EXECUTIVE SUMMARY

This chapter identifies the PLA Navy's 2035 and midcentury modernization goals, examines its progress in building requisite world-class capabilities, and assesses its current capability shortfalls and efforts to overcome them.

MAIN ARGUMENT

While there are multiple ways to measure a "world-class" navy, what matters most are China's own criteria informing its efforts toward that end. Capabilities-based benchmarks are a widespread indicator of a navy's level. PLA leadership appears focused on developing the capabilities that improve the PLA Navy's proficiency to execute specified missions at the operational level of war. China's 2019 defense white paper provides a roadmap for the PLA Navy to become the world's most capable navy regarding these missions. Only when the PLA Navy successfully integrates the means required to support the full range of these missions will Beijing perceive that it has reached world-class status. By sowing doubt about the PLA Navy's capability to execute these missions, Washington can downgrade party-military leadership perceptions about China's world-class naval status and instill restraint.

POLICY IMPLICATIONS

- Full world-class status is reserved for when the PLA Navy establishes a global navy capable of protecting Chinese interests worldwide as instructed. On its current trajectory, the PLA Navy is likely to be capable of fully executing such operations by midcentury.

- If Beijing is unable to effectively integrate advanced technologies into tactical operations to enable the building of its desired fleet, then the PLA Navy will question its ability to surpass the U.S. Navy and achieve its top-tier objective.

- If the PLA Navy is unable to access suitable overseas ports for ship repair and armament resupply, its combat power projection overseas will be limited, thereby degrading the PRC's ability to use the PLA Navy as a tool of influence overseas and potentially slowing its progress toward achieving its world-class objectives.

China's Future World-Class Navy: Ends, Ways, Means

Christopher H. Sharman and Andrew S. Erickson

On the morning of April 12, 2018, the People's Liberation Army (PLA) Navy Type 052D (Luyang III) destroyer *Changsha* was moored pierside at Yulin, a naval port in the Southern Theater.[1] The national ensign of the People's Republic of China (PRC)—the PLA Navy's own "8-1" pennant— was hoisted, and the ship was fully dressed in a rainbow of signal flags that punctuated the auspicious event.[2] The navy band's patriotic tunes broke the anticipatory silence as the ship's honor guard snapped to attention. Central Military Commission (CMC) chairman Xi Jinping crossed the ship's brow wearing military fatigues.[3] After honor guard inspection, the ship's horn sounded, the propellers began rotating, and the *Changsha* was underway, bound for nearby waters off Hainan's southern coast.[4] There, it would rendezvous with ten thousand PLA Navy sailors manning 48 warships on parade.[5] The sheer preponderance of participating ships and attendees

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[1] Li Xuanliang and Wu Dengfeng, "习近平: 把人民海军全面建成世界一流海军" [Xi Jinping: Comprehensively Build the People's Navy into a World-Class Navy], Xinhua, April 12, 2018; and "China Focus: President Xi Reviews Navy in South China Sea," Xinhua, April 18, 2013, http://www.xinhuanet.com/english/2018-04/13/c_137106984.htm.

[2] "向海图强, 建设一支强大的人民海军" [Strengthening toward the Sea, Building a Strong People's Navy], *PLA Daily*, April 13, 2018.

[3] "China Focus: President Xi Reviews Navy in South China Sea."

[4] "向海图强, 建设一支强大的人民海军. "

[5] Yu Zhangcai, "把人民海军全民建成世界一流海军, 深入贯彻新时代党的强军思想: 习近平在出席南海海域海上阅兵时强调" [Build the People's Navy into a World-Class Navy, Thoroughly Implement the Party's Thought on Strengthening the Military in the New Era: Xi Jinping Emphasized When Attending a Naval Parade in the South China Sea], *People's Navy*, April 13, 2018.

made this the largest-ever naval review for the PRC.[6] The total tonnage of participating ships exceeded that of all other previous fleet reviews combined.[7] With over half of participating warships commissioned after Xi became CMC chairman at the 18th National Congress in 2012, the arrayed armada represented a navy built and developed under him.[8] The PLA Navy's official newspaper, *People's Navy*, highlighted the event's theme: a celebration of the great efforts and latest achievements in PLA naval modernization in the "new era"—a tribute to Xi, his influence, and his unfolding legacy.[9]

Transiting in two columns, ships were grouped by mission: strategic strike, underwater attack, far seas combat, amphibious landing, carrier strike, coastal defense, and "comprehensive security." With sailors standing at attention and manning its rails, the PLA Navy's crown jewel passed by: China's first aircraft carrier and a symbol of sea power, the CV-16 *Liaoning*.[10] Later that morning, Xi would observe four J-15 fighter jets launch from the *Liaoning*'s ski-jump flight deck.[11] Ten mission-choreographed aircraft sections then flew in diamond formations overhead. The 76 airframes included sorties of shipboard helicopters and antisubmarine patrol, airborne early-warning, command-and-control, long-range refueling, surveillance, and antisurface warfare–capable aircraft.[12]

The highlight of the day's events was an important speech by Xi declaring that a strong navy has always been China's aspiration.[13] However, the ultimate object was not the fleet before him but the one he envisioned for China's future. Before the PLA Navy and CMC leadership, Xi pledged unprecedentedly to build a "world-class navy," according to official media.[14] Specifically, he committed to accelerating modernization with new types of

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[6] "Chinese President Xi Jinping Reviews Naval Parade in South China Sea," China Military Online, April 12, 2018, http://eng.mod.gov.cn/xb/News_213114/Photos/4809317_3.html.

[7] Yu, "把人民海军全民建成世界一流海军, 深入贯彻新时代党的强军思想."

[8] "向海图强, 建设一支强大的人民海军."

[9] Yu, "把人民海军全民建成世界一流海军, 深入贯彻新时代党的强军思想."

[10] Li Gaojian and Sun Guoqiang, "航行在领神的目光里——辽宁舰航母打击群接受习主席检阅侧记" [Sailing in the Eyes of the Leader—Side Notes of the Liaoning Aircraft Carrier Strike Group Being Inspected by President Xi], *People's Navy*, April 13, 2018.

[11] "China Focus: President Xi Reviews Navy in South China Sea."

[12] Ibid.

[13] Ibid.

[14] Naval Command College, "建设一支强大的人民海军, 寄托着中华民族向海图强的世代夙愿, 是实现中华民族伟大复兴的重要保障 牢牢把握全面建成世界一流海军的时代内涵" [The Building of a Strong People's Navy Is an Important Guarantee for the Realization of the Great Rejuvenation of the Chinese Nation, as It Is the Long-Cherished Wish of the Chinese Nation to Strive for Strength in the Sea, Grasping Firmly the Connotation of the Era of Building a World-Class Navy in a Comprehensive Manner], *PLA Daily*, June 6, 2018.

weapon systems, technologies, and platforms.[15] Perhaps more importantly, Xi suggested that this future navy required immediate action, which "has never been more urgent than today."[16] His navy-building path unfolded clearly: the PRC would use innovation to "surpass" the U.S. Navy as the PLA Navy strives to become a world-class navy.[17]

Xi's ambition to overtake the American paradigm is manifesting clearly in the force structure that China is building and its organization of personnel to take the PLA Navy to sea—that is, more in capabilities than in high-end global operations—even as Beijing's military maritime missions remain far from converging with Washington's. Xi's fleet review suggested that in many ways the PLA Navy is already front-ranking. Not only did the parade highlight the aircraft carrier *Liaoning*; it also included numerous ships armed with advanced long-range surface-to-surface and surface-to-air missiles, submarines offering China's first credible sea-based nuclear strike capability, and trained crews enabling the PLA Navy to choreograph this complex event.[18] China already boasts the navy with the most ships, produced by the world's largest shipyard infrastructure and shipbuilding industry with the fastest expansion of production capacity since World War II. Despite these and other distinctions, Xi made clear in his speech that he is dissatisfied with the status quo. He does not yet consider the PLA Navy to be a world-class navy, but vows that it will become one by midcentury.

While there are many ways to measure world-class status, the PLA leadership appears to be focused on the navy's proficiency to execute specified missions and tasks as its primary metric. We believe that China's 2019 defense white paper, published less than a year after the 2018 naval review and heretofore not updated, provides a roadmap for the missions and capabilities that the PLA Navy seeks in becoming world-class. This chapter argues that only when the PLA Navy integrates both advanced technologies and capabilities and has the requisite proficiency to support the full range of these missions will the PRC's military leadership assess that the service has achieved its goal. National priorities affect the relative emphasis on these missions over time. Therefore, strategically timed efforts

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[15] "China Focus: President Xi Reviews Navy in South China Sea."

[16] "习近平在出席南海海域海上阅兵时强调 深入贯彻新时代党的强军思想 把人民海军全面建成世界一流海军" [Xi Jinping, Attending a Military Parade in the South China Sea, Emphasized That the Party's Idea of Strengthening the Military in the New Era Should Be Implemented In Depth to Build the People's Navy into a World-Class Navy], *PLA Daily*, April 13, 2018.

[17] Zhou Meng, Qian Xiaohu, and Duan Jiangshan "海军长沙舰向着梦想全速前进" [Naval Ship Changsha: Full Speed Ahead toward the Dream], *PLA Daily*, September 18, 2020, http://www.xinhuanet.com/politics/2020-09/14/c_1126492624.htm

[18] "China Focus: President Xi Reviews Navy in South China Sea."

by Washington to sow doubt about the PLA Navy's ability to execute the requisite missions could influence Beijing's perceptions of progress toward becoming world-class.

Top-Tier Navies and China's Strategy

The goal of developing a world-class military preceded Xi Jinping's fleet review.[19] At the 19th Party Congress in October 2017, Xi stated that China would "modernize our military" by 2035 and "transform the military into world-class forces" by midcentury. In M. Taylor Fravel's interpretation, this does not mean that the PLA must be "the single best" military but only that it must be "among the best." However, as Fravel acknowledges, "the phrase [world-class military] has never been clearly defined. Authoritative Chinese government and PLA documents lack a clear and accepted definition of the term."[20] Although 2049 is typically cited as the deadline for achieving this goal, Beijing's time horizon might be even shorter than midcentury. One officer states that Xi ordered the PLA to "speed up" progress toward this goal and to "become a world-class military before 2049."[21] Regardless of the exact timeline, Xi appears to have had the PLA Navy's transformation prominently in mind. His naval parade occurred one year after the 19th Party Congress, underscoring his priority for developing the navy's world-class status. The 20th Party Congress reaffirmed these timelines.

What constitutes world-class status in practice? First, there is no substitute for naval power as the ultimate determinant of maritime power. Michael McDevitt emphasizes that China is already the "great maritime power" that both Xi and his predecessor Hu Jintao have envisioned, but the PLA Navy is not yet "commensurate with China's international standing."[22] All of China's maritime superlatives, impressive as they are, do not make the PLA Navy world-class.

Some analysts consider numbers of blue water–focused warships and the order of battle when assessing the status of a navy. U.S. Defense Department

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[19] M. Taylor Fravel, "China's 'World-Class Military' Ambitions: Origins and Implications," *Washington Quarterly* 43, no. 1 (2020): 85–99.

[20] Ibid., 85.

[21] Amber Wang and Sylvie Zhuang, "China Used Water Cannon as 'Deterrence' against Philippine Ships, PLA Senior Colonel Says," *South China Morning Post*, April 29, 2024, https://www.scmp.com/news/china/military/article/3260690/china-used-water-cannon-deterrence-against-philippine-ships-pla-senior-colonel-says.

[22] Michael A. McDevitt, *China as a Twenty-First Century Naval Power* (Annapolis: Naval Institute Press, 2020), 2.

talking points, for example, emphasize that China already has the largest navy by number of ships and submarines, with over 370 hulls and counting. Some suggest that fleet numbers matter most, and Beijing's numerical superiority confers inherent advantages.[23] PLA Navy surface combatants have more than tripled from around 50 in 1985 to roughly 160 today.[24]

Others measure the force's progress by tonnage, linked to advances in naval technologies, which tend to require additional volume and power. During the interwar years, the Washington Navy Treaty used tonnage and gun caliber to set the ratio of capital ships among leading world navies.[25] The U.S. Navy still displaces far more than the PLA Navy, but tonnage alone does not account for the types of ships, sophistication of sensors, weapons, command-and-control processes, tactics, training, and logistical support that all affect a navy's combat potential.[26]

PRC military writers consider many such points. One suggests that the PLA Navy "is still far from a first-class navy in terms of quantity and quality of weapons and equipment, total number of troops, total tonnage of ships, and level of information combat."[27] Another laments that the service lacks experience in the construction of ships and training, and that there is "still a long way to go before we can build a world-class navy."[28] Internal debate clearly persists concerning how to evaluate blue-ribbon status. While there are many ways to compare navies, what ultimately matters most is what the PRC's military leadership believes a world-class navy should be and what force it actually seeks.

Published one year after Xi directed the navy to become world-class at his 2018 review, China's 2019 defense white paper offers particularly useful insights into his related thinking and how the PLA Navy may operationalize its strategy. This publication is the most comprehensive open-source

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23 Sam J. Tangredi, "Bigger Fleets Win," *Proceedings*, January 2023, https://www.usni.org/magazines/proceedings/2023/january/bigger-fleets-win.

24 Christopher Carlson, "China Maritime Technologies and Structures" (presentation at the U.S. Naval War College, Newport, November 3–4, 2021).

25 "The Washington Naval Conference 1921–1922," U.S. State Department, Office of the Historian, https://history.state.gov/milestones/1921-1936/naval-conference.

26 Robert McKeown, "Assessing Military Capability: More Than Just Counting Guns," *Proceedings*, December 2022, https://www.usni.org/magazines/proceedings/2022/december/assessing-military-capability-more-just-counting-guns.

27 "外界关注中国海军——向着世界一流海军迈进" [The Outside World Focuses on China's Navy—Moving toward a World-Class Navy], in "本期特稿: 中国海军开训全景大扫描——向着世界一流海军阔步前进" [Special Report: A Panoramic View of PLA Navy Military Training—Advance in Giant Strides to Build a World-Class Navy], ed. Yuan Zhenjun and Yan Jianyi, *Navy Today*, January 2018, 12–21.

28 Jun Sheng, "捍卫和平筑梦深蓝" [Defending Peace and Dreaming of the Deep Blue], *PLA Daily*, April 18, 2018.

document available containing Xi's strategic vision for his military. With broad strokes, it identifies many of the objectives, missions, and capabilities he expects of his armed forces. This chapter's framework therefore draws on China's 2019 defense white paper. Following the 2015 defense white paper (and 2014 strategic guidelines), which prioritized the maritime domain, the 2019 defense white paper identifies several missions for the PLA, including many that prioritize the maritime domain.

The next section examines the ends, ways, and means of a world-class PLA Navy.[29] One indication that the PLA Navy has achieved its objective of becoming a top-of-the-line navy (ends) will be its ability to execute a global strategy. PRC maritime strategy (ways) has a direct impact on what the PLA Navy procures and how it trains. Maritime strategy has been consistently prioritized, funded, and implemented since 1985, when the PLA Navy received its first service-specific strategy (near seas active defense) under Deng Xiaoping. Three decades later, in 2015, Xi added a far seas protection layer. Since around the publication of the 2019 defense white paper, the PLA Navy has been pursuing a comprehensive strategy incorporating a third layer: "near seas defense, far seas protection, oceanic presence, and expansion into the two poles."[30] The increasingly global nature of the maritime domain for preeminent naval operations is underscored by the transitioning of the PLA Navy's strategy to include the aforementioned radiating layers of emphasis. Demonstrated capabilities to execute these missions (means) will convince the PRC leadership that it has a top-quality navy.

The Ends, Ways, and Means of a World-Class PLA Navy

A World-Class Navy's Vision (Ends)

The concept of a world-class military is nested within the 2019 defense white paper as one of the strategic efforts for the PLA to safeguard China's sovereignty, security, and development interests.[31] Listed under the heading

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[29] Ends are the strategic outcomes sought, including defining the overarching political aim. Means are the resources and capabilities available. Ways are how means are used to achieve the desired end state. Steven Heffington, Adam Oler, and David Tretler, eds., *A National Security Strategy Primer* (Washington, D.C.: National Defense University Press, 2019), 1–2.

[30] Yu Wenbing, "乘势而上建设一流军事指挥学院" [Take Advantage of the Situation to Build a World-class Military Command College], *People's Navy*, July 13, 2018, 3, cited in Ryan D. Martinson, "The Role of the Arctic in Chinese Naval Strategy," Jamestown Foundation, China Brief, December 20, 2019, https://jamestown.org/program/the-role-of-the-arctic-in-chinese-naval-strategy.

[31] State Council Information Office of the People's Republic of China (PRC), *China's National Defense in the New Era* (Beijing, July 2019), https://english.www.gov.cn/archive/whitepaper/201907/24/content_WS5d3941ddc6d08408f502283d.html.

"Continuing to strengthen the military in the Chinese way," the concept of a top-tier military is one of the PLA's three benchmark developmental goals. It is identified as the third goal, behind achieving mechanization by 2020 and completing modernization by 2035.[32] While the first two goals address modernization milestones, this third goal calls for PLA "transformation," which is more than simply a linear continuation of advancing technological strengths. PLA writings suggest this "world-class" goal is tied to both technological development and the navy's capability to execute specified missions.

Two months after Xi Jinping first called for "transform[ing] the military into world-class forces," Admiral Shen Jinlong (the PLA Navy commander from 2017 to 2021) delivered an internal speech explaining how to make the navy an unsurpassed service.[33] He addressed a conclave of senior PLA Navy leaders gathered to study how to implement the vision of the 19th Party Congress. Shen's statements provide some of the clearest insights into leadership thinking about Xi's transformational objectives, articulating several important characteristics of an outstanding navy.

The first quality Shen addressed was China's need for a navy with global strategic influence. Shen's obligatory rejection of "global hegemony" allows for limited use of naval force overseas as a strategic scalpel advancing China's strategic interests. A 2023 journal article published by the PLA's Academy of Military Science (AMS) elaborates on this characteristic. According to the article, a world-class navy should amplify China's international voice and contribute to influencing the shape of international maritime governance, deter and stop wars, stabilize and control international tensions, and show China's willingness to demonstrate strategic support to the world.[34] This supplemental context to Shen's statements suggests that a world-class navy is far more than a symbolic overseas presence. Instead, a navy with global strategic influence is one that can be used to project combat power overseas to "fight and win local regional wars that could occur at sea."[35]

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[32] Ibid.

[33] "深入贯彻党的十九大精神——统筹和推进新时代海军转型建设" [Deeply Implementing the Spirit of the 19th Chinese Communist Party National Congress—Coordinating and Promoting the Transformation and Construction of the Navy in the New Era], *People's Navy*, December 13, 2017; and "深入贯彻党的十九大精神——坚持从思想上政治上建强海军" [Thoroughly Implement the Spirit of the 19th Chinese Communist Party National Congress—Persist in Building a Strong Navy Ideologically and Politically], *People's Navy*, December 13, 2017.

[34] Liu Liqiao and Jia Benjia, "'全面建成世界一流海军' 的理论逻辑, 历史逻辑与实践逻辑" ["Building a World-Class Navy in a Comprehensive Way": Theoretical Logic, Historical Logic, and Practical Logic], *Military History* 3 (2023): 6–8.

[35] Liu and Jia, "'全面建成世界一流海军' 的理论逻辑, 历史逻辑与实践逻辑."

Next, Shen focused on integrated sea control—one of the PLA Navy's main efforts, which he considered essential for naval preeminence. He explained that "if we cannot control the sea, we are controlled by the sea."[36] Shen's speech did not address the specific parameters wherein China's navy should be capable of exercising sea control. The PLA Navy, however, has underscored that its goal within the first island chain is "sea control." This means being able to operate at will in a given area for a given period of time while preventing the adversary from doing so.[37] Authoritative PLA authors affirm this objective. Some describe the tactics the PLA Navy will use to establish sea control as "integrated near seas operations," which are defined as "having the ability to seize and maintain control over the main waters of the near seas."[38]

The U.S. Navy is the benchmark the PLA Navy uses to measure its progress toward this objective. A 2018 article in the AMS journal *China Military Science* focused on contestation with the U.S. Navy in and around the near seas, declaring that "the PLA Navy should not only be more powerful than the world's most powerful navy, but also *prevent* the powerful navy from engaging in maritime disputes" (italics added).[39] A more recent AMS article highlights China's geographic proximity to the near seas and calls for a word-class navy to "fixate on the Strong Enemy opponent" and to "focus on fighting and winning wars."[40] Taken in conjunction with Shen's call for sea control, these statements suggest that a world-class navy is one that can establish sea control in disputed areas—the near seas and their western Pacific approaches—and that this criterion of success is squarely focused on competition for sea control with the U.S. Navy.

Beyond the western Pacific, the combat power required to establish sea control would likely vary situationally. Shen's comments about global influence and those of other PLA authors about deterring and halting wars overseas may suggest a focus on deterring the maritime activities of potential

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36 "深入贯彻党的十九大精神——统筹和推进新时代海军转型建设."

37 The *PLA Dictionary of Military Terms* defines "sea control" as "command of the sea," which means "the right to control a certain sea area within a certain period of time during combat" and which "depends on corresponding control of the air." To achieve this goal, "the navy is usually the main force, with the cooperation of other military services/branches." No definition is provided for "sea denial."

38 Yu Lingling, Feng Jinbo, and Liu Zhihao, "毛泽东海军建设运用思想探要" [Mao Zedong Thought on Building and Employing Naval Forces], *China Military Science* 6 (2023): 52.

39 Liu Lijiao and Chen Wenhua, "改革开放以来海军战略理论的发展及经验启示" [Theoretical Development of Naval Strategy since Reform and Opening Up and Its Historical Implications], *China Military Science* 6 (2018): 59–65.

40 Liu and Jia, "'全面建成世界一流海军' 的理论逻辑, 历史逻辑与实践逻辑," 6–8.

adversaries. The PLA Navy must be the strongest force present so that it can influence the behavior of other lesser maritime forces.

A third characteristic of an elite navy, according to Shen, is technological innovation. While militaries typically attempt to integrate advanced technologies, Shen believed that today's cutting-edge technologies will enable the PLA Navy to "solve" existing weaknesses. It faces a "historic opportunity" to "seize the high ground" in strategic competition by harnessing such innovation. Shen viewed mastering intelligized warfare—shaped centrally by the integration of artificial intelligence (AI)—as enabling China to outcompete the United States in such technological fields as the Internet of Everything and smart manufacturing.[41]

Other PLA authors echo Shen's emphasis on the need for a world-class navy to integrate such technologies. One author states that the "key to victory is achieving intelligent combat dominance through precise attacks and defenses, with weapons and systems that mix man and machine, with those that are unmanned being dominant, and combat units that are agile and can autonomously reconstruct themselves."[42] Other authors are even more explicit. Two even claim that mastering AI will provide the PLA Navy with the opportunity to "leapfrog" its U.S. counterpart.[43]

In incorporating such technologies, however, the PLA Navy is charting a unique course. In the context of a discussion about the history of world-class navies, one PLA author opposes merely emulating other navies: "to build a first-class navy, it is necessary to break through traditional habitual thinking [and] firmly establish the concept of innovation, foresight, and transcendence."[44] From this perspective, building a world-class navy requires the PLA Navy to innovate uniquely and leverage these technologies to achieve its objectives.

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[41] "深入贯彻党的十九大精神, 统筹和推进新时代海军转型建设——沈金龙在海军军以上领导干部学习贯彻党的十九大精神理论集训上的辅导讲话" [Thoroughly Implement the Spirit of the 19th Party Congress, Plan and Promote Transformational Construction for the Navy in the New Era—Shen Jinlong's Guidance Speech at the Theoretical Training for Navy Leadership Cadres (Officers) at the Corps and Above Levels to Study and Implement the Spirit of the 19th National Congress of the Chinese Communist Party], *People's Navy*, December 13, 2017.

[42] Liu and Jia, "'全面建成世界一流海军' 的理论逻辑, 历史逻辑与实践逻辑."

[43] "责任编辑虞章才责任校对李国强 为什么海军转费在必行?" [Why Is the Transformation of the Navy Essential?], *People's Navy*, July 6, 2018, 3.

[44] Zhuang Congyong, "世界一流海军发展的理论轨迹—美俄等主要海军强国建设海军的经验与启示" [Theoretical Trajectory of the Development of a World-class Navy: The Experience and Inspiration of the Construction of the Navies of Major Naval Powers such as the United States and Russia], *PLA Daily*, November 28, 2017, http://military.people.com.cn/n1/2017/1128/c1011-29672189.html.

A World-Class Navy's Missions (Ways)

Shen Jinlong's calls for the PLA Navy to achieve global influence, develop integrated sea control, and capitalize on technological innovation constitute its broad objectives. Global influence and sea control appear to be mission-oriented objectives—indicative of a navy enabled by advanced technologies to execute diverse tasks at multifarious locations. PRC authors highlight concerns about building a navy without mission focus. One author describes China's previous ship construction practices as akin to launching "dumplings" in the water aimlessly.[45]

Recognizing rudder requirements, Shen explained that Xi Jinping's call to "comprehensively build a world-class military" reflects the need to expand naval development from a "capability-based" approach to a "needs-based" approach.[46] That is, the PLA Navy needs to shift to building a fleet equipped with platforms and weapon systems designed for the missions assigned. A Naval Research Institute author indicates that the navy's role is shifting from performing a single task and responding to traditional maritime threats to performing diversified tasks and responding to complex maritime threats.[47] Such statements clarify that the PLA Navy must be operationally focused on assigned missions and tasks to guide its development. The future capabilities—the means of strategy—that it is likely to develop are those that will enhance its capabilities to execute these missions.

The 2019 defense white paper summarizes the PLA Navy's missions. The document identifies numerous strategic "ways" for the PLA to support the strategic end state of safeguarding PRC sovereignty, security, and development interests.[48] These include "ways" consistent with many nations' defense aims, such as deterring and resisting aggression; safeguarding national sovereignty, maritime rights, and space, cyber, and overseas interests; and promoting sustainable development. Also included are ways unique to China, such as opposing and containing "Taiwan independence." The 2019 defense white paper expounds on several of these ways to support the PLA's strategic end state.

The third section, "Fulfilling the mission…of China's armed forces in the new era," describes what missions the PLA must fulfill and how the military must prepare itself to execute them to achieve the PLA's strategic

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[45] Jun, "捍卫和平筑梦深蓝."

[46] "深入贯彻党的十九大精神——统筹和推进新时代海军转型建设."

[47] Naval Command College, "建设一支强大的人民海军，寄托着中华民族向海图强的世代夙愿，是实现中华民族伟大复兴的重要保障 牢牢把握全面建成世界一流海军的时代内涵."

[48] State Council Information Office (PRC), *China's National Defense in the New Era*.

end state. The missions identified in this section repeat missions identified earlier in the white paper, underscoring their importance. This includes elaboration of the PLA's roles beyond PRC-controlled borders: addressing sovereignty issues, protecting overseas interests, and conducting disaster relief and rescues. Mission operationalization is also explicated. The PLA will develop the capabilities to execute these missions by maintaining combat readiness, training in realistic combat conditions, and advancing its cyber, space, and nuclear capabilities—critical force enablers. **Table 1** summarizes these missions and the requirements to execute them. Taken together, the third section of the defense white paper prescribes how China's military will progress toward achieving its world-class goal. These missions and the training necessary to fulfill them hold significant implications for the PLA Navy's transformation and its development of combat and operational capabilities.

The prescribed missions exemplify Shen's vision for an outstanding navy. Missions to protect China's overseas interests, which have expanded under Xi's signature Belt and Road Initiative, and to conduct disaster relief

T A B L E 1   World-class naval missions

Mission	Requirements
Safeguard national territorial sovereignty and maritime rights and interests	• Defend waters, islands, and reefs in the East and South China Seas • Acquire full situational awareness of adjacent waters • Conduct joint rights protection and law-enforcement operations • Respond to security threats • Safeguard national unity
Protect China's overseas interests	• Build far seas forces • Develop overseas logistical facilities • Enhance capabilities to conduct diversified military tasks • Conduct vessel protection operations • Maintain the security of strategic sea lines of communication • Execute overseas evacuation and maritime rights protection operations
Participate in disaster rescue and relief	• Transport materials • Conduct specialized operations such as search and rescue • Control major threats

S O U R C E : State Council Information Office (PRC), *China's National Defense in the New Era.*

operations align with Shen's goals for the PLA Navy's global influence. Safeguarding national territorial sovereignty and maritime rights and interests requires sea control. Harnessing advanced cyber, space, and nuclear technologies underpins all these missions and dovetails with Shen's goals for technological innovation. Development of these capabilities enhances combat preparation and readiness. The consistency between Shen's characterization of a leading navy and the attendant missions just one year after Xi's call for a world-class PLA in the 19th Party Congress work report suggests that his service's ability to execute these missions represents the benchmark to evaluate the PLA Navy's progress toward becoming world-class. Moreover, these missions chart a clear course, providing the navy with the guiding framework for its training, construction, and development.[49]

A World-Class Navy's Capabilities (Means)

Transforming the PLA Navy into a world-class force requires both the necessary hardware and the tactical proficiency to employ it to execute the missions mandated in the 2019 defense white paper. Each mission requires different combinations of platforms, equipment, experience, and prowess. Evaluating the PLA Navy's progress, therefore, requires data derived from each of these variables.

A qualitative comparison of general mission-specific technologies elucidates hardware progress. Driven by Beijing's maritime strategy, PLA Navy capabilities have advanced tremendously over the past two decades, with far seas operations driving the acquisition and deployment of many platforms and systems.

By contrast, information concerning ship readiness and crew proficiency remains sparse. Specific details, such as communications difficulties, failures encountered, and crew coordination issues are rarely included in available reporting about PLA Navy tactical training evolutions. This makes it particularly difficult to evaluate the proficiency of a ship or its crew to execute tactical assignments or to accurately strike targets at range. Yet, even though the required information to evaluate proficiency is opaque, the core capabilities necessary to achieve mission success are often intuitive. The PLA Navy's proficiency to achieve these core capabilities can thus be extrapolated from observations of its order of battle, platform characteristics, and operations.

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[49] Xiao Tianliang, ed., 战略学 [Science of Military Strategy] (Beijing: PLA National Defense University Press, 2020), 358–69.

Inferring the full extent of PLA Navy possibilities for the distant 2049 horizon from guidance grounded in the 2019 defense white paper requires an authoritative standard to measure the force's progress toward achieving premier status. Unfortunately, open-source literature does not provide a rubric to pinpoint progress. Moreover, with the desire to surpass the U.S. Navy, the PLA Navy's own criteria will be different from those criteria used by other nations to evaluate progress. Nonetheless, knowing the PLA Navy's developmental goals provides some context. Further insights can be gleaned from Chinese military journal articles describing areas of emphasis or operational challenges the PLA Navy is working to address. In sum, given these constraints on outside assessments of its progress toward world-class status, an informed, albeit subjective, evaluation of the PLA Navy's capability to execute the missions required to achieve world-class status is more realistic.

Evaluation of Mission Capabilities and Progress toward World-Class Status

The capability to execute the missions identified in the 2019 defense white paper is the yardstick by which the PLA Navy measures its progress toward world-class status. While the ability to execute each of these missions contributes to perceptions of progress toward maritime preeminence, the sequence of their listing may suggest the PLA Navy's priorities. The mission to safeguard China's national territorial sovereignty and maritime interests is identified at the outset of the section in the white paper detailing the PLA's requirements to fulfill its missions and tasks. It is logically listed first, indicating the primacy of this mission. The prerequisites for execution—synchronization of combat power, communications, and capabilities—are the most complex and challenging. Training evolutions suggest that the PLA Navy routinely conducts "high-intensity, and realistic combat training" to develop the proficiency to execute this mission to become a "world-class navy."[50] While sovereignty issues extend to the East and South China Seas, the most challenging campaigns concern Taiwan. PLA Navy ships and aircraft routinely train to achieve this mission, which is the source of extensive PLA scholarship. Depending on the situation, a Taiwan campaign

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[50] "外界关注中国海军——向着世界一流海军迈进." For a discussion of training evolutions, see Fan Pengyu et al., "海军某护卫舰支队组织多课目实战化训练" [A Frigate Detachment of the Navy Organizes Multi-Course Combat Training], China Military TV, October 7, 2021, http://www.js7tv.cn/video/202110_259349.html.

could require the PLA Navy to establish sea control, deny access to an enemy, project power, and provide sealift, among other tactical requirements. The complexity of this mission is second only to executing major combat operations in the far seas.

PLA Navy tactical requirements regarding Taiwan differ by contingency. Requisites for a joint island-landing campaign differ from those for a joint blockade campaign/quarantine action or a joint firepower-strike campaign.[51] A common necessity is the capability to establish sea control, which Shen Jinlong highlighted as defining a world-class navy. While sea control is only one characteristic of a world-class navy, it is one of the most difficult tasks to perform in a contested environment, such as during a Taiwan campaign or any sovereignty-related mission. Capabilities to execute sea control, therefore, indicate not only the potential for mission success but also the PLA Navy's progress toward becoming the navy Xi Jinping seeks. Evaluating progress toward this objective, therefore, yields insight into its progress toward becoming world-class.

Long-range ship-launched surface-to-surface missiles such as the YJ-18, ship-launched anti-ship ballistic missiles (ASBMs) such as the recently developed YJ-21, and the PLA Rocket Force's and PLA Air Force's ASBMs are weapons China's military could employ to concentrate firepower in specific sea areas in an attempt to deny access to portions of the western Pacific and achieve sea control. Weapon system capabilities alone do not guarantee proficiency in establishing sea control.[52] The ability to concentrate firepower at a time and place of one's choosing, however, represents a significant step toward establishing sea control.

Analysis of the naval exercise the PLA conducted in response to the visit to Taiwan by House Speaker Nancy Pelosi in August 2022 offers a case study elucidating the PLA Navy's proficiency in denying water space as a step toward establishing sea control. While the uncontested exercise did not occur during war, the PLA termed these "joint combat training exercises" focusing on preparing methodically for "joint blockade, sea target assault," among other operations.[53] Given the incentives to blur training operation

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[51] Zhang Yuliang, ed., 战役学 [Science of Campaigns], 2nd ed. (Beijing: National Defense University Press, 2006). This is the most authoritative source available, but its coverage reflects its lack of updating in nearly two decades: "Landing Campaign," 310–29; "Joint Blockade Campaign," 292–309; and "Second Artillery Conventional Missile Assault Campaign," 629–36.

[52] Moreover, other forces also support sea denial, such as via multifarious anti-ship missiles launched from various platforms. Notably, some naval aviation is being transferred to the PLA Air Force, which likewise is responsible for long-range maritime strike missions.

[53] Bonny Lin et al., "Tracking the Fourth Taiwan Strait Crisis," Center for Strategic and International Studies, ChinaPower, https://chinapower.csis.org/tracking-the-fourth-taiwan-strait-crisis.

distinctions and reduce warning time, this suggests that these exercises might closely resemble wartime deployments or operations.

The exercise conducted after Pelosi's visit was larger and closer to Taiwan than previous PLA drills, including during the 1995–96 Taiwan Strait crisis.[54] The integrated firepower capabilities demonstrated suggest PLA efforts to control the sea by holding adversary surface forces in a chosen area at risk. At the peak on August 7, seven closure areas were announced and fourteen PLA Navy ships were detected operating near Taiwan.[55] The closure areas themselves are a strategic tool to deny access to specific water space during peacetime. This example shows that the PLA Navy needs to function within a joint team to achieve coercive effects—as it did here. With part of the training focused on executing a blockade, ships were likely distributed along major shipping channels rather than positioned around the island evenly. Nevertheless, the fourteen participating surface ships, as well as at least one submarine, would enable the PLA Navy to have overlapping, redundant anti-ship cruise missile coverage to target surface ships around Taiwan's entirety.[56] This scenario assumes omniscient command, control, computing, communications, cyber, intelligence, surveillance, reconnaissance, and targeting (C5ISRT). Concentration of such firepower more narrowly would further enhance sea-denial capabilities. Surface-to-air missile (SAM) coverage would not be nearly as dense, but the inclusion of PLA Air Force aircraft in the exercise suggests they theoretically could have been employed to complement PLA Navy surface-to-air capabilities.

Establishing sea control requires undersea control. Major PLA Navy destroyers and frigates, which likely participated in the exercise, are armed with Yu-8 torpedoes. These weapons can be vertically launched and fly approximately twenty nautical miles airborne before traveling an additional six to eighteen nautical miles submerged.[57] Shang-class nuclear-powered submarines also carry other torpedo variants (e.g., Yu-6, Yu-9, Yu-10, or Yu-12).[58] The density of antisubmarine warfare capabilities present in the exercise likely was insufficient to establish control of the entire undersea domain. In a real contingency, however, the PRC would presumably

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[54] Lin et al., "Tracking the Fourth Taiwan Strait Crisis."

[55] Ibid.

[56] Distances have been calculated using Google Earth.

[57] "Yu-8/CY-5 Rocket-Assisted ASW Weapon," Janes, July 25, 2023, https://customer.janes.com/display/JNW_0062-JNW_.

[58] Manfred Meyer, *Modern Chinese Maritime Forces*, 2nd ed. (Springfield, VA: Admiralty Trilogy Group, 2024), 21.

augment its undersea warfare capabilities with subsurface platforms and seabed weapon systems.

The August 2022 exercise demonstrated that the PLA Navy has sufficient platforms and embarked weapon systems to deny water space around Taiwan, at least in uncontested conditions. Yet, while the force is theoretically capable of denying sea areas as a step toward establishing sea control, its proficiency with the necessary C5ISRT networks to synchronize efforts remains unknown in available open sources. Future PLA Navy investments may prioritize developing systems and technologies that help ensure that ships and crews are equipped and trained on networks and information systems to ensure synchronization to enhance sea control capabilities. This exercise also suggests that PLA Navy warships could require longer-range SAMs for air defense, mitigating the need for complicated air support from the PLA Air Force. Longer-range SAMs and greater magazine depth would be especially helpful when the navy operates outside the air force's air defense coverage. The development of ship-based SAMs capable of ranging well beyond existing performance parameters, therefore, may be necessary to support efforts to establish control of the sea during deployments farther from China.

The 2019 defense white paper's second mission is protecting overseas stakes—security, rights, and the interests of PRC citizens, institutions, and investments. This mission has profound implications for the PLA Navy. China's national interests are rapidly expanding at home and abroad. PLA scholars emphasize the country's tremendous reliance on seaborne trade,[59] which currently constitutes approximately 90% of its trade by volume and 60%–70% by value.[60] Moreover, millions of PRC citizens work overseas in virtually every country. "Wherever our ships sail, our warships should go," a scholar at the Naval Research Institute declares. "Wherever our overseas interests expand, our people's navy should be there."[61] PRC officials and scholars appear to envision a navy with a larger far seas footprint, with more ships being deployed wherever China's national interests face threats.

The PLA Navy appears to consider limited combat operations a potential requirement for protecting China's interests abroad in the far seas. PLA writings describe "far seas mobile operations" as designed to protect sea

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[59] "责任编辑虞章才责任校对李国强 为伸么海军转费在必行?"

[60] "Maritime Profile: China," UN Commission on Trade and Development, April 11, 2024, https://unctadstat.unctad.org/CountryProfile/MaritimeProfile/en-GB/156/index.html.

[61] "责任编辑虞章才责任校对李国强 为伸么海军转费在必行?"

lines of communication and safeguard China's equities overseas.[62] Authors of recent PLA journal articles suggest that the intent of these operations is to damage or attack enemies' key strategic passages and lines of communication rather than to contest a peer competitor.[63] Depending on the scope of the objective, the PLA Navy could execute such operations to advance limited objectives armed with existing capabilities. As China's naval fleet grows, its capabilities continue to improve to conduct such operations.

Avoiding major contingencies that do not involve its vital interests enables the PLA Navy to advance the primary end state it is tasked to support elsewhere. This allows it to focus its efforts on amassing capabilities necessary for Taiwan or other near seas contingencies while simultaneously projecting power around the world unencumbered by conflict. An article in *China Military Science* argues that future overseas missions will be oriented more toward diversified non-war maritime missions such as countering maritime terrorism, piracy, crime, and natural disasters.[64] Examples of such operations include China's noncombatant evacuation of citizens of the PRC and ten other countries from Yemen in April 2015. Similarly, the PLA Navy's forward presence enabled the PRC to evacuate over 1,300 PRC citizens from Sudan in April 2023, albeit in a permissive environment hundreds of miles away from the actual fighting.[65] Other PRC authors describe the need for this expanded footprint to support these missions. PLA Navy commander Shen Jinlong and political commissar Qin Shengxiang declare that China's world-class navy will have "new" aircraft carrier formations and amphibious forces capable of responding to maritime security threats."[66] This unprecedented reference suggests deployments beyond current operational norms and may indicate that China intends to deploy these large decks overseas.

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[62] Xiao Tianliang, ed., 战略学 [Science of Military Strategy] (Beijing: National Defense University Press, 2015), 342. The revised 2020 edition of this volume removed the content about "expelling the enemy from the near seas" and the particular threats posed by the "powerful enemy," presumably because it was judged too sensitive. See Xiao, 战略学 (2020), 362–63.

[63] Feng Jinbo and Yu Lingling, "毛泽东关于海军建设论述探要" [An Exploration of Mao Zedong's Discourse on Naval Construction], *Political Work Journal* 12 (2023): 8–9. For a discussion of this operational concept, see Ryan Martinson, "On the PLAN's 'Core Operational Capabilities,'" China Maritime Studies Institute, CMSI Note, no.9, August 22, 2024, https://digital-commons.usnwc.edu/cmsi-notes/9.

[64] Liu and Chen, "改革开放以来海军战略理论的发展及经验启示."

[65] Guo Yundan and Xu Yelu, "PLA Naval Vessels Evacuate More Than 1,300 Chinese and Citizens of 5 Other Countries from Sudan," *Global Times*, April 27, 2023, https://www.globaltimes.cn/page/202304/1289902.shtml.

[66] "海军司令员沈金龙海军政治委员秦生祥" [PLA Navy Commander Shen Jinlong and Political Commissar Qin Shengxiang], *Navy Today*, April 2018; "人民海军: 扬帆奋进70年" [The People's Liberation Army Sailing for 70 Years], *Navy Today*, April 2018; and *Qiushi*, no. 8 (2019).

Similar to how sea control is required to defend China's national sovereignty and its maritime claims, port access underpins the scope of global navy operations. Given that ports are necessary for provisioning, repair, and maintenance, the 2019 defense white paper emphasizes overseas access in discussing far seas operations. Specifically, it highlights the Djibouti support base, with its maintenance and medical offerings, as the type of facility needed to sustain these global operations.[67] While facilities like Djibouti and the recently constructed piers at Ream Naval Base in Cambodia are two models for potential logistics support facilities, pier space at commercial port facilities may meet many PRC needs.

The PLA Navy's larger worldwide footprint presages an increase in the number of comprehensive resupply ships to support sustained operations. These vessels routinely accompany the navy on deployments to the Gulf of Aden and support its training evolutions in the Philippine Sea. Crews must become proficient with tactical ship-to-ship resupply requirements. Navigating approaches to a resupply ship, connecting fuel lines, and station-keeping are skills that crews must master to operate routinely worldwide. Vessel training centers have integrated underway training replenishment simulators, which enable crews to master ashore manifold weather, times, and refueling formations as part of training required to certify vessels as deployable.[68] To routinely deploy to more locations around the world to protect the diversity of the PLA's global strategic interests, the PLA Navy is likely to require additional comprehensive resupply ships while continuing to routinely train its crews in proficient ship-to-ship resupply. The existing capacity of such platforms, however, allows the PLA Navy to operate along limited strategic sea lines of communication for protracted periods. Such capabilities align with the requirement to conduct the "far seas mobile operations" described by PLA authors, suggesting that the PLA Navy could be on track to be capable of this mission—a prerequisite for becoming a world-class navy.

The third mission and task listed in this section of the 2019 defense white paper is for the PLA to participate in humanitarian assistance and disaster relief (HADR). This mission primarily addresses aid regarding domestic disasters such as earthquakes, floods, and epidemics. However, it also is suggestive of military maritime roles overseas. For the PLA Navy,

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67 State Council Information Office (PRC), *China's National Defense in the New Era*.

68 Zou Xiangmin, Zhu Minyu, and Wang Lei, "舰艇海上补给仿真训练系统投入使用" [Simulation Training System for Naval Replenishment Put into Use], Tencent QQ Net, October 14, 2022, https://mp.weixin.qq.com/s/Wyiu1xWFRGw6czcq0YoRw.

executing this mission also effectuates its assignment to protect overseas interests as disasters threaten them.

Expeditionary capabilities are a critical component of international HADR efforts. PLA Navy Marine Corps deputy chief of staff Chen Weidong outlined plans to increase low-intensity non-war military tasks for amphibious forces, including forward presence, maritime deterrence, chokepoint control, escort operations, and overseas defense.[69] These undertakings are not only near seas but also far seas requirements: expeditionary operations include forward deployment to hot spots and "key points overseas."[70] This indicates that China's naval footprint may soon consist of regular expeditionary force deployments capable of responding to multifarious contingencies, both proximate and global.

What, then, might the PLA Navy become by 2035, the time by which Xi mandates its modernization to be essentially completed? McDevitt emphasizes that China already has the world's second-strongest blue water navy.[71] "China wants to be able to compete effectively against the best…. A world-class PLA would be able to achieve the CCP's political objectives, especially in the face of armed resistance from the United States," he explains. He adds that "Beijing is not looking to fight any foe at any time anywhere" but rather "to have an unsurpassed military advantage in contingencies it assesses it may face."[72]

McDevitt foresees a PLA Navy "with global expeditionary capabilities, mimicking the United States in certain aspects in the Indian Ocean region, but…also maintain[ing] an overwhelming regional force reminiscent of Imperial Japan's on the eve of World War II."[73] Unless China somehow unifies Taiwan, freeing up military resources for an extraregional focus, Fravel's projection seems likely to hold: "the greatest near- to mid-term challenge for the United States is not the global presence of the PLA, but a PLA with world-class capabilities that becomes the dominant military in East Asia."[74] Beyond the PRC's domestic demands and potential progress in addressing prioritized sovereignty claims, the next most consequential variable for protracted global PLA Navy capabilities is overseas access and

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[69] Chen Weidong, "透视两栖作战新特点" [A Perspective on the New Characteristics of Amphibious Operations], *People's Navy*, October 8, 2021.

[70] Ibid.

[71] McDevitt, *China as a Twenty-First Century Naval Power*, 67.

[72] Ibid., 177–78.

[73] Ibid., xi.

[74] Fravel, "China's 'World-Class Military' Ambitions," 97.

basing. This is a force multiplier increasing presence and response options in distant seas more than any conceivable fleet growth.

Conclusion: Sailing Vast Oceans, Destination Unclear

This chapter has examined Xi Jinping's concept of a world-class navy, reviewing where it sits within China's overall military strategy and how it supports China's military objectives. The chapter defines how this concept applies to the PLA Navy, focusing on a 2017 speech by its then commander Admiral Shen Jinlong detailing his vision for a prime-grade navy. Shen focused on missions that determine the capabilities necessary. The 2019 defense white paper defines several of these missions and thus is a useful guide for identifying the capabilities and priorities the PLA Navy will likely pursue. To ascertain the force's progress in becoming second to none, the chapter subsequently evaluated the navy's current capabilities to execute these missions. In doing so, the chapter has examined ends and ways extensively, while means are addressed in the hardware component of capabilities. Using observed tactics to evaluate proficiency concretely is particularly challenging with open-source materials and merits further research. This study reveals that the PLA Navy is steadily converging with the U.S. Navy structurally but has been tasked to surpass the U.S. Navy in assigned missions.

The PLA Navy appears to measure progress toward achieving world-class status using criteria related to the capability to effectively execute the missions specified in the 2019 defense white paper, including safeguarding national territorial sovereignty and maritime rights and interests, protecting China's overseas interests, and providing HADR. Observed naval operations and a review of PLA literature suggest that the PLA Navy devotes the preponderance of its efforts toward achieving the first two missions and places somewhat less emphasis on fostering the capabilities necessary for HADR. This, along with the sequence in which missions are listed in the defense white paper, could be indicative of their relative priority and the possibility that the PLA Navy could achieve world-class status in some areas well ahead of others. Nevertheless, on balance, these imperatives will likely dictate ship construction, tactics, training, and operations for the next several decades. The ability to execute missions likely correlates with observable PLA Navy order of battle, platform capabilities, crew proficiency, and operations. While the PLA Navy already has many of the platforms and weapon systems necessary to conduct these missions, further training and

experience operating overseas are likely required to achieve Xi's ambitious goals for naval preeminence.

Execution of these missions portends a dramatic increase in the number of far seas naval deployments over the next several years in order to protect China's global interests. Near seas training will likely focus on achieving sea control and warfighting through simulated combat conditions, improving coordination among platforms, and experimenting with command and control. The PLA Navy has begun building expeditionary capabilities for diversified operations throughout the near and far seas. A world-class navy is not guaranteed, however.

China might already be pursuing a somewhat different path from the United States regarding sea control and power projection. A case in point is China's Type 055 Renhai-class cruiser. The extraordinary firepower available for its 112 vertical launching system cells, including YJ-21 ASBMs,[75] could enable Beijing to sidestep future debates regarding whether the carrier should be the sea control capital ship by emphasizing the anti-ship capabilities of its escorts. But there is no guarantee that the path the PLA Navy takes will lead to its objective. Innovating with advanced technologies to build a more potent force will be a key enabler for the navy to achieve the status it seeks. Export controls or other efforts to limit high-tech transfer to the PLA could hamper the PLA Navy's efforts to become world-class.

Similarly, deliberate actions that compromise capabilities to execute tasks envisioned may instill doubt about the PLA Navy's progress toward world-class transformation. While the navy is rapidly developing the weapon systems and capabilities it needs to establish sea control in the near seas and western Pacific, it could lack the C5ISRT capabilities necessary to present an integrated real-time threat under the fog of war. The U.S. Navy's sustained physical presence in waters close to China during peacetime or its manipulation of PLA perceptions concerning the location of U.S. warships at strategic locations in wartime may cause PLA Navy leadership to question its ability to establish sea control given the inability to deny targeted water space. In addition, a more robust military response than anticipated to a PRC military action could instill further doubt about the PLA Navy's ability to establish sea control. Requirements for overseas port access represent a critically vulnerable rate-limiter for sustained global operations. Targeted collaboration with receptive nations to thwart the PLA Navy's access may help prevent the force from gaining the supportive experience it needs to

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[75] Minnie Chan, "Chinese Navy Shows Off Hypersonic Anti-Ship Missiles in Public," *South China Morning Post*, April 20, 2022, https://www.scmp.com/news/china/military/article/3174946/chinese-navy-shows-hypersonic-anti-ship-missiles-public.

operate globally at the highest levels. Port-related weaknesses could also help slow China's transition to more regular overseas deployments. Finally, HADR is among several potential tasks for PLA Navy expeditionary forces. As expeditionary forces operate farther from China, they will gain confidence in their ability to execute HADR and other non-wartime tasks. The persistence of near seas requirements for these forces, such as to support PRC claims in the South China Sea or respond to a Taiwan contingency, could help calibrate the pace of development of naval capabilities for this mission, degrading Beijing's confidence in expeditionary force capabilities.

Beijing's perceptions concerning the PLA Navy's status can still be influenced by agile, credible U.S. and allied policies. All indications, however, are that the PLA Navy is on track to be capable of executing some of its assigned missions well ahead of Xi's midcentury transformational goal— allowing it to demonstrate progress toward claiming world-class status.

THE PLA'S LONG MARCH
TOWARD A WORLD-CLASS MILITARY

PROGRESS, OBSTACLES, AND AMBITIONS

Edited by Benjamin Frohman and Jeremy Rausch

THE PLA'S LONG MARCH TOWARD A WORLD-CLASS MILITARY

Progress, Obstacles, and Ambitions

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With contributions from

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THE NATIONAL BUREAU *of* ASIAN RESEARCH

Cover design and illustration by Nate Christenson.

Contents

China's Sweeping Ambitions for Building World-Class Military Power

Benjamin Frohman and Jeremy Rausch

The 2024 People's Liberation Army (PLA) Conference, cohosted by the National Bureau of Asian Research (NBR), the China Strategic Focus Group at U.S. Indo-Pacific Command, and the National Security Data and Policy Institute at the University of Virginia, examined the implications of the goal of the Chinese Communist Party (CCP) to build a "world-class" military and assessed the progress of the People's Liberation Army (PLA) toward achieving this goal. Key questions the conference sought to address included the following:

- What is the CCP's vision for the PLA as a world-class military, and how does it intend to use this force to attain other national goals?

- How does the CCP assess the PLA's progress toward achieving world-class status, and how do corruption and talent concerns within the PLA affect this judgment?

- What role do artificial intelligence (AI) and other advanced technologies play in the PLA's efforts to gain advantage in a new revolution in military affairs, and how well is the People's Republic of China (PRC) fusing its economic and national defense systems to field these technologies to the PLA?

- How do the modernization and rapid expansion of the PLA's nuclear force support the CCP's goal of building a world-class military?

- Which PLA capabilities are already world-class, which are furthest from attaining this status, and what steps is the PLA taking to build world-class capabilities in the maritime, air, and ground domains?

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- Regardless of whether the PLA's capabilities are uniformly world-class, are they already sufficient for carrying out its key missions such as blockading or invading Taiwan, seizing maritime features in the South and East China Seas, and occupying territory along the Sino-Indian border?

Key findings from the conference include the following:

- The CCP's determination to build the PLA into a world-class military force by the middle of the 21st century is intended not only to match the U.S. armed forces in terms of combat capabilities but also to enhance other tools of national power and support Beijing's goal to catch up to and eventually surpass the United States as the world's most powerful and influential nation.

- Twenty-five years out from midcentury, the PLA already boasts world-class capabilities in numerous warfighting domains, suggesting it may reach important milestones for building world-class combat power before it fully achieves other components of its world-class goal. Capabilities where the PLA is already world-class include its large surface combatants; conventional ground-based missile force, including hypersonics; cyber, space, and information warfare; surface-to-air and air-to-air missiles; and amphibious assault and high-altitude operations.

- The rapid modernization and expansion of the PLA's nuclear arsenal in recent years suggests that world-class nuclear capabilities are essential to the CCP's goal of building the PLA into a world-class military. Chinese leaders view nuclear capabilities as necessary for "counterbalancing and controlling" the United States, including deterring it from intervening in regional conflicts.

- Under the guidance of its military-civil fusion strategy, the CCP is leveraging its economic and technological advancements, including in AI, to support the PLA's development of world-class capabilities. The PRC's substantial industrial capacity in global navigation technology, autonomous systems, shipbuilding, biotechnology, and advanced manufacturing carries particularly consequential dual-use implications.

- Despite the PLA's remarkable progress toward building world-class capabilities, it is not yet world-class by its own standards. Shortfalls in some important weapons systems, deeply entrenched corruption in the PLA and its defense industries, a lack of recent combat experience, and enduring shortcomings in personnel quality negatively affect CCP leaders' confidence in the PLA's warfighting capabilities and readiness to militarily confront the United States.

- Should the PLA achieve world-class capabilities by its own standards, particularly related to building world-class combat power, deterring Beijing from employing military force to coerce or even attack its neighbors could become nearly impossible.

As Beijing continues escalating its use of military coercion across the Indo-Pacific and leverages its massive industrial capacity to support military actions by Russia and Iran, the implications of the growth of the PRC's military power are becoming only more concerning. By 2027, CCP General Secretary Xi Jinping, who also serves as chairman of the Central Military Commission, has instructed the PLA to be capable of invading Taiwan.[1] In July 2024, NATO labeled the PRC a "decisive enabler" of Russia's invasion of Ukraine due to its large-scale provision of dual-use components and materiel to Moscow's war effort.[2] Likewise, critical chemical precursors and technological support that Beijing provides to Iran's ballistic missile program helped Tehran develop the highly accurate missiles it used to attack Israel and U.S. military assets in the Middle East in 2025. Taken together, Beijing's intention to use its development of world-class military capabilities to revise the territorial status quo in the Indo-Pacific and support its authoritarian partners in pursuing their own aggressive aims illustrates the PRC's growing military threat to the United States and its allies and partners.

Amid these international tensions, it is essential to assess the PLA's progress toward achieving its world-class military goal, the role that technological advancements play in the growth of PRC military power, and the CCP's ambitions for using a world-class PLA to achieve its territorial aims, including when it might feel confident risking a military confrontation that could involve the United States. This PLA Conference volume provides in-depth analysis of the CCP's intentions for wielding the power and influence of a world-class military both in the Indo-Pacific region and globally, the PLA's development and fielding of world-class military technologies, and the PLA's progress and continuing shortfalls in developing world-class capabilities in key warfighting domains.

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[1] Michael Martina and David Brunnstrom, "CIA Chief Warns against Underestimating Xi's Ambitions toward Taiwan," Reuters, February 2, 2023, https://www.reuters.com/world/cia-chief-says-chinas-xi-little-sobered-by-ukraine-war-2023-02-02/

[2] Amy Hawkins, "China a 'Decisive Enabler' of Russia's War in Ukraine, Says Nato," *Guardian*, July 11, 2024, https://www.theguardian.com/world/article/2024/jul/11/nato-summit-russia-ukraine-war-china-enabler.

A World-Class Military for a New World Order

The CCP's goal to build the PLA into a world-class fighting force is inseparably linked to its far more sweeping ambitions to create a new world order with Beijing at its center. When General Secretary Xi Jinping announced his intention to build a world-class military by midcentury at the 19th Party Congress in 2017, he did not describe this goal in isolation from the party's other priorities. Beyond building a world-class military, Xi called on the PRC to also develop world-class enterprises, universities, and academic disciplines. In this "new era," military power would be one of many tools the PRC would wield as it strode toward the world's "center stage" and built a "community of common human destiny" backed by its growing global power and influence over world affairs.[3]

For the CCP, a world-class military is therefore an essential tool for exercising its power in a new world order more closely aligned with Beijing's interests and values. As Evan McKinney notes in his chapter in this volume, building such a force requires "far more than simply world-class combat capabilities." Rather, it requires the PLA to help break the United States' "values hegemony" and allow Beijing to set the standards for international military cooperation, redefine norms concerning the use of military force, and "shape international public opinion regarding international military issues." The PRC's latest defense white paper, published in 2019, reinforces this notion, declaring that a core function of the PLA is to "actively participate in the reform of the global security governance system."[4] In recent years, Beijing has announced a series of initiatives to realize this vision. Among these is the Global Security Initiative, announced in 2022, which aims to establish PRC-led security dialogues and other initiatives as the premier venues for resolving global security issues and guiding international cooperation in areas such as counterterrorism, cybersecurity, biosecurity, and policing.[5]

Still, world-class combat power remains central to the PLA's modernization goals. Moreover, the PLA may attain it long before it

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[3] The full text of Xi's speech is available at https://www.andrewerickson.com/2017/10/full-text-of-xi-jinpings-19th-national-party-congress-work-report-related-documents.

[4] State Council Information Office (PRC), *China's National Defense in the New Era* (Beijing, July 2019), available at https://www.airuniversity.af.edu/Portals/10/CASI/documents/Translations/2019-07%20 PRC%20White%20Paper%20on%20National%20Defense%20in%20the%20New%20Era.pdf?ver=a kpbGkO5ogbDPPbflQkb5A%3d%3d.

[5] Erik Green et al., "The Global Security Initiative: China's International Policing Activities," International Institute for Strategic Studies, October 24, 2024, https://www.iiss.org/research-paper/2024/10/the-global-security-initiative-chinas-international-policing-activities.

develops the other, more global features the CCP views as befitting a world-class military power. As a tool for accomplishing the "great rejuvenation of the Chinese nation," a world-class PLA will serve an indispensable role in backstopping the CCP's stated intent to annex territory around its periphery from Japan and Taiwan to Southeast Asia and India. Building the capabilities to militarily subjugate Taiwan will likely prove the most challenging set of requirements driving the PLA's development of world-class combat power. General Secretary Xi's directive to the PLA to be capable of invading Taiwan by 2027, to which some sources add building the capabilities to "counter the U.S. military in the Indo-Pacific region," suggests the PLA might intend to attain important world-class combat capabilities long before midcentury.[6] Similarly, routine operations and training to seize maritime features from Japan, the Philippines, and Vietnam, combined with its large-scale buildup of power-projection capabilities along the Sino-Indian border, imply that the PLA might believe it already possesses the requisite combat capabilities to execute these missions, at least absent U.S. military intervention.

To be sure, the PLA already possesses world-class capabilities in numerous warfighting domains. The PLA Navy boasts large surface combatants such as the Renhai cruiser and Luyang III destroyer, which feature 112- and 64-cell vertical launch systems, respectively. These systems are capable of launching cruise, surface-to-air, and antisubmarine missiles, as well as potentially land-attack and anti-ship ballistic missiles when naval variants of those systems become operational.[7] For its part, the PLA Air Force has developed world-class surface-to-air missile forces and beyond-visual-range air-to-air missiles, while the PLA Rocket Force has devoted decades to fielding what is now the world's largest arsenal of ground-based conventional missiles, including what the U.S. Department of Defense terms "the world's leading hypersonic arsenal."[8] The PLA has also devoted enormous resources to developing capabilities that offset traditional U.S. advantages, such as by building world-class capabilities in cyber, space, and electronic warfare. As Joshua Arostegui and Jake Vartanian argue in their chapter in this volume, the PLA also possesses world-class capabilities in key areas required for an

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[6] U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China 2024* (Washington, D.C., December 2024), https://media.defense.gov/2024/Dec/18/2003615520/-1/-1/0/MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA-2024.PDF.

[7] Ibid.

[8] U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China 2023* (Washington, D.C., October 2023), https://media.defense.gov/2023/Oct/19/2003323409/-1/-1/1/2023-MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA.PDF.

invasion of Taiwan, such as amphibious assault vehicles, as well as for high-altitude operations against India, such as light tanks and truck-mounted howitzers. Lastly, Beijing is engaged in an unprecedented modernization and expansion of its nuclear forces which, according to Gerald Brown, aims to support the PRC's territorial and other goals by "counterbalancing and controlling" the United States.

Despite the PLA's remarkable progress in these areas, however, it is clear that the PRC's top civilian and military leaders do not yet judge their military to be fully world-class. Central to this assessment is their perception that the PLA remains inferior to the armed forces of the United States, which emerge from PRC sources as the exemplar of what a world-class military should be.[9] This view was encapsulated in Beijing's 2019 defense white paper, which assessed that the PLA "still lags far behind the world's leading militaries" and is even "confronted by risks from a growing technological generation gap."[10] The PLA's judgment of its comparative inferiority appears to grow particularly acute relative to the United States, which the document alleges is "engaging in technological and institutional innovation in pursuit of absolute military superiority."[11] Moreover, in addition to shortfalls in hardware and technology like indigenous jet engines, submarine-quieting technology, and air assault capabilities, the PLA suffers from endemic corruption, including in its weapons procurement system, and a lack of recent combat experience that senior leaders refer to as the "peace disease." The force's combat readiness is further weakened by outdated and sometimes irrelevant instruction in its training academies and a host of shortcomings in the quality and competence of its officer and enlisted corps, including what senior leaders refer to as the "five incapables."[12] In the view of James Char, for these reasons "it will be a while yet before the PRC feels confident or competent enough to call into question the United States' status as the incumbent world-class military power."

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9 U.S.-China Economic and Security Review Commission, "2019 Report to Congress of the U.S.-China Economic and Security Review Commission," November 2019, chap. 4, https://www.uscc.gov/sites/default/files/2019-11/Chapter%204%20Section%201%20-%20Beijing%E2%80%99s%20%E2%80%9CWorld-Class%E2%80%9D%20Military%20Goal.pdf.

10 State Council Information Office (PRC), *China's National Defense in the New Era*.

11 Ibid.

12 These refer to "the inability of too many PLA officers to effectively judge the military situation, understand their orders, make operational decisions, direct troops in combat, and handle unforeseen battlefield developments." U.S.-China Economic and Security Review Commission, "2019 Report to Congress of the U.S.-China Economic and Security Review Commission," chap. 2, https://www.uscc.gov/sites/default/files/2019-11/Chapter%202%20-%20Beijing%27s%20Internal%20and%20External%20Challenges.pdf

The PLA's unremitting efforts to overcome its weaknesses in pursuit of regional dominance and global influence make it essential to better understand the implications of its ambition to become a world-class military power. To this end, this volume takes stock of three key questions. First, what do Chinese leaders mean when they call on the PLA to become a world-class military, and is the interpretation of this requirement uniform across the PLA? Second, how do Chinese leaders assess the PLA's progress toward building world-class capabilities? And finally, what are the most significant challenges the PLA faces in achieving world-class status ? To answer these questions, NBR identified nine leading specialists from academia, think tanks, and government in the United States, Asia, and Europe, whose contributions to this volume will shape analysis on the PLA's trajectory for years to come.

What Is World-Class? The PLA, Its People, and Its Problems

The opening section of this volume examines the CCP's expectations for PLA modernization and benchmarks for achieving its world-class military goal. It also inquires as to how Chinese leaders assess the PLA's progress in tackling long-standing challenges in the areas of corruption, loyalty, and personnel quality as evidenced in countless corruption cases against senior PLA officers and defense industry officials and in slogans such as the "five incapables" and "two incompatibles."

In the volume's first chapter, Evan McKinney argues that Xi Jinping aspires to wield a world-class PLA on the global stage as an increasingly active tool of national power commensurate with the PRC's status as a global leader. Although McKinney acknowledges that the precise characteristics of a world-class military are not always clearly defined, he argues that it will play a significant role in Beijing's exercise of both hard and soft power. Through a comprehensive analysis of primary source literature, he points out that Beijing's intent to build a world-class military should not be misconstrued solely as a capability goal. Instead, this aspiration encompasses a broad range of military and nonmilitary tasks that the PLA will need to support as one of many tools of national power as the PRC more actively exerts its influence both regionally and globally. McKinney also refers to the PLA's supporting role for the PRC's development of "discourse power" where it will help enable Beijing's efforts to dominate the information environment and shape global norms and discourse.

In the second chapter, James Char studies the endemic nature of corruption in China's military and defense industries and its impact on Xi's confidence in the PLA. Char attributes many of Xi's removals of top military officials to political objectives such as eliminating political rivals, discouraging internal dissent, and consolidating authority over the PLA. By mapping the number of PLA officers and other security officials caught in Xi's purges, Char uncovers a disproportionate number of officials working on political, logistical, and weapons procurement issues who have been the most significantly impacted by the sweeping campaigns. While the implications of Xi's anticorruption campaigns for his confidence in the PLA's warfighting capabilities are uncertain, Char concludes that Xi appears to be willing to trade "short-term instability" in the force for "long-term prowess."

The third chapter examines the PLA's attempts to improve the overall personnel quality and in particular the political loyalty and technical acumen of its officers and soldiers. Eric Hundman identifies numerous strategies initiated by the PLA to simultaneously reinforce political loyalty to the CCP and enhance military professionalism, including by doubling down on a commitment to political work and offering more educational and training opportunities. As a result, PLA academic institutions have intensified their ideological coursework while aiming to improve the living and medical conditions for military families. Nevertheless, the PLA continues to face challenges in successfully implementing some of these initiatives. For instance, efforts to standardize assessment programs for promotion have been met with some backlash from within its ranks, and training programs for officers to learn how to use new technologies are inadequate. Hundman concludes by cautioning against overestimating China's military effectiveness on the battlefield without considering the limitations the PLA faces in its officers' professionalism amid enduring concerns about political loyalty.

Strategic Technologies in a World-Class PLA

The second section of this volume assesses the PLA's development of world-class military technologies and its integration of these technologies into its doctrine and fielded capabilities. Against the backdrop of a new revolution in military affairs, the chapters in this section examine topics ranging from AI's role in next-generation combat systems and decision-making to the PRC's military-civil fusion (MCF) national development strategy. They also examine how frontier technologies are reshaping nuclear

deterrence dynamics as the PLA rapidly modernizes and expands its nuclear arsenal.

In the fourth chapter of the volume, Meia Nouwens challenges previous thinking on PLA assessments of AI to craft a new framework for understanding the PLA's intentions to integrate the technology into its weapons and command systems. AI-enabled technologies enhance speed and accuracy, which are vital for command and control. They also serve a dual-use function, allowing the PLA to co-opt civilian AI-enabled decision-making applications for military use to train PLA forces and collate battlefield data for an eventual "command brain." To inform her analysis, Nouwens tracks the number of AI-related contracts per PLA service branch and the number of PLA service branch contracts according to types of AI application. Drawing on these findings, she suggests that PLA analysts closely observe developments in these technologies to determine their potential military uses. She also finds that the warfighting applications of AI-enabled technologies increase the risk of miscalculation during conflict due to an overreliance on automated decisions, necessitating closer scrutiny of these technologies.

The next chapter examines the evolution of China's military-civil fusion strategy and its subordination under the broader concept of the national strategic system and capabilities (NSSC). Liza Tobin, Addis Goldman, and Katherine Kurata investigate the increasingly central role of MCF in supporting the PLA's growth into a world-class military. The authors scrutinize the mobilization of civilian state resources under the NSSC to advance the MCF concept, arguing that it is essential for the United States to clearly discern the motivations driving the PRC to leverage the industrial capacity and technological advancements of its ostensibly civilian economy for military purposes. The PRC's openly articulated objective to transfer civilian resources to the PLA erases the distinction between technological breakthroughs for civilian use and those for military applications and presents the United States with particularly acute risk in the areas of global navigation technology, autonomous systems, shipbuilding, and biotechnology, and among others.

In the volume's sixth chapter, Gerald Brown assesses the role of the PLA's nuclear forces in attaining its world-class military goal. China's nuclear arsenal has grown exponentially in recent years to over six hundred nuclear warheads and is now on track to reach a force of approximately one thousand nuclear-capable weapons by 2030. In addition, the PLA is incorporating new technologies like low-yield nuclear weapons, hypersonic glide vehicles, and fractional orbital bombardment systems to further strengthen and

modernize its nuclear deterrent. Brown conducts an extensive review of Chinese-language sources to identify the primary drivers and goals of the PLA's nuclear modernization efforts. According to his findings, the PRC is increasingly concerned that the United States might turn to nuclear weapons to compensate for its conventional weakness in the Indo-Pacific theater and has concluded that it must bolster its own nuclear capabilities in response. Perhaps more importantly, the PRC aims to use its growing nuclear capabilities as a strategic counterbalance against the United States in the context of intensifying strategic competition, evidenced in part by Xi's promotion of the PLA Rocket Force to a full military service in 2016. Brown argues that as the PRC accelerates its nuclear modernization program, the United States might have fewer nuclear options of its own and could be constrained more broadly in intervening in a conflict over Taiwan.

Assessing World-Class Capabilities in Key Warfighting Domains

The final section of this volume uses a domain-based approach to identify where the PLA already possesses world-class capabilities, the challenges the PLA faces in becoming fully world-class, and steps the PLA is taking to address remaining capability shortfalls. Focusing on the PLA Army, Navy, Air Force, and conventional rocket forces, this section's authors delve deeper into how each service is contributing to Xi Jinping's vision to achieve world-class capabilities in key warfighting domains.

In the volume's seventh chapter, Joshua Arostegui and Jake Vartanian measure the PRC's progress in achieving a world-class military by pinpointing recent technological, educational, and organizational developments in the PLA ground forces. They highlight the U.S. military's joint all-domain operation capability as a motivator for the PLA Army to match the U.S. Army in key areas while gaining advantages in other domains to make up for capabilities where it still trails the United States. The PLA Army has acquired modern land-domain systems that allow for greater maneuverability in complex terrain, advanced jamming systems to support land and air operations, and long-range rocket launchers to support the PLA Navy at sea. Some of these systems, according to Arostegui and Vartanian, can already be considered world-class. Further, the PLA Army is prioritizing training for its senior leaders to operationalize its new weapons systems and rotating forces to high-threat areas such as the Sino-Indian border to diversify operational experience.

In the next chapter, Christopher Sharman and Andrew Erickson examine the PLA Navy's midcentury modernization ambitions. China already boasts the world's largest navy by number of ships and submarines, the world's largest shipyard infrastructure, and the world's most productive shipbuilding industry. Nevertheless, Sharman and Erickson argue that neither Xi nor PLA Navy leaders yet believe their naval forces to be world-class. Through analyzing numerous internal speeches and documents from PLA Navy sources, they identify the service's sweeping ambitions for building itself into a globally deployable force that is "more powerful than the world's most powerful navy"—the U.S. Navy. As part of this objective, the PLA Navy seeks to be capable not only of fighting and winning maritime conflicts in the Indo-Pacific but also of projecting power to "win local regional wars" outside the Indo-Pacific and influence international maritime governance. Similar to the PLA Army's modernization metrics, the PLA Navy uses the U.S. Navy as its primary benchmark for measuring its progress toward achieving world-class status.

The volume's ninth and final chapter analyzes the world-class modernization programs of the PLA Air Force and PLA Rocket Force's conventional missile forces. Cristina Garafola and Elliot Ji begin by identifying milestones required for the PLA Air Force and PLA Rocket Force to achieve world-class status. They then outline four unique criteria to assess progress toward that goal that are applicable to both services: military theory, organizational structure, service personnel, and weapons and equipment. The chapter concludes that both the PLA Air Force and the PLA Rocket Force have transformed their hardware in recent decades but face continued challenges in resolving certain issues related to hardware and technology, corruption, and personnel quality. Still, Garafola and Ji emphasize a number of key capabilities fielded by both services that they judge to already be world-class and assess that both the Air Force and Rocket Force will be instrumental in driving the PLA's transformation into a world-class military in the coming years.

Conclusion

The nine chapters in this volume from NBR's 2024 PLA Conference explore the PLA's efforts to answer General Secretary Xi Jinping's call to build a world-class military by midcentury. The first three chapters identify the ambitious vision behind this directive as well as some of the key challenges, such as corruption and personnel issues, the PLA will face in achieving

it in the near term. The next three chapters identify critical technologies and policies the PLA is leveraging to modernize its arsenal, including AI, military-civil fusion, and cutting-edge nuclear weapons technology. The final three chapters examine the PLA's remarkable progress as well as areas of continued shortfalls in achieving the goals of the PLA ground forces, Navy, Air Force, and Rocket Force to become fully world-class military services.

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The PLA's Long March toward a World-Class Military: Progress, Ambitions, and Obstacles features papers from the 2024 People's Liberation Army Conference convened by the National Bureau of Asian Research, U.S. Indo-Pacific Command's China Strategic Focus Group, and the National Security Data and Policy Institute at the University of Virginia. The volume examines Xi Jinping's requirement for the PLA to achieve "world-class" status by midcentury and the role it will play in supporting the Chinese Communist Party's pursuit of national rejuvenation. The distinguished contributors to this volume assess the progress the PLA has made in key domains toward achieving world-class status, the party's ambitions for the PLA once it achieves this goal, and the obstacles that are hindering the PLA's progress.

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