support to sustain naval deployments in waters as distant as the Indian Ocean, Mediterranean Sea, and Atlantic Ocean to protect its growing interests.

PRC official sources assert that military logistics facilities, to include its Djibouti base, will be used to provide international public goods like support to U.N. operations and HA/DR, and to secure China's lines of communication, citizens, and assets abroad. Regardless, a global PLA military logistics network could disrupt U.S. military operations as the PRC's global military objectives evolve. Host nations can perform an essential role in regulating the PRC's military operations, as PRC officials very likely recognize that a stable long-term relationship with the host nation is critical to the success of their military logistics facilities.

- PRC military academics assert that bases abroad can enable forward deployment of PLA forces and support military conflict, diplomatic signaling, political change, bilateral and multilateral cooperation, and training. They also suggest that a military logistics network could enable intelligence monitoring of the U.S. military.

- In August 2017, the PRC officially opened its first PLA base in Djibouti. PLA Navy Marines are stationed at the base with wheeled armored vehicles and artillery but are currently largely dependent on nearby commercial ports due to the lack of experience utilizing its recently operational pier on its base. In late March 2022, a FUCHI II class (Type 903A) supply ship *Luomahu* docked at the 450-meter pier for resupply; the first such reported PLA Navy port call to the Djibouti support base, indicating that the pier is now operational. The pier likely is able to accommodate the PLA Navy's aircraft carriers, other large combatants, and submarines. PLA personnel at the facility have interfered with U.S. flights by lasing pilots and flying drones, and the PRC has sought to restrict Djiboutian sovereign airspace over the base.

Beyond its base in Djibouti, the PRC is very likely already considering and planning for additional military logistics facilities to support naval, air, and ground forces projection. The PLA's approach likely includes consideration of many different sites and outreach to many countries, but only some will advance to negotiations for an infrastructure agreement, status of forces or visiting forces agreement, and/or basing agreement. Critical organizations involved in planning and negotiating for military logistics facilities are the Central Military Commission (CMC) Joint Staff Department, CMC Logistic Support Department, and service headquarters. The PRC's overseas military basing will be constrained by the willingness of potential host nations to support a PLA presence. PRC interlocutors likely use all means available to conduct influence operations to gain political favor among elites in host nations, while obfuscating the scale and scope of PRC political and military interests.

- The PRC has likely considered Cambodia, Myanmar, Thailand, Singapore, Indonesia, Pakistan, Sri Lanka, United Arab Emirates, Kenya, Seychelles, Equatorial Guinea, Tanzania, Angola, and Tajikistan among other places as locations for PLA military logistics facilities. The PRC has probably already made overtures to Namibia, Vanuatu, and the Solomon Islands. The PLA is most interested in military access along the SLOCs from China to the Strait of Hormuz, Africa, and the Pacific Islands.

- The PRC's military facility at Ream Naval Base in Cambodia will be the first PRC overseas base in the Indo-Pacific. In 2021, the "Joint Vietnamese Friendship" building, a facility built by the Vietnamese, was relocated off Ream Naval Base to avert conflicts with PRC military personnel. As of early 2021, dredgers were spotted off Cambodia's Ream naval base, where the PRC is funding construction work and deeper port facilities that would be necessary for the docking of larger military ships. In June 2021, Cambodian Defense Minister Tea Bahn stated that the PRC would help to modernize and expand Ream, but would not be the only country given access to the facility. If the PRC is able to leverage such assistance into a presence at Ream Naval Base, it suggests that the PRC's overseas basing strategy has diversified to include military capacity-building efforts. Both the PRC and Cambodia have publicly denied having signed an agreement to provide the PLA exclusive access to Ream Naval Base.

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CHAPTER FIVE: RESOURCES & TECHNOLOGY FOR FORCE MODERNIZATION

Key Takeaways

- The PRC's long-term goal is to create an entirely self-reliant defense-industrial sector—fused with a strong civilian industrial and technology sector—that can meet the PLA's needs for modern military capabilities.
- The PRC has mobilized vast resources in support of its defense modernization, including through its Military-Civil Fusion (MCF) Development Strategy, as well as espionage activities to acquire sensitive, dual-use, and military-grade equipment. The PRC has substantially reorganized its defense-industrial sector to improve weapon system research, development, acquisition, testing, evaluation, and production.
- In 2021, the PRC announced its annual military budget would increase by 6.8 percent, continuing more than 20 years of annual defense spending increases and sustaining its position as the second-largest military spender in the world. The PRC's published military budget omits several major categories of expenditures and its actual military-related spending is higher than what it states in its official budget.

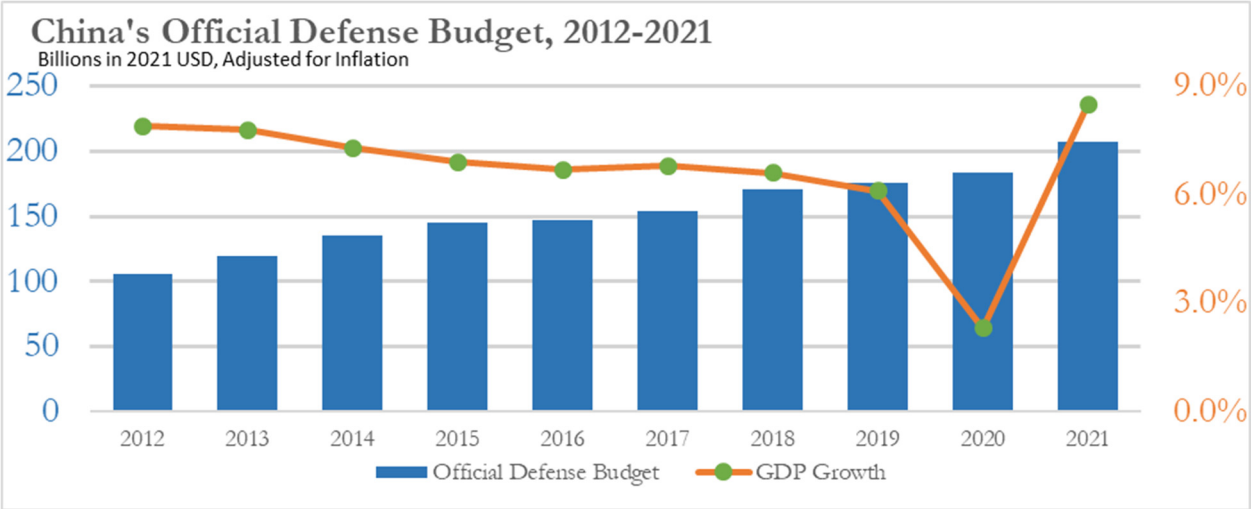
China is continuing to reorganize its defense, science, and commercial industries to ensure PLA access to the resources, technologies, and expertise required to militarily surpass the United States and develop capabilities for complex future military contingencies. China's efforts include developing and incorporating military-AI and other emerging disruptive technologies (EDT) to build an "intelligentized" force sufficiently equipped with high-tech weapons and advanced communications and information technologies to wage and win dynamic wars. While China's Military-Civil Fusion (MCF) strategy supports acquisition of foreign materiel, technology, and expertise through overt and illicit means, China is also accelerating efforts to build domestic capacity in these areas and reduce its vulnerabilities to foreign supply chokepoints.

Military Expenditures Trends

In 2021, the PRC announced a 6.8 percent annual military budget increase to $209 billion, which is approximately 1.3 percent of gross domestic product. This year's budget continues more than 20 years of annual defense spending increases and sustains the PRC's position as the second-largest military spender in the world after the United States. The PRC's defense

budget has nearly doubled during the past 10 years—data from 2012 through 2021 indicates China's official military budget grew 7 percent annually. Of note, on March 9, 2022 a spokesperson for the PRC Ministry of National Defense (MND) stated at the fifth session of the 13th NPC that the PRC had allocated a defense budget of 1.45 trillion yuan (228.3 billion USD) for 2022, up by 7.1 percent compared to the budget implementation in 2021. This increase would mark the defense budget's fastest growth rate since 2019.

China: Official Defense Budget (2012–2021)



China's Estimated Military Expenditures. The PRC's published military budget omits several major categories of expenditures, including R&D and foreign weapons procurement. In 2021, China's actual military-related spending could be significantly higher than its officially announced defense budget. Actual PRC military expenses are difficult to calculate, largely due to the PRC's lack of transparency.

China's Estimated Defense Budget Growth. If China's official defense budget increases annually by an average of 7 percent, growing as high as $270 billion by 2023, the PLA can dedicate more money for training, operations, and modernization, especially given the reduction of the PLA's size by 300,000 people. Economic forecasters project that China's economic growth will slow during the next 10 years, falling from about 6 percent in 2021 to around 4 percent in 2025, which could slow future defense spending growth. Assuming accurate economic projections and a steady defense burden, China will remain the second-largest spender after the United States.

Regional Comparison of the PRC's 2021 Official Defense Budget	
	2021 $ Billion
PRC *(official defense budget)*	$209
India	$64.8
Japan	$55
Russia *(national defense budget)*	$56.7
South Korea	$48
Taiwan	$15.4

CHINA: DEVELOPMENTS AND TRENDS IN ITS DEFENSE INDUSTRY

Missile and Space Industry

Most of China's missile systems, including its ballistic and cruise missile systems, are comparable in quality to systems of other international top-tier producers. China's Aviation Industry Corporation of China, China Aerospace Science and Industry Corporation, and China Aerospace Science and Technology Corporation produce a wide range of missiles—ballistic, cruise, air-to-air, and surface-to-air—for domestic military use and for export. China conducted a test of a new hypersonic weapon system in 2021, building on previous progress in hypersonic weapon development. In 2020, China fielded its first missile with a hypersonic glide vehicle and advanced its scramjet engine development, which has applications in hypersonic cruise missiles. In 2021 and 2022, China conducted flight tests of a reusable suborbital vehicle believed to be part of a plan to build a hypersonic transport system that could take people and cargo anywhere on Earth in less than an hour. According to the China Academy of Launch Vehicle Technology (CALT), this system will "feature winged aircraft that take off and land like ordinary aircraft, but cruise at five times the speed of sound at high altitude."

China's space industry, managed by the PLA, is rapidly expanding its intelligence, surveillance, reconnaissance, navigation, and communication satellite constellations. The successful landing of a rover on Mars and launch of the first and second modules of China's first long-term space station in 2021 and 2022 demonstrated the industry's continued progress.

China's domestic space market is dominated by state-run enterprises; however, increased investment has created private space companies, which have achieved successful orbital satellite launch attempts during the past 2 years. During 2020, China launched its first satellites for a new space-based Internet-of-things project with container monitoring and maritime communications applications, and announced the completion of its global navigation satellite services. The PRC is also developing the Shenlong and Tengyun space planes. Following the 2020 launch of its first prototype spaceplane, in 2022, China launched its second prototype space plane, which stayed on orbit for an extended period of time. Beijing stated these prototypes tested reusable and in-orbit service technologies as part of advancing the peaceful use of space.

Naval and Shipbuilding Industry

China, the top ship-producing nation in the world by tonnage, is increasing its shipbuilding capacity and capability for all naval classes: submarines, warships, and auxiliary and amphibious ships. China also has developed underwater systems, publicly revealing a long-range system in 2019. China domestically produces naval gas turbine and diesel engines as well as almost all shipboard weapons and electronic systems for its shipbuilding sector, making the sector nearly self-sufficient for all shipbuilding needs. In 2020, China Shipbuilding Corporation signed agreements with the two major aerospace enterprises to collaborate on joint projects supporting the PLA Navy.

Armaments Industry

China's North Industries Corporation and China South Industries Group Corporation are improving in nearly every PLA ground system category: armored personnel carriers, assault vehicles, air defense artillery systems, artillery systems and pieces, and main and light battle tanks. Notably, China began testing unmanned Type 59 tanks in 2018 and displayed lightweight Type 15 tanks in October 2019. China can produce ground weapon systems at or near world-class standards; however, quality deficiencies persist with some exported equipment, which is inhibiting Beijing's ability to expand China's export markets.

Aviation Industry

China is advancing its domestic aviation industry through two major state-owned aircraft corporations, AVIC and the Commercial Aircraft Corporation of China (COMAC). AVIC designs and produces China's military aircraft including the J-20 fifth-generation fighter, the Y-20 heavy transport, and the future H-20 flying wing stealth bomber. COMAC produces large passenger aircraft and aims to compete in the global commercial airliner market. COMAC is producing the ARJ21 regional jet, flight-testing the C919 airliner, and working with Russia to develop the CR929 wide-body airliner. China's decades-long efforts to improve domestic aircraft engine production are starting to produce results with the J-10 and J-20 fighters switching to domestically produced WS-10 engines by the end of 2021. China's

first domestically produced high-bypass turbofan, the WS-20, has also entered flight-testing on the Y-20 heavy transport and probably will replace imported Russian engines by the end of 2022.

PRC's Drive to Dominate Emerging Technologies

China seeks to be an innovation superpower that is largely non-reliant on foreign technology and that serves as a global center for high-tech industries. The goal of attaining self-sufficiency in key S&T sectors—a theme of Chinese state plans going back decades—was recently reiterated in the *14th Five-Year Plan*. As part of this self-sufficiency drive, Beijing has mobilized its bureaucracies to rapidly develop the country's capacity for domestic innovation. Published in 2006, the *National Medium-and-Long-Term Plan for the Development of Science and Technology (2006-2020)*, was a landmark policy that formalized China's push for domestic innovation while also calling for the assimilation and "re-innovation" of advanced foreign technologies. In 2015, with the *Made In China 2025* plan, Beijing sharpened its emphasis on technological independence by establishing import substitution quotas across a range of core technologies. The plan also called for the reform of state-owned enterprises, the establishment of regional innovation centers, and the leveraging of private sector capabilities in order to leapfrog foreign technological competitors and create a superior innovation ecosystem.

China is particularly focused on dominating a range of emerging, dual-use technologies that promise to be both disruptive and foundational for future economies; these technologies include AI, autonomous systems, smart city platforms, quantum technologies, biotechnology, and advanced materials and manufacturing. Beijing has a clear understanding of its S&T deficiencies, particularly China's vulnerability and reliance on western companies for enabling technologies such as semiconductors, new materials, and in some cases basic research. In addition, Beijing aims to address the challenges present in growing its science and technology talent pool. As a result of these vulnerabilities, the PRC has focused their industrial policies and the country's massive tech transfer apparatus in an effort to reduce these dependencies, ensure their resilience, and to become a market leader in emerging technologies. China also sustains high levels of R&D funding and offers significant subsidies to domestic companies working on frontier technologies, and has developed a focused effort to improve their domestic education, attract overseas Chinese talent, and attract foreign talent.

China designates AI as one of its priority S&T development areas and assesses that advances in AI and autonomy are central to *intelligentized warfare*, Beijing's concept of future warfare. Beijing views the integration of military and civilian institutions as central for developing AI-enabled military capabilities and has established military-civilian R&D centers and procured commercially-developed AI and robotic technologies to ensure PLA access to cutting-edge AI technologies. PRC researchers are world leaders in certain AI applications, such as facial recognition and natural language processing, and PRC companies are marketing domestically-designed AI chips. While China remains reliant on certain foreign capabilities to produce AI

hardware, such as advanced semiconductor fabrication factories and electronic design automation software, PRC researchers are exploring new materials and design concepts for next-generation semiconductors.

Last year, China designed and fabricated a quantum computer capable of outperforming a classical high-performance computer for a specific problem. China was also domestically developing specialized refrigerators needed for quantum computing research in an effort to end reliance on international components. In 2020 and 2021, Chinese scientists and engineers performed additional testing demonstrating the feasibility of quantum communications from geosynchronous Earth orbit (GEO) using their Shijian-20 satellite.

China's Arms Exports. China is the fifth-largest arms supplier in the world, and sells nearly every category of conventional military equipment including UASs, submarines, naval surface vessels, surface to air missile systems and fighter aircraft to customers like Saudi Arabia, Serbia, the UAE, Indonesia, Kazakhstan, Iraq, and Pakistan.

> **Armed UASs.** China has supplied strike-capable Caihong and Wing Loong UASs to at least Pakistan, Iraq, Saudi Arabia, Egypt, the UAE, Algeria, Serbia, Indonesia, and Kazakhstan.
>
> **Precision-Strike Weapons.** As of 2017, China had sold export variant ballistic missile systems, including the M20, BP-12, and Joint Attack Rocket and Missile System (JARM), as well as long-range satellite-guided rocket systems. Although China typically does not disclose the countries purchasing these types of arms, in 2021, Burma displayed an SY-400 TEL and in 2017 Qatar displayed a JARM.
>
> **Naval Combatants.** China is a supplier of major naval vessels, highlighted by Pakistan's 2015 purchase of eight Yuan class submarines for more than $3 billion. Thailand also purchased one Yuan class submarine in 2017 and originally planned to purchase two more. As of late 2021, Thailand's procurement of the first Yuan submarine was not fulfilled by China due to contractual delays, though it delivered two Ming class submarines to Bangladesh in 2016 and one to Burma in 2021. In 2017 and 2018, China sold two naval frigates to Bangladesh and four to Pakistan. In September 2019, China made its first-ever sale of an LPD-class ship to Thailand.
>
> **Combat Aircraft.** The PRC is attempting to diversify its international arms exports to include more technologically advanced combat aircraft. For example, in 2022 the PRC has offered to sell its JF-17 aircraft to Argentina.

China's arms sales operate primarily through state-run export organizations such as AVIC and North Industries Corporation (NORINCO). Arms transfers also are a component of the PRC's foreign policy, used in conjunction with other types of assistance to complement foreign policy initiatives undertaken as part of China's BRI policy.

Many developing countries buy PRC weapons systems because they are less expensive than other comparable systems. Although some potential customers consider arms made by the PRC to be of lower quality and reliability, many of China's systems are offered with enticements such as donations, and flexible payment options, which make them appealing options for buyers.

Espionage Activities Supporting China's Military Modernization. Multiple U.S. criminal indictments since 2015 involve PRC nationals, naturalized U.S. citizens or permanent resident aliens from the PRC, as well as U.S. citizens. They include procuring and exporting controlled items to China, economic espionage, and sanctions-related criminal cases, according to a U.S. Department of Justice summary of major U.S. export enforcement. The PRC's efforts to acquire sensitive, dual-use, or military-grade equipment included radiation hardened integrated circuits, monolithic microwave integrated circuits, accelerometers, gyroscopes, naval and marine technologies, syntactic foam trade secrets, space communications, military communication jamming equipment, dynamic random access memory, aviation technologies, and ASW. Cases from 2021 include:

- In July 2021, a PRC national was sentenced to 42 months in Federal prison for conspiring to fraudulently export maritime raiding craft and engines to China. The U.S. Military utilizes these vessels and multi-fuel engines because they can be operated after being launched from a submerged submarine, or after being dropped into the ocean by an aircraft. No comparable engine is manufactured in China.

- In April 2021, a PRC national residing in the United States pled guilty to conspiring to export devices with military applications to the PRC government and military. The PRC national fulfilled instructions from the PLA to obtain dual-use technology used for anti-satellite weapons and other advanced military capabilities. This included remotely operated side scan sonar systems, hydrophones, robotic boats, unmanned underwater vehicles, and unmanned surface vehicles.

PRC Cyber-Enabled Espionage Activities

The PRC presents a sophisticated, persistent cyber-enabled espionage and attack threat to military and critical infrastructure systems through its efforts to develop, acquire, or gain access to information and advanced technologies.

Detected PRC cyberspace operations have targeted telecommunications firms, managed service providers (MSPs), and software developers. Key U.S. targets include proprietary commercial and military technology companies and research institutions associated with defense, energy, and other sectors.

The PRC seeks to create disruptive and destructive effects—from denial-of-service attacks to physical disruptions of critical infrastructure—to shape decision-making and disrupt military

operations at the initial stages and throughout a conflict. The PRC believes these capabilities are even more effective against militarily superior adversaries that depend on information technologies.

The PLA and China's Talent Recruitment Programs

The CCP operates more than 200 talent-recruitment programs that are overseen by central bodies that oversee talent development, including the Central Coordination Group on Talent Work and the Overseas High-level Talent Recruitment Work Group. Although the PRC government administers its talent recruitment programs, the PLA uses China's network of recruitment programs, such as the Thousand Talents Plan, to recruit overseas talent. The PLA also has used its premier science and technology university, the National University of Defense Technology (NUDT), to offer foreign talent guest professorships at NUDT. Additionally, the Chinese Academy of Engineering Physics, which runs the PLA's nuclear weapons program, plays an active role in recruitment of overseas experts.

CHAPTER SIX: U.S.-PRC DEFENSE CONTACTS AND EXCHANGES

Key Takeaways

- DoD's defense contacts and exchanges with the PRC in 2021 emphasized responsibly managing competition and establishing commonsense guardrails to ensure competition did not veer into conflict.
- 2021 defense contacts and exchanges with the PRC prioritized open channels of communication and the advancement of DoD priorities on managing crisis communications and strategic risk.

President Biden made clear to PRC President Xi Jinping that it is their responsibility, as leaders, to ensure that competition between the United States and the PRC does not veer into conflict. Following the President's guidance, U.S. defense contacts and exchanges conducted in 2021 supported U.S. policy and strategy toward the PRC to responsibly manage competition.

DoD contacts and exchanges with the PRC were conducted in accordance with the statutory limitations of the National Defense Authorization Act for Fiscal Year 2000, as amended.

In 2021, U.S. defense contacts and exchanges with the PRC focused on three interconnected priorities: (1) challenging PRC's destabilizing behaviors inconsistent with peace and stability in region; (2) promoting dialogue on strategic risk in nuclear, cyberspace, and space to avoid misunderstanding or miscalculation that could escalate into crisis; and (3) building the structures and habits necessary to manage crises.

A complete list of U.S. defense contacts and exchanges with the PRC in 2021 is provided in Appendix II.

Defense Contacts and Exchanges in 2021

Despite consensus built between President Biden and PRC President Xi to maintain open channels of communication, the PLA exhibited an unwillingness to engage on substantive matters with appropriate interlocutors.

High-Level Contacts and Exchanges. High-level contacts between the United States and PRC are an important means to exchange views on the international security environment, and

demonstrates the responsible management of competition between our nations. In 2021, the United States made several requests to the PLA for the use of the Defense Telephone Link (DTL) or Video Teleconference (VTC). The Secretary of Defense made clear his desire to engage with PLA leadership, as needed, to advance priorities across the defense relationship. The Secretary of Defense requested calls to discuss issues related to operational matters and foreign defense relations with PLA CMC Vice Chairman General Xu Qiliang and PLA CMC-member and Minister of National Defense General Wei Fenghe. The Deputy Assistant Secretary of Defense for China also conducted one DTL call with the Deputy Director of the PLA's Office International Military Cooperation (OIMC) on August 19, 2021.

Recurring Exchanges. Recurring exchanges serve as regularized mechanisms for dialogue to advance priorities related to crisis prevention and management, and reduce of operational risk. The following is a list of recurring exchanges and their status in 2021:

- In 2020, the PLA indefinitely postponed the Asia-Pacific Security Dialogue (APSD), an Assistant Secretary of Defense-level policy dialogue. The APSD did not take place in 2021.

- The Defense Policy Coordination Talks (DPCT) is an annual Deputy Assistant Secretary of Defense (DASD) level policy dialogue. On September 28-29, 2021, DASD for China Dr. Michael Chase conducted a secure video conference with PRC Major General Huang Xueping, Deputy Director of OIMC, to hold the 16th U.S.-PRC DPCT. The two sides held frank and in-depth discussion on a range of issues affecting the U.S.-PRC defense relationship.

- In 2021, the PLA declined to hold the second Crisis Communications Working Group (CCWG), a working-level policy dialogue established to advance the crisis prevention and management mechanisms between DoD and the PLA. The U.S. first convened the CCWG in October 2020 by video teleconference to discuss with the PLA concepts of crisis communications, crisis prevention, and crisis management. The meeting provided an opportunity to build mutual understanding between the U.S. military and the PLA on principles to prevent and manage crisis and reduce risk to forces.

- The Military Maritime Consultative Agreement (MMCA) Working Group is an operational safety dialogue between U.S. INDOPACOM and PLA naval and air forces. The MMCA Working Group and Flag Officer session was held virtually on December 14-16, 2021. During the 2021 MMCA meetings, both sides discussed sustaining maritime and aviation operational safety and professionalism; reviewed safety-related events; and discussed implementation and assessment of the Rules of Behavior for Safety of Air and Maritime Encounters Memorandum of Understanding (MOU). The U.S. and PRC have met regularly since 1998 for MMCA dialogue to strengthen military maritime safety, improve operational safety in the air and sea, and reduce risk between the two militaries.

Functional and Academic Exchanges. Functional engagements focus on advancing channels for risk reduction, understanding, and communication to promote international rules and norms, and set assumptions and expectations for safe and professional behavior between our two militaries. Similarly, academic exchanges focus on building mutual understanding. COVID restrictions prevented the execution of U.S. and PRC military academic institution exchanges planned for 2021.

- The annual exchange between the Defense POW/MIA Accounting Agency (DPAA) and the PLA Archives held an event in February 2021, which had been rescheduled from 2020 due to COVID restrictions. During the meeting, DPAA and the PLA Archives discussed 16 cases. No additional DPAA-PLA Archives meetings were held in 2021.

- The U.S. Army Pacific Command and the PLA did not hold the 2021 Disaster Management Exchange (DME).

- On November 30, 2021 U.S. and PRC defense officials held a working level virtual meeting to discuss the Department of Defense's 2021 annual report on "Military and Security Developments Involving the PRC," consistent with the 2014 "MOU between the U.S. Department of Defense and the PRC Ministry of National Defense on Notification of Major Military Activities Confidence Building Measures Mechanism."

U.S-PRC Defense Contacts and Exchanges in 2022

In 2022, the U.S. has prioritized maintaining open channels of communication at senior-levels and holding following exchanges: Defense Policy Coordination Talks, Crisis Communications Working Group, the Military Maritime Consultative Agreement Working Group and Plenary, and Defense POW/MIA Accounting Agency (DPAA)-PLA Archive exchange. In August 2022, the PRC canceled defense engagements with the United States.

SPECIAL TOPIC: PRC VIEWS ON STRATEGIC STABILITY

Understanding strategic stability. PRC strategists typically define strategic stability as including nuclear, conventional, and political-military aspects of state relations. Beijing increasingly views, what it characterizes as, "ensuring mutual vulnerability" with its nuclear rivals as a linchpin to this concept.

- China's understanding and approach to strategic stability are influenced by the PRC's history, Western research and scholarship, and modern developments in weapons technology, proliferation, and great power competition. PRC experts' understanding of strategic stability originally draws from Mao Zedong–era strategies that downplayed the need for a vast nuclear arsenal. Current views have evolved, and frequently refer to strategic stability as a general state of balance between the PRC and its rivals in multiple domains, including military, economic, and political.

- Modern PRC experts increasingly accept Western definitions and concepts around strategic stability, agreeing that strategic stability should be understood as involving crisis stability (the absence of incentives to use nuclear weapons first) and arms control stability (the absence of incentives to build up a nuclear force). PRC scholars also emphasize the importance of constraints against the use of nuclear weapons and strategic mutual confidence and communications, and tend to reject frameworks that seem to portray the United States and China as being in a "Cold War-style" arms race.

- China is committed to maintaining nuclear deterrence with its nuclear rivals, and PRC nuclear experts view a secure second-strike capability as crucial to national security. Beijing's understanding of nuclear deterrence has focused on maintaining a sufficient capability to inflict a degree of unbearable destruction against its rivals and thus deter attack. Maintaining this posture with a small number of weapons has often led to China's leaders lacking confidence in their ability to assure retaliation, perceiving that they either lacked enough weapons or lacked a sufficiently survivable arsenal.

PRC leadership reluctant to engage on strategic stability. It remains unclear how much PRC leadership and decision-makers accept the premise behind strategic stability, including the utility of crisis stability and communications. PRC officials have been reluctant to engage on nuclear, cyberspace, and space issues as it pertains to strategic risk reduction in official or unofficial dialogue, particularly in defense channels.

Challenges to China's pursuit of strategic stability. China's concerns about maintaining strategic stability with its major power rivals revolves around keeping pace with emerging technological developments while also managing neighbors viewed as having the potential ability to alter the regional nuclear balance and degrade the PRC's deterrence capability.

- PRC experts perceive risks to ensuring strategic stability with their neighbors and U.S. allies, which they describe as pursuing a strategy of 'nuclear hedging.' Experts both worry about the impacts of the U.S. nuclear umbrella on allied behavior, and raise concerns over those U.S. allies pursuing independent nuclear deterrents.

- Beijing views significant risks to strategic stability from potential U.S. technological breakthroughs or new commitments to produce and deploy cutting-edge weapons systems at greater scale or near China's periphery.

  - PRC leaders are concerned that the United States could achieve rapid advances in missile defense technology, despite the technical limitations and small stockpiles of present U.S. interceptor systems. PRC leaders are concerned that Washington could achieve a breakthrough development in system effectiveness or deployment scale that negates Beijing's ballistic missile arsenal.

  - Beijing fears that advances in U.S. and allied hypersonic capabilities may credibly threaten China's relatively small arsenal of land-based weapons. Additionally, some PRC experts are concerned that the proliferation of hypersonic technology may blur the line between nuclear and conventional escalation; for example, the use of nuclear-armed air defense systems to counter hypersonic glide vehicles could lower the nuclear threshold and raise the possibility of escalation into a broader nuclear exchange.

  - Beijing's perception of strategic stability is also challenged by other technological developments, including potential U.S. development of increasingly accurate long-range missiles capable of conducting counterforce strikes with low-yield nuclear warheads. Advanced space surveillance assets, conventional prompt-strike weapons, and the possibility of cyberspace-attacks to undermine nuclear command and control also contribute to PRC's concerns about maintaining mutual nuclear vulnerability.

SPECIAL TOPIC: PRC VIEWS OF INFORMATION AND INFORMATION DOMINANCE

The concept of information put forth by PLA writers, in authoritative texts, defines information as identifiable, carriable, indestructible, shareable, timely, and movable content that, through acquisition, allows individuals to transform the world. PRC leaders have identified that collecting, controlling, and accessing of information is crucially important in both warfighting and modern society. As a result, the PLA has conceptualized warfighting concepts to seize control of the information domain during a conflict. The concept of information warfare is an expansive concept that includes individuals, enterprises, societies, and national communication networks that form integrated entities, and encompasses the electromagnetic spectrum, psychology and perception, and intelligence operations. The PLA would probably use a variety of military capabilities such as cyberspace, electronic, and conventional to destroy adversary information systems and propagate PRC foreign policy messaging or disinformation. China's goal for information warfare is to gain information superiority, which is achieved by destroying the adversary's ability to acquire, transmit, and process information while simultaneously protecting the PLA's ability to do the same.

The PLA probably believes that it can successfully deter and manage a conflict by either controlling or destroying an adversary's access to information. Authoritative PRC military documents illustrate that the PLA is aware of the risk of escalation during a conflict. Similar to their Western counterparts, PLA strategists broadly define escalation as an increase in the intensity or scope of military activities to achieve explicit goals. Beijing views of conflict escalation suggest confidence in their ability to control conventional conflict, and willingness to conduct offensive operations to demonstrate Beijing's resolve, seize the initiative, and exploit adversary weaknesses.

- PLA strategy is also informed by the view that contemporary "informatized" warfare, enabled by modern C4ISR capabilities, provides leaders with sufficient battlefield awareness to calibrate military effects and elicit a desired adversary response. PLA strategists view warfare as a science, discounting the possibility of inadvertent escalation or the effects of the "fog of war."

- PLA writings indicate that the Chinese military leaders probably views achieving information dominance during a conflict as a requirement to deny the adversary the ability to control the conflict, weaken their will to fight, and compel them to cease hostilities. The PLA has noticed that U.S. information dominance during the Iraq war provided the U.S.

military with the ability to control the conflict, while the Iraqi military was unable to receive orders or conduct operations because their command systems had been destroyed.

The PLA probably will seek to control the information domain across the spectrum of conflict. Prior to the start of hostilities, the PLA would conduct psychological warfare to erode the will to fight of both adversary military forces and the civilian population, positioning the PLA to seize control of the information environment. Additionally, the PLA could conduct kinetic strikes or cyberspace-attacks on adversary command and control (C2) systems in order to cut off an adversary's information flow. PLA writings states that a key concept of seizing information dominance is to preempt the enemy by conducting operations to paralyze adversary information systems. As the conflict progresses, the PLA will continue to use cyberspace and kinetic attacks to suppress and jam enemy information systems. The PLA would probably continue to use information operations against an adversary's military and civilian populations in order to continue to erode adversary support for the conflict.

- The PLA has recognized that information operations are highly offensive in nature and that individuals are often highly sensitive to the first narrative around an event. The PLA observed both Russia and Ukraine attempting to be the first side to control the information environment during the beginning of the current crisis in Ukraine. The PLA has also noticed that information operations have the ability to shape the information domain before the start of the conflict and the effects can be felt long after the conflict has concluded.

In 2019, the PLA began mentioning a new concept called "intelligentized warfare," which seeks to incorporate AI and other advanced technologies into every level of warfare. A major focus of intelligentized warfare is in the cognitive domain, as PRC theorists have perceived that the development of information technology has reached its limits and that future wars will occur in this cognitive domain. The PLA has already stated that modern conflict has transitioned towards intelligentized warfare have highlighted the utility of learning from the current Russia-Ukraine crisis, a conflict which the PLA thinks has cognitive confrontation at its core. To prepare for these future confrontations in the cognitive domain, the PLA has been honing its concept of "Cognitive Domain Operations (认知领域作战)" (CDO) that seek to adapt previous PRC concepts such as public opinion and psychological warfare to the modern information environment through the aid of emerging technologies such as AI.

- According to a PLA researcher, CDO actions integrate military, political, economic, public opinion, psychology, legal theory, and other means to achieve strategic national security goals that affect a target's cognition, decision making, and behavior. The goal of CDO is to achieve what the PLA refers to as "mind dominance", defined as the use of propaganda as a weapon to influence public opinion to effect change in a nation's social system—likely to create an environment favorable to China and reduce civilian and military resistance to PLA actions. PLA researchers have stated that the victory of the cognitive narrative may

yield greater strategic benefits than firepower destruction, force control, and siege, and that effects of CDO can last long after the conflict has concluded.

The PLA probably intends to use CDO as an asymmetric capability to deter U.S. or third-party entry into a future conflict or as an offensive capability to shape perceptions or polarize a society. Authoritative PLA documents describe one aspect of deterrence as the ability to bring about psychological pressure and fear on an opponent and force them to surrender. PLA articles on CDO state that seizing mind dominance in the cognitive domain and subduing the enemy without fighting is the highest realm of warfare. The PLA recognizes the offensive utility of CDO, as researchers have noticed that individuals are highly sensitive to the first news of an event, even if that news is misinformation. By using CDO to conduct offensive actions, the PLA seeks to create an asymmetric advantage to not only suppress their opponents, but also to subtly shape the thinking habits of the opponent's audience and guide their opponents to support PLA objectives.

PLA researchers have stated that emerging technology such as artificial intelligence and big data are key to creating profound advancements in CDO. Since at least 2019, PLA researchers have called on the PLA to improve their big data, natural language processing, and deep learning capabilities in order to improve its ability to create deep fakes, disseminate propaganda, and analyze internet users' sentiments. Another PLA researcher suggested that the PLA should use AI to run its bot network on social media, which would be able to create content, and coordinate the optimal time to post on social media. If the PLA is successful in incorporating these technologies into operations, it could increase obfuscation of activities, create more plausible content, and enable more accurate targeting of audiences.

SPECIAL TOPIC: PLA'S EXPANDED MILITARY DIPLOMACY

The expansion of China's military diplomatic activities began in the early 1990s with a dramatic shift in Beijing's view of the international security environment. In 2004, then-Chinese President Hu directed the PLA to undertake "new historic missions," which included supporting China's overseas interests and diplomacy. A major milestone occurred in 2008 when the PLA Navy began counterpiracy operations in the Gulf of Aden—an important Sea Line of Communication (SLOC) for Chinese trade. Since 2015, President Xi has reemphasized expanding PLA global activities and developing a system to defend China's growing overseas interests as part of broader PLA reform efforts. The PLA's engagement strategy depends on China's overall relationship with each country or international organization.

In 2015, China developed a prioritization for military-to-military relations in line with how Beijing categorizes its diplomatic relations with other countries: major powers (Russia, the United States, and Western Europe) with whom Beijing seeks "stable and balanced development" in a multipolar system; peripheral nations in the Indo-Pacific region with whom China seeks stronger relationships to create a more favorable environment along its maritime and land borders; and developing nations (usually in Africa, Latin America, and the Middle East), where China emphasizes solidarity and cooperation and participates in multilateral diplomatic efforts, including projects associated its Belt and Road Initiative (BRI).

Beijing uses foreign defense relations to shape global perceptions, strengthen its overseas influence, collect information on foreign militaries, and facilitate global access for the PLA to support Beijing's strategic objectives. These engagements also advance Beijing's broader goal of countering foreign opposition to China's global activities and establishing a multipolar global governance system in which China has a greater role and no single country is dominant.

The PLA's interest in bilateral defense engagement activities is influenced by Beijing's broader diplomatic priorities. China tends to undertake greater levels of military cooperation with countries where it has established a strategic partnership—such as Russia, with whom its "comprehensive strategic partnership of coordination" entails a relatively high degree of military cooperation. China seeks to leverage its relationship with other strategic partnership countries to reinforce its systemic preferences and maintain stability in Beijing's favor.

As China's overseas interests grew during the past two decades, CCP leaders directed the PLA to think about operating beyond China's borders and its periphery to advance Beijing's objectives.

This emphasis probably represents Beijing's increased reliance on and trust in the PLA to tout itself as a contributor to global security.

While not the sole focus of China's foreign defense relations, these activities provide opportunities to negotiate overseas military facilities and military access, which China needs to protect PRC nationals abroad, SLOCs, and substantial commercial investments associated with BRI, while also helping to support its forces participating in UN peacekeeping missions.

Since 2018, the PLA has emphasized the responsibilities and roles of military attachés, training and professional military education (PME) opportunities in China, and engagement in multilateral forums, as the most effective means to boost its reputation and support Beijing's strategic objectives. The PLA participates in combined exercises when doing so is likely to support political objectives or yield insights into foreign tactics, techniques, and procedures (TTPs) concerning counterterrorism, mobility operations, and logistics.

Beijing continues to focus its foreign defense relations and influence efforts in the Indo-Pacific region to expand trade and investment, secure China's borders, and counter U.S. influence. Outside of the Indo-Pacific, China sees Africa as a region of particular opportunity because African governments are highly receptive to China's engagement and assistance. In 2021, the PRC held the inaugural China-Africa Peace and Security Forum, which brought together virtually the PLA and military representatives from 19 African countries. The event focused on COVID-19's impact on African regional security, military medicine exchanges, and the role of military cooperation in combating COVID. During 2021, the PRC provided forces to UN Peacekeeping missions in Mali, South Sudan, and the Democratic Republic of Congo. The PLA likely uses peacekeeping missions in Africa to gain operational experience and signal political commitment on the continent. During the last five years, China has expanded ties with its historical partners like Russia and Pakistan while increasing engagements with U.S. partners and allies, such as the Philippines, Djibouti, and Thailand. These bilateral defense engagements provide the PLA opportunities to acquire advanced weapon systems and technologies and give the PLA access to foreign military practices, operational doctrine, and training methods.

China's defense outreach provides interlocutors with alternatives to U.S.-provided support. China's diplomatic engagements provides alternative sources of support and legitimacy to isolated regimes, such as Iran, Syria, North Korea, Venezuela, and the Democratic Republic of the Congo, which blunts the effectiveness of international sanctions, enables these regimes to circumvent U.S. efforts, and weakens commitments to U.S. objectives among U.S. partners like the United Arab Emirates and Tunisia.

APPENDIX I: PRC AND TAIWAN FORCES DATA

Taiwan Strait Military Balance, Ground Forces

	China		Taiwan
	Total	*Taiwan Strait Area*	*Total*
Total Ground Force Personnel	1,040,000	416,000	89,000
Group Armies/Army Corps	13	5	3
Combined Arms Brigades	81	30 (6 Amphibious)	NA
Mechanized Infantry Brigades	N/A		3
Motorized Infantry Brigades			6
Armor Brigades			4
Army Aviation/Air Assault Brigades	17	5	4
Artillery Brigades	15	5	3
Airborne Brigades	7	7	0
Marine Brigades	8	5	2
Tanks	4,400	.	850
Artillery Pieces	9,800	.	1,200

Note: For the purposes of this document, the "Taiwan Strait Area" includes the PLA's Eastern and Southern Theaters.

Taiwan Strait Military Balance, Naval Forces

	China		Taiwan
	Total	***Eastern and Southern Theater Navies***	***Total***
Aircraft Carriers	2	1	0
Cruisers	6	2	0
Destroyers	36	24	4
Frigates	45	32	22
Corvettes	50	N/A	0
Tank /Medium Landing ships Amphibious Transport Dock	57	52	31
Attack Submarines	56	31	2
Nuclear Attack Submarines	9	2	0
Nuclear Powered Ballistic Missile Submarines	6	6	0
Coastal Patrol (Missile)	84	68	44
Coast Guard Ships	224	N / A	23

Note: The PLAN has the largest force of principal combatants, submarines, and amphibious warfare ships in Asia. In the event of a major Taiwan conflict, the Eastern and Southern Theater Navies would participate in direct action against the Taiwan Navy. The Northern Theater Navy (not shown) would be responsible primarily for protecting the sea approaches to China, but could provide mission-critical assets to support other fleets. In conflict, China may also employ CCG and PAFMM ships to support military operations

Taiwan Strait Military Balance, Air Forces

	China		Taiwan
	Total	*Eastern and Southern Theater*	*Total*
Fighters	1,900 (2,900*)	700 (800*)	300 (450*)
Bombers/Attack	450	250	0
Transport	450	20	30
Special Mission Aircraft	200	150	240

Note: This chart displays estimated totals of military aircraft from both PLAAF and PLAN aviation. However, the PLAAF may supplement its military transports with civilian aircraft in a combat scenario.

*The totals in parentheses include fighter trainers.

China's Rocket Force

System	*Launchers*	*Missiles*	*Estimated Range*
ICBM	300	300	>5,500km
IRBM	250	250+	3,000-5,500km
MRBM	250	500+	1,000-3,000km
SRBM	200	600+	300-1,000km
GLCM	100	300+	>1,500km

APPENDIX II: DEFENSE CONTACTS AND EXCHANGES

U.S.-China Defense Contacts and Exchanges in 2021

RECURRENT EXCHANGES	
Defense Policy Coordination Talks	September
Military Maritime Consultative Agreement Working Group	December
ACADEMIC EXCHANGES	
FUNCTIONAL EXCHANGES	
DPAA-PLA Archives	February
CMPR Briefing-Per 2014 MOU	November

APPENDIX III: SELECTED PLA BILATERAL AND MULTILATERAL EXERCISES IN 2021

Selected PLA Bilateral and Multilateral Exercises in 2021		
Exercise Name	**Type of Exercise**	**Participants**
Peace 2021/ Aman 2021	Multinational joint naval exercise	Russia, Pakistan, Turkey, United States and 41 additional nations
Joint Naval Drill	Joint Naval exercise	Singapore
Joint maritime Training Exercise	Joint Naval exercise	Indonesia
Cobra Gold 2021	Multinational humanitarian and disaster relief training	Thailand, Japan, South Korea, Malaysia, Singapore, Indonesia, India, United States
Zapad/ Interaction 2021	Joint military training	Russia
Shared Destiny 2021	Multinational peacekeeping exercise	Pakistan, Mongolia, Thailand
Peace Mission 2021	Multinational military training	Russia, Kazakhstan, Tajikistan, Kyrgyzstan, India, Pakistan, Uzbekistan
Pabbi Antiterror 2021	Joint anti-terrorism exercise	Russia, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Pakistan, India
Coast Guard Joint Patrols	Joint Coast Guard patrol	Vietnam
Joint Sea 2021	Joint Naval exercise	Russia
Joint Aerial Strategic Patrol	Joint aerial strategic patrol	Russia
Joint Naval Patrols	Joint Naval patrol	Vietnam
Peace Rescue 2021	Joint medical exercise	Vietnam

APPENDIX IV: ABBREVIATIONS

APSCO	Asia-Pacific Space Cooperation Organization
AAM	Air To Air Missiles
AAV	Amphibious Assault Vehicle
ADIZ	Air Defense Identification Zone
AEW&C	Airborne Early Warning & Control
AGI	Intelligence Collection Ships
AGOS	Ocean Surveillance Ships
AI	Artificial Intelligence
ALBM	Air-Launched Ballistic Missile
AOE	Fast Combat Support Ship
AOR	Fleet Replenishment Oilers
APOSOS	Asia-Pacific Ground-Based Optical Space Object Observation System
APSD	Asia-Pacific Security Dialogue
ASAT	Anti-Satellite Weapon
ASBM	Anti-Ship Ballistic Missile
ASCM	Anti-Ship Cruise Missile
ASEAN	Association Of Southeast Asian Nations
ASW	Anti-Submarine Warfare
AUKUS	Australia, The United Kingdom, And The U.S.
AUV	Autonomous Underwater Vehicle
AVIC	Aviation Industry Corporation Of China
BACC	Beijing Aerospace Control Center
BMD	Ballistic Missile Defense
BMEW	Ballistic Missile Early Warning
BRI	Belt And Road Initiative
BRICS	Brazil, Russia, India, China, And South Africa
BWC	Biological Weapons Convention
C2	Command And Control
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, And Reconnaissance
CALT	China Academy Of Launch Vehicle Technology
CBM	Confidence-Building Measures
CBW	Chemical And Biological Weapons
CCDI	Central Commission For Discipline Inspection

CCG	Chinese Coast Guard
CCMCFD	Central Commission For Military Civilian Fusion Development
CCP	Chinese Communist Party
CCWG	Crisis Communications Working Group
CDO	Cognitive Domain Operations
CELAC	Community Of Latin American And Caribbean States
CFO	Chief Financial Officer
CG	Coast Guard
CLTC	China Launch And Tracking Control
CMC	Central Military Commission
CMM	Chinese Maritime Militia (See PAFMM)
CMPR	China Military Power Report
CNSA	China National Space Administration
CNSC	Central National Security Commission
COMAC	Commercial Aircraft Corporation Of China
CONUS	Continental United States
COSCO	China Ocean Shipping Company
COVID	Coronavirus
CPTPP	Comprehensive And Progressive Agreement For Trans-Pacific Partnership
CWC	Chemical Weapons Convention
DASD	Deputy Assistant Secretary Of Defense
DDG	Guided-Missile Destroyer
DME	Disaster Management Exchange
DOB	Date Of Birth
DPAA	Defense Pow/Mia Accounting Agency
DPCT	Defense Policy Coordination Talks
DSR	Digital Silk Road
DTL	Defense Telephone Link
ECS	East China Sea
EDT	Emerging Disruptive Technologies
EEZ	Exclusive Economic Zone
EO	Electro-Optical
EPR	Emergency Petroleum Reserve
EW	Electronic Warfare
FFG	Guided-Missile Frigate
FFL	Corvette
FIC	First Island Chain
FOB	Fractional Orbital Bombardment
FOC	Full Operational Capability
FYP	Five Year Plan
GDP	Gross Domestic Product

GEO	Geosynchronous Earth Orbit
GLCM	Ground-Launched Cruise Missile
GPS	Global Positioning System
GSD	General Staff Department
GSR	Green Silk Road
HEU	Highly Enriched Uranium
HGV	Hypersonic Glide Vehicle
HQ	Headquarters
HSR	Health Silk Road
IADS	Integrated Air Defense System
ICBM	Intercontinental Ballistic Missile
ICT	Information And Communications Technology
INDOPACOM	U.S. Indo-Pacific Command
IO	Information Operations
IOC	Initial Operational Capability
IRBM	Intermediate-Range Ballistic Missile
ISR	Intelligence, Surveillance, And Reconnaissance
JARM	Joint Attack Rocket And Missile System
JLSB	Joint Logistics Brigades
JLSC	Joint Logistics Service Center
JLSF	Joint Logistics Support Force
JOCC	Joint Operations Command Center
LAC	Line Of Actual Control
LACM	Land-Attack Cruise Missile
LEO	Low Earth Orbit
LHA	Amphibious Assault Ship
LM	Long March
LNG	Liquid Natural Gas
LOW	Launch-On-Warning
LPD	Amphibious Transport Docks
LST	Tank Landing Ships
MCF	Military-Civilian Fusion
MDPW	Multi-Domain Precision Warfare
MIRV	Multiple Independently Targetable Reentry Vehicles
MMCA	Military Maritime Consultative Agreement
MND	Ministry Of National Defense
MOU	Memorandum Of Understanding
MOX	Mixed-Oxide
MPS	Ministry Of Public Security
MRBM	Medium-Range Ballistic Missile
MSP	Managed Service Providers

MSS	Ministry Of State Security
MUM-T	Manned Unmanned Teaming
NDMD	National Defense Mobilization Department
NDU	National Defense University
NEO	Noncombatant Evacuation Operations
NFU	No First Use
NIH	National Institutes Of Health
NORINCO	North Industries Corporation
NPC	National People's Congress
NSR	Northern Sea Route
NUDT	National University Of Defense Technology
NWMA	Non-War Military Activities
OBOR	One Belt One Road
OIMC	Office For International Military Cooperation
OPFOR	Opposing Force
OTH	Over-The-Horizon
PAFMM	People's Armed Forces Maritime Militia
PAP	People's Armed Police
PBA	Pharmaceutical-Based Agents
PKO	Peacekeeping Operations
PLA	People's Liberation Army
PLAA	People's Liberation Army Army
PLAAF	People's Liberation Army Air Force
PLAN	People's Liberation Army Navy
PLA NDU	People's Liberation Army National Defense University
PLANMC	People's Liberation Army Navy Marine Corps
PLARF	People's Liberation Army Rocket Force
PME	Professional Military Education
PNT	Positioning, Navigation, And Timing
POW	Prisoner Of War
PPE	Personal Protective Equipment
PRC	People's Republic Of China
PRSS	Pakistan Remote-Sensing Satellite
RIMPAC	Rim Of The Pacific Exercise
RORO	Roll-On/Roll-Off Cargo Ships
SAM	Surface-To-Air Missile
SAR	Synthetic Aperture Radar
SASTIND	State Administration For Science, Technology, And Industry For National Defense
SATCOM	Satellite Communications
SCO	Shanghai Cooperation Organization

SCS	South China Sea
SIC	Second Island Chain
SLAM-ER	Standoff Land
SLBM	Sea-Launched Ballistic Missiles
SLOC	Sea Lines Of Communication
SLV	Space Launch Vehicle
SMA	Special Mission Aircraft
SOE	State-Owned Enterprise
SOF	Special Operations Forces
SRBM	Short-Range Ballistic Missile
SRSS	Sudan Remote-Sensing Satellite
SS	Diesel-Powered Attack Submarine
SSBN	Nuclear-Powered Ballistic Missile Submarine
SSD	Space System Department
SSF	Strategic Support Force
SSGN	Guided-Missile Nuclear-Powered Attack Submarine
SSN	Nuclear-Powered Attack Submarine
SSP	Air-Independent Powered Attack Submarines
SSS	Student Small Satellites
STEM	Science, Technology, Engineering, And Mathematics
TRA	Taiwan Relations Act
TT&C	Telemetry, Tracking, And Control
TTP	Tactics, Techniques, And Procedures
UAE	United Arab Emirates
UAS	Uncrewed Aerial Systems
UAV	Uncrewed Aerial Vehicles
UCAV	Uncrewed Combat Aerial Vehicle
UFWD	United Front Work Department
UN	United Nations
UNCLOS	United Nations Convention On The Law Of The Sea
USD	U.S. Dollar
USNS	United States Naval Ship (Non-Commissioned)
USTR	United States Trade Representative
VBSS	Visit, Board, Search And Seizure
VIP	Very Important Person
VLS	Vertical Launch System
VRSS	Venezuelan Remote-Sensing Satellite
VTC	Video Teleconference
VTOL	Vertical Take-Off And Landing
XPCC	Xinjiang Production And Construction Corps
XSCC	Xi'an Satellite Control Center




DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA