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Maritime Interests

Power vs. Distance: China's Global Maritime Interests and Investments in the Far Seas

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EXECUTIVE SUMMARY

This chapter argues that China's maritime power projection will occur along a continuum of national interests and capabilities that diminish dramatically with distance and could be subject to slowing, setbacks, or even outright reversal.

MAIN ARGUMENT

Under Xi Jinping's ambitious emphasis on national rejuvenation, China is growing in all dimensions of national power, acquiring increasingly far-flung interests overseas. It is facing mounting domestic and international pressure to address them with unprecedented capabilities, particularly with its rapidly developing navy, and is allocating increasing resources with which to do so. Yet approaching and sustaining the remarkable U.S. constellation of global support capabilities that allow the U.S. to engage in combat operations against another major military worldwide seems unrealistic for China—even looking out over decades—given both the uniquely favorable opportunities that the U.S. has enjoyed and China's geographic liabilities. Moreover, in its fourth decade of sustained growth in national power, China faces increasing headwinds that will likely slow its future progress overseas, as well as internal risks that may even draw it inward. Even if China becomes convulsed by internal problems, its very disarray could subject its immediate neighbors lacking significant sea buffers to tremendous challenges.

POLICY IMPLICATIONS

- To counter China's expanding maritime presence, the U.S. should carefully cultivate its global network of alliances and partnerships, which is a unique strength offering unparalleled influence, access, and power projection.
- Particularly for worst-case scenarios, U.S. decision-makers must consider how to leverage China's strong power-distance gradient to shape its behavior across a full spectrum of contingencies.
- U.S. planners must address enduring technological imbalances and invest accordingly in capabilities to counter China's military counterintervention approaches while targeting its vulnerabilities.

Power vs. Distance: China's Global Maritime Interests and Investments in the Far Seas

Andrew S. Erickson

One of the great transformations of the 21st century is the increasingly global activities of the People's Republic of China (PRC), particularly at sea. Beijing's domestic exigencies, growing overseas interests, and increasing capability to advance and defend those interests are combining to produce unprecedented ambitions that in turn are driving resource allocations and efforts. Already China has achieved a status and confidence unseen in nearly two centuries and a presence never before seen in geographic scope and sophistication. It is going, literally and figuratively, where elements of Chinese state power have not gone before. The People's Liberation Army (PLA) naval force that underwrites these historic breakthroughs is increasingly able to project power in new and influential ways. Indeed, the extent to which China can project power sustainably over growing distances to further its burgeoning interests is one of the key questions of 21st-century geopolitics. It has major consequences for China's role and footprint in the world, as well as for the interests of the United States and its allies. In coming years, Beijing may well make considerably great strides in the global arena and be able to deploy a force with truly global influence and reach. But it could also

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face significant challenges in doing so, and might even have to shift its focus inward to address challenges closer to home.

This chapter examines potential future PLA Navy (PLAN) activities, basing, and other Chinese investments in the maritime realm that could extend far beyond East Asia, and even the Indian Ocean and East African littoral. The first section explains how China's national priorities and interests are radiating outward, but that projecting power to defend them grows increasingly difficult with distance. The next section surveys China's maritime strategy, doctrine, and missions in the Indo-Pacific and beyond. The third section outlines progressive benchmarks for Chinese naval power projection, what is required to reach them, and what China can achieve when it does so. The penultimate section considers three possible alternative futures for Chinese naval power projection. The conclusion suggests implications for the region and the United States.

Going Global: Priorities, the Power-Distance Gradient, and Proliferating Drivers

This section describes Beijing's grand strategy and outlines factors affecting the execution of that strategy. Xi Jinping has articulated, and is working to bring to fruition, a comprehensive "China dream" of "national rejuvenation" to achieve global power and influence on a par with the United States by 2049. He calls for completing China's defense modernization to meet related goals in 2020, 2035, and 2050. This fits with growing assumptions that within 10 to 25 years the global order will witness a "return to bipolarity," this time between the United States and China.

This ambitious effort draws on tremendous advantages and resources, but its outcome will be shaped by the following Chinese characteristics and challenges. First, Xi's China is politically centralized but potentially brittle. Beijing can rally tremendous resources to rapidly further top national goals such as sea-power development, but this is contingent on concerted guidance and prioritization. Such impressive focus may dissipate quickly if some of China's many potential sources of instability rise to the fore.

Second, geography matters, and cannot be fully re-engineered. Within the bounds of the possible, China has indeed made impressive efforts to alter geography in its favor. Its South China Sea "island" construction and fortification, as well as its integrating Eurasia more deeply through Belt and Road Initiative (BRI) investment and infrastructure, represent the maximum of what can be done to recast geography. But even under the most favorable domestic and overseas development scenarios, China simply cannot make its geographic situation as advantageous as that of the United States, a natural

maritime power with the most favorably situated homeland of any great power. As a hybrid land-sea power that operates on both interior and exterior lines, China faces both opportunities and unavoidable challenges, as well as tremendous opportunity costs.

Third, based on the two abovementioned factors, PRC foreign policy and defense strategy have long centered on the principal goal of regime survival via continued economic development, maintenance of a peaceful regional and international security environment, territorial integrity and sovereignty, and prestige. China's traditional military policy has focused on a strict hierarchy of security interests that attenuate rapidly with distance from China's shores. Throughout its history, regime continuity has come first, followed by domestic legitimacy and stability in core Han-dominated areas. In different periods, homeland defense has included more broadly various assortments of Han-minority or -plurality borderlands and national borders. Since the end of the Cold War, success in the aforementioned areas has enabled an additional layer of focus: Taiwan and other unresolved island and maritime claims in the "near seas" (the Yellow, East China, and South China Seas). Meeting the aforementioned goals has fostered a relatively narrow foreign policy agenda, which permitted China to maintain a low profile internationally and focus on domestic development. Now China is beginning to operate in new areas beyond the near seas in unprecedented ways. Its history offers no forecast for its future outward progress but could nevertheless be instructive if setbacks redirect its focus inward.

The radiating ranges of China's weapons systems and their delivery platforms overlap strikingly with this geography of national security priorities. Like the operating areas, sensor range coverage, and potential kinetic reach of China's weapons, the intensity of national security priorities and future military and geostrategic prospects diminish progressively with distance. Rather than operate freely on exterior lines like geographically advantaged sea powers such as the United States, the United Kingdom, and Japan, China must radiate maritime power from interior lines in a way that currently prioritizes the assertion of increasing control over its disputed sovereignty claims in the near seas while seeking growing influence across the Indo-Pacific and nascent global access and presence.

Increasingly, however, Beijing also faces numerous diverse challenges and threats to its interests as a result of its growing overseas presence, resource reliance, and the need for logistical and resupply points. Today, in the maritime dimension and beyond, China's hierarchy of national security priorities is best mapped as radiating geographic layers of progressively diminishing focus and capability from the near seas to the far seas and far oceans. Xi has further emphasized the opportunity and possibilities for

force multiplication in "new strategic frontiers" (*zhanlüe xin jiangyu*)—the *res nullius* areas of the poles, deep seabed, and outer space,[1] which "are the new strategic territories where China will draw the resources to become a global power."[2] As the authoritative doctrinal text *The Science of Military Strategy* (2013) explains, in an era in which China's national interests have "surpassed the traditional [territorial land], territorial sea, and territorial airspace scope to continuously expand toward the periphery and the world, continuously extending towards the ocean, space, and electromagnetic space," and in which "the main war threat has switched from the traditional inland direction towards the ocean direction," the PLA "must expand its military strategic view and provide strong and powerful strategic support within a greater spatial scope to maintain national interests."[3] A key variable is the extent to which China can progress along this geographic continuum, and by when.

Beyond the abovementioned drivers, additional factors are pushing China in a global direction. Its overseas citizens, businesses, assets, and investments are proliferating, particularly in unstable areas. Resource access abroad is essential to fueling the Chinese economy, which remains energy-intensive and manufacturing-focused. China is already the world's second-largest oil consumer, and by 2035 is projected to import 80% of its oil and 46% of its natural gas.[4] The majority will come by sea, given that no feasible level of overland pipeline construction can alleviate this dependency. These factors may force Beijing to become involved in complex regional issues that it previously could avoid as a free rider on U.S. security provision.

Incremental and stopgap measures have only worked so far. These include new types of overseas operations such as noncombatant evacuation operations from Libya and Yemen, UN peacekeeping operations, over 30 antipiracy patrols to protect sea lines of communication (SLOCs), hospital ship activities, humanitarian assistance and disaster relief, and more than

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[1] Cyber is also sometimes included in this concept of *res nullius* but is beyond the scope of this chapter. See "Guofang keda juban yantao hui jujiao taikong wangluo deng zhanlüe xinjiang yu" [The National Defense University of Science and Technology Held a Seminar to Focus on Strategic New Domains Such as Space and the Internet], "'Zhanlüe xinjiang yu yu guojia anquan' xueshu yantao hui jujiao taikong wangluo" [Academic Seminar on "New Strategic Domains and National Security" Focuses on Space and the Internet], China Military Network, December 4, 2015, http://www.cac.gov.cn/2015-12/04/m_1117354623.htm.

[2] Anne-Marie Brady, "China's Undeclared Foreign Policy at the Poles," Lowy Institute, Interpreter, May 30, 2017, https://www.lowyinstitute.org/the-interpreter/china-undeclared-foreign-policy-poles.

[3] Academy of Military Sciences of the People's Liberation Army of China, *The Science of Military Strategy* (Beijing, 2013), 105–6.

[4] Gabriel Collins, "China's Evolving Oil Demand," Baker Institute for Public Policy, Working Paper, 2016, http://www.bakerinstitute.org/research/chinas-evolving-oil-demand; and U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2018* (Washington, D.C., 2018), 54.

75 multinational security patrols on the Mekong River. Over time, however, China seeks to increase influence, deterrence, and actual combat capabilities beyond its borders as well. Recent years have witnessed a positive feedback loop: Beijing has burgeoning interests and the ability to address them. Citizens' expectations of their government's ability to uphold the national interests and status it trumpets in patriotic messaging are rising apace. In pursuing these imperatives, Chinese people, assets, and forces overseas encounter new challenges and opposition. Increasing resources and confidence propel the cycle onward and outward, with no major setbacks thus far.

Maritime Missions: Projecting Power Across the Indo-Pacific and Beyond

China's global drive has pressured the country to become more involved, reach out to more partners, and develop the ability to project force to protect its interests.[5] This has gradually eroded previous obstacles, including a long-standing, if unevenly applied, noninterference policy, lack of experience, and limited capabilities. China is radiating ripples of capability and activity to promote its expanding overseas interests. Its grand strategy encompasses diplomatic, economic, and military means in service of safeguarding such interests as energy supply security. In parallel, Chinese naval doctrine encompasses progressively less intense arcs of control, influence, and reach.[6] Xi's efforts to develop and operationalize China's naval doctrine represent the latest stage in a longer-term plan by further pursuing the four "new historic missions" (*xin de lishi shiming*) articulated by Hu Jintao in 2004 and adding as a fifth mission the realization of his own centenary goals.[7] These objectives

[5] This section draws on Andrew S. Erickson, "Doctrinal Sea Change, Making Real Waves: Examining the Naval Dimension of Strategy," in *China's Evolving Military Strategy*, ed. Joe McReynolds (Washington, D.C.: Jamestown Foundation, 2016), 102–40.

[6] Peter A. Dutton, "Three Disputes and Three Objectives: China and the South China Sea," *Naval War College Review* 64, no. 4 (2011): 42–67.

[7] At an expanded Central Military Commission conference in December 2004, Hu introduced new military policy that defined four "new historic missions" for the PLA: first, to serve as an "important source of strength" for the Chinese Communist Party to "consolidate its ruling position"; second, to "provide a solid security guarantee for sustaining the important period of strategic opportunity for national development"; third, to "provide a strong strategic support for safeguarding national interests"; and fourth, to "play an important role in maintaining world peace and promoting common development." The latter two missions were unprecedented. "Earnestly Step Up Ability Building within CPC Organizations of Armed Forces," *Liberation Army Daily*, December 13, 2004; and "Sange tigong, yige fahui" [Three Provides and One Bring into Play], Sina, September 29, 2005, http://news.sina.com.cn/c/2005-09-29/08517064683s.shtml. The fifth mission was enshrined in China's latest defense white paper as "strive to provide a strong guarantee for completing the building of a moderately prosperous society in all respects and achieving the great rejuvenation of the Chinese nation." Information Office of the State Council of the People's Republic of China (PRC), *China's Military Strategy* (Beijing, May 2015), http://www.xinhuanet.com/english/china/2015-05/26/c_134271001_2.htm.

helped justify China's subsequent Gulf of Aden and Mekong interventions.[8] Also in 2004, China's Ministry of Foreign Affairs adopted the guideline of "diplomacy serving the people," making protecting PRC citizens abroad a national priority.[9] The unprecedentedly robust maritime content in the 13th Five-Year Plan (2016–20) passed by the National People's Congress and released on March 17, 2016, declares that China will, among other things, build itself into a "maritime power," create a highly effective system for protecting overseas interests and safeguarding the legitimate overseas rights and interests of Chinese citizens and legal persons, and actively promote the construction of strategic strong points (*zhanlüe zhidian*) for the 21st Century Maritime Silk Road.[10]

Indo-Pacific Focus

Moving forward, Chinese naval strategists envision a very significant further radiating outward of China's maritime interests, capabilities, and forces. This relates to a formulation appearing increasingly in Chinese sources: "using the land to control the sea, and using the seas to control the oceans" (*yi lu zhi hai, yi hai zhi yang*).[11] Building on a general call for the protection of strategic capabilities radiating across coasts, seas, and oceans from China's continental core, the concept of "forward edge defense" articulated in *The Science of Military Strategy* has clear maritime implications, calling specifically for the establishment of a Chinese "arc-shaped strategic zone that covers the western Pacific Ocean and northern Indian Ocean."[12] Termed the "two oceans region/area" (*liang yang diqu*),[13] it is described as "mainly" including "the Pacific Ocean, Indian Ocean, as well as the littoral regions of neighboring Asia, Africa, Oceania, North America, South America, and Antarctica, etc., with a total area spanning over 50% of the globe; within which the

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[8] Andrew S. Erickson and Austin M. Strange, "Ripples of Change in Chinese Foreign Policy? Evidence from Recent Approaches to Nontraditional Waterborne Security," *Asia Policy*, no. 17 (2014): 93–126.

[9] Mathieu Duchâtel, Oliver Bräuner, and Zhou Hang, *Protecting China's Overseas Interests: The Slow Shift Away from Non-interference*, SIPRI Policy Paper, no. 41 (Stockholm: SIPRI, 2014), 58.

[10] Su Xiangdong, ed., "Zhongguo guomin jingji he shehui fazhan di shisange wu nian guihua gangyao (quanwen)" [China's Five-Year Plan for Social and Economic Development (Full Text)], Xinhua, March 17, 2016.

[11] Academy of Military Sciences, *The Science of Military Strategy*, 102, 109.

[12] Ibid., 106.

[13] Most Chinese sources to date, including Xiao Tianliang, ed., *Zhanlüe xue* [The Science of Military Strategy] (Beijing: National Defense University Press, 2015), use the term "far-seas protection" [yuanhai huwei] rather than "two-oceans area." Yet Chinese strategists are clearly most focused on the western Pacific and the northern Indian Ocean, and other concepts rarely reveal geographically specific priorities. "Two oceans" is therefore used here for purposes of geographic clarity.

Two Oceans have a total area of 254.6 million square meters, occupying 71% of the global ocean area."[14]

The Science of Military Strategy deems the two-oceans region extremely important to Chinese security interests. It represents "a crucial area in influencing" China's "strategic development and security in the future" as well as "the intermediate zone of our entrance into the Atlantic Ocean region, Mediterranean Sea region, and Arctic Ocean region." In accordance with the globalizing nature of China's activities, its "national interests will surpass in an extremely large manner the traditional territorial land, territorial sea, and territorial air scope, while the Two Oceans region will become the most important platform and medium." On this basis, Chinese actors "will create conditions to establish ourselves in the Two Oceans region, participate in resource extraction and space utilization of the oceans, and boost development in the two polar regions." To be sure, the authors of this doctrinal publication allow that new challenges and "security threats" of both a traditional and a nontraditional nature should be expected to accompany this sweeping geostrategic expansion, "especially [from] the oceanic direction." These interrelated factors, in turn, offer a rationale for further security development in a manner that is likely to provide a continued rationale for concerted qualitative and quantitative development of the PLAN for years to come:

> Because our at-sea sovereignty and interests have frequently come under intrusions, while intensification in the crises may very possibly ignite conflicts or war, we need to form into a powerful and strong Two Oceans layout in order to face the crises that may possibly erupt. Therefore, we should focus on maintaining expansion in the national interests, defend the at-sea interests, and rely upon the home territory to reasonably and appropriately expand the strategic space toward the Two Oceans region.[15]

Emerging Far-Seas Missions

Accordingly, China is enacting a maritime theater concept that provides a focus for the PLAN extending across the Indo-Pacific and beyond. Relevant missions include the following.

Protecting overseas interests and the rights and interests of Chinese nationals. The massive "going out" abroad of PRC passport holders in recent years to pursue resources and wealth on land and sea creates new interests and vulnerabilities, particularly in the form of growing risks to their life and property. Overseas PLAN rescue missions assumed "a new precedent" with the service's limited role in the 2010 Libya evacuation. *The Science of Military Strategy* holds that "protecting national overseas interests and the rights of

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[14] Academy of Military Sciences, *The Science of Military Strategy*, 247.

[15] Ibid., 246–47.

citizens and expatriates will become a regular strategic mission of the navy." The 2015 defense white paper places unprecedented emphasis on having the PLA "safeguard the security of China's overseas interests" and the PLAN engage in "far seas protection."[16]

Protecting maritime transportation security. This reflects an outer layer of Chinese maritime interests and effort ranging far beyond the near seas. Sea lanes are regarded as "the 'lifeline' of China's economic and social development." Since December 2008, threats from nonstate actors such as pirates have been addressed effectively by the PLAN's continuous Gulf of Aden escort task forces, but the additional concern that "once a maritime crisis or war occurs, China's sea transport lanes could be cut off" is much harder to address. Accordingly, the authors predict, "the navy's future missions in protecting SLOCs and ensuring the safety of maritime transportation will be very arduous."[17]

Protecting the security of international sea space. In fulfilling the goal promulgated in a report from the 18th Chinese Communist Party (CCP) National Congress to "build China into a maritime power," the PLAN is also charged with safeguarding "international sea security" in increasingly numerous and diverse ways under the rubric of "harmonious oceans." This will help China not only ensure its own specific security interests but also further assert itself more generally as "a major power with global influence" that is credited with "fulfilling its international responsibilities."[18] On a related note, the PLAN is charged with multifarious military operations other than war, whose missions must reflect the diversity of the threats they are designed to address. In particular, the authors of *The Science of Military Strategy* close their navy-specific section by stressing that "China should fully use the international platform provided by the multinational far seas escort and joint rescue missions to continuously expand and deepen maritime security cooperation." Doing so "will gradually improve China's voice and influence in international maritime security affairs."[19] This relates to a larger emphasis in the 2015 defense white paper in wording echoing repeated statements by Xi: "The national security issues facing China encompass far more subjects, extend over a greater range, and cover a longer time span that at any time in the country's history." Accordingly, the PLA must embrace a "holistic view of national security" encompassing both traditional and nontraditional security and be prepared for full-spectrum operations, including peacetime probing

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[16] Information Office of the State Council (PRC), *China's Military Strategy*.

[17] Academy of Military Sciences, *The Science of Military Strategy*, 210.

[18] Ibid., 209–12.

[19] Ibid., 215, 217–18.

and pressure, as well as "comprehensively manag[ing] crises" in addition to full-fledged combat readiness.[20]

To support these emerging missions, China is altering its naval force structure and deployment concepts. Carrier battle groups are envisioned to be at the core of the PLAN's future fleet, as "a strategic 'fist' for mobile operations at sea."[21] A progressive radiating of capabilities outward, and particularly southward, from mainland China, together with their consolidation and integration, will be underpinned by "strengthen[ing] construction of large and medium-sized ports and core airports focusing on strategic home ports to fulfill the stationing, mooring, and supply needs of carriers, strategic nuclear submarines, and heavy destroyer-escort formations." These "strategic prepositioning" efforts are clearly underway in the form of Chinese port development in the greater Indian Ocean region, particularly with China's establishment of its first overseas naval support facility in Djibouti.

New Chinese Waves

As China moves farther into the two oceans, even the next layer of ripples—throughout maritime Southeast Asia, across the Indian Ocean, into the Red Sea, and down Africa's east coast—overlaps geographically with the seven imperially sponsored voyages of Admiral Zheng He (conducted in 1405–33) and enduring Chinese interests.[22] The Mongols and later the Ming intervened militarily in places like Java and Sri Lanka. The show of naval force to get Malacca to trade could also be seen today as a form of gunboat diplomacy.[23] "Today's global and regional trading networks and China's gravitational pull on world trade are very much akin to the late Ming," Andrew Wilson notes, which suggests that "maritime China in the twenty-first century will look much more like China in the sixteenth century than China of the recent past.…[T]here is ample historical precedent for China as a major sea power, an innovator in nautical technology, and a significant player in East and Southeast Asia as well as in the Indian Ocean."[24]

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[20] Information Office of the State Council (PRC), *China's Military Strategy*.

[21] Academy of Military Sciences, *The Science of Military Strategy*, 213–15.

[22] Edward L. Dreyer, *Zheng He: China and the Oceans in the Early Ming Dynasty, 1405–1433* (London: Pearson, 2006).

[23] Yuan-kang Wang, *Harmony and War: Confucian Culture and Chinese Power Politics* (New York: Columbia University Press, 2010); Geoffrey Wade, ed., *China and Southeast Asia*, vols. 1–6 (New York: Routledge, 2009); and Geoffrey Wade, "The Zheng He Voyages: A Reassessment," *Journal of the Malaysian Branch of the Royal Asiatic Society* 78, no. 1 (2005): 37–58.

[24] Andrew R. Wilson, "The Maritime Transformation of Ming China," in *China Goes to Sea: Maritime Transformation in Comparative Historical Perspective*, ed. Andrew S. Erickson, Lyle J. Goldstein, and Carnes Lord (Annapolis: Naval Institute Press, 2009), 242.

In the foreign policy, geoeconomic, and geostrategic realms, operationalizing Xi's grand strategy involves making China great again abroad while supporting its internal development. The vision for these ambitions is encapsulated by his signature BRI project, which is focused primarily on infrastructure development to encourage greater regional integration and connectivity in Eurasia. In a sign that the international and domestic pieces of Xi's grand strategy are linked, BRI is arguably at least as much (if not more) about supporting domestic growth and stabilizing border regions as it is about gaining influence in distant places. Nevertheless, the initiative has global economic, political, and security implications. BRI encompasses most of the world, albeit in different layers of prioritization and functionality: (1) a Silk Road Economic Belt from China through Eurasia to Europe, (2) a 21st Century Maritime Silk Road through Southeast Asia and the Indian Ocean to Africa, the Middle East, and beyond; and (3) a "Polar Silk Road."[25]

Poor in people but rich in resources, the polar regions merit particular attention. China seeks to join the United States as the only other nation capable of comprehensive presence, activities, and influence in both the Arctic and Antarctic.[26] In keeping with Xi's grand strategy, China has a timetable for polar development that corresponds to his two centenary rubric. In the Arctic, China seeks maximum access and influence as an outside actor. Primarily a maritime domain, the Arctic will increasingly offer a shortened summer shipping SLOC, helping China reduce reliance on such potential chokepoints as the Malacca Strait. "By 2030," the U.S. National Intelligence Council projects, "it will be possible to transit both the Northern and Northwest Passage for about 110 days per year, with about 45 days easily navigable."[27] Eager to increase access and influence, China is investing heavily across the Arctic. It may already lead Arctic FDI, and its FDI constitutes 5.7% of Iceland's GDP and 11.6% of Greenland's GDP.[28] It is becoming a major partner for smaller, sparsely populated Arctic nations, where its funding, training of host nation officials, and supply of foreign labor could have tremendous impact. With a population of only 56,000, limited infrastructure but tremendous resources, the U.S. Armed Forces' northernmost installation at Thule Air Base, and aspirations for independence, Greenland is particularly

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[25] Joel Wuthnow, *Chinese Perspectives on the Belt and Road Initiative: Strategic Rationales, Risks, and Implications*, China Strategic Perspectives, no. 12 (Washington, D.C.: National Defense University Press, 2017); and Zhang Yunbi and Zhang Yue, "Xi Backs Building of Polar Silk Road," *China Daily*, November 2, 2017, http://www.chinadaily.com.cn/world/cn_eu/2017-11/02/content_34007511.htm.

[26] Russia is a first-rank power in the Arctic but not in the Antarctic.

[27] *Global Trends 2030: Alternative Worlds* (Washington, D.C.: National Intelligence Council, 2012), 68.

[28] Mark E. Rosen and Cara B. Thuringer, "Unconstrained Foreign Direct Investment: An Emerging Challenge to Arctic Security," CNA, November 2017, 33, 54–55, https://www.cna.org/cna_files/pdf/COP-2017-U-015944-1Rev.pdf.

susceptible to Chinese incentives.[29] China's extensive investments in Arctic port infrastructure enhance its influence and could facilitate PLAN access.[30] In 2016, China established its first overseas facility to receive remote-sensing satellite data in Kiruna, Sweden. This "North Pole" ground station is a key component of its global surveillance network.[31] Beijing depicts its burgeoning polar activities selectively and ambiguously, heretofore attracting little notice outside specialized professional communities that interact minimally.

Nevertheless, China's development as a polar great power is now enshrined in the country's first-ever Arctic white paper as a critical maritime component of Xi's grand strategy and will critically shape the emerging new geopolitical order and the way it is governed.[32] Beijing regards the polar regions—Antarctica in particular—as vital domains important for fishing and replete with energy and minerals and as a permissive zone for the expansion of Chinese influence and creation of norms. Unencumbered by national borders in Antarctica, China is rapidly enhancing its presence and has established five base sites. The majority are arrayed synergistically in a pie-wedge-shaped "east Antarctica sector" that "looks remarkably like the triangle-shaped territorial claims of the claimant states in Antarctica."[33] They include the continent's highest point, Dome Argus, which could support flexible aircraft flight paths as well as long-distance communications and surveillance. To end reliance on foreign airports in Antarctica, China is developing its own facility to serve its first polar plane, the Xueying 601.[34] It thus appears to be staking out a position that facilitates science and communications now and greater geopolitical influence over time.

Overseas Power Projection: Power Lags Distance

This section examines the specific benchmarks and implications for Chinese naval power projection to support China's growing interests overseas via the missions discussed in the previous section. Historically, the country

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[29] Rebecca Pincus and Walter A. Berbrick, "Gray Zones in a Blue Arctic: Grappling with China's Growing Influence," War on the Rocks, October 24, 2018, https://warontherocks.com/2018/10/gray-zones-in-a-blue-arctic-grappling-with-chinas-growing-influence.

[30] Thus far, aspirations have lagged reality: some prospective deals have been blocked by national authorities in various Arctic nations, while others have fallen through.

[31] "China's 1st Ground Satellite Receiving Station Overseas Starts Trials," Xinhua, December 15, 2016, http://www.xinhuanet.com/english/2016-12/15/c_135908732.htm.

[32] Information Office of the State Council (PRC), *China's Arctic Policy* (Beijing, January 2018), https://www.chinadailyasia.com/articles/188/159/234/1516941033919.html.

[33] Anne-Marie Brady, *China as a Polar Great Power* (Cambridge: Cambridge University Press, 2017), 159.

[34] "China to Build Its First Antarctic Airport in November," *People's Daily*, October 29, 2018, http://en.people.cn/n3/2018/1029/c90000-9512711.html.

has never enjoyed a sustained overseas presence, yet the specific drivers of change outlined in the first section are already motivating unprecedented extroversion on China's part. Beijing is increasingly seeking to develop a PLA that can deploy not only in China's immediate periphery but also throughout the Indo-Pacific and around the globe.

The PLA's foremost power-projection capabilities belong to the PLA Air Force and PLAN Aviation. Now that the force structure to support near-seas objectives has largely been achieved and China's shipbuilding and aviation industries have demonstrated the capability to consistently produce advanced products in most respects, an effort is underway to gradually increase the numbers of some of the more successful platforms that could be useful for far-seas operations.[35] These include area-air-defense destroyers and frigates, replenishment vessels, and fighter aircraft.

China's future force posture is likely to advance along a predefined path that focuses on the ability to sustain high-intensity combat under increasingly contested and uncertain conditions at ever-greater distances from mainland China. To realize Xi's vision overseas, the PLAN and its sister services must master, successively, what I and others have termed "extended blue water counterintervention, limited expeditionary, and global expeditionary" operations.[36] Accordingly, the PLA must effect a broader transformation from traditional "active defense" to a more comprehensive maneuver warfare based on "integrated system of systems operations," akin to the United States' pursuit of network-centric warfare to support blue water operations.[37] Aircraft carriers are envisioned to "form maritime operations systems" (*xingcheng haishang zuozhan tixi*) to fill strategic space as part of a move toward a joint, integrated, networked concept to support "information systems-based systems operations" (*jiyu xinxi xitong de tixi zuozhan*).[38] While Western strategists would view such developments—to the extent that they

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[35] For an overview of China's burgeoning naval shipbuilding capabilities, see Gabe Collins and Eric Anderson, "Resources for China's State Shipbuilders: Now Including Global Capital Markets," in *Chinese Naval Shipbuilding: An Ambitious and Uncertain Course,* ed. Andrew S. Erickson (Annapolis: Naval Institute Press, 2016).

[36] Ely Ratner et al., "More Willing and Able: Charting China's International Security Activism," Center for a New American Security, May 2015, 37, https://s3.amazonaws.com/files.cnas.org/documents/CNAS_ChinaMoreWillingAndAble_Final.pdf; and Andrew S. Erickson, "China's Strategic Objectives at Sea," in *Asia-Pacific Regional Security Assessment 2017: Key Developments and Trends*, ed. Tim Huxley and William Choong (London: International Institute for Strategic Studies, 2017), 37–50.

[37] Nan Li, "China's Evolving Naval Strategy and Capabilities in the Hu Jintao Era," in *Assessing the People's Liberation Army in the Hu Jintao Era*, ed. Roy Kamphausen, David Lai, and Travis Tanner (Carlisle: U.S. Army War College Press, 2014), 257–300.

[38] See, for example, Lin Dong, "Jiyu xinxi xitong de junshi liliang tixi de fazhan linian" [Development Concepts on Information Systems-Based Military Force Systems], *China Military Science* 1 (2011): 22; and Li Dapeng, Tan Lezu, and Yang Genyuan, "Yujingji zhiyuan xia jianting biandui wangluo hua xietong fan dao yanjiu" [Warship Formation Network-Centric Cooperative Antimissile under Early Warning Aircraft Support], *Modern Defense Technology* 41, no. 1 (2013): 9–14.

prove successful in practice—as simply what the United States and other advanced navies have long pursued, this would represent a difficult, expensive, long-term effort for the PLAN.[39]

Two postures represent the low-end and high-end versions of a regional blue water defensive and offensive navy and accompanying air forces. Extended blue water counterintervention implies the ability to deny access by holding opposing forces at risk up to a distance of over one thousand nautical miles from China's territorial waters and airspace. By contrast, going beyond counterintervention to proactively conduct high-level opposed noncombatant contingency and evacuation operations, as well as possibly some form of maritime interdiction operations, in or above far seas (the western Pacific and the Indian Ocean) would require a limited expeditionary posture with all the aforementioned capabilities. At a minimum, such a force would be capable of distant low-intensity conflict, freedom of navigation operations, carrier operations, and far-seas anti-submarine, anti-surface, and anti-air warfare. The capabilities needed to support air-power operations include aerial refueling, over-water flight, extended-duration maritime patrol and intelligence collection, anti-ship missile strike, and strategic bombing.[40] Given sufficient Chinese prioritization, acquiring these capabilities before 2030 should be feasible.

Developing the capabilities for a global expeditionary or "global blue-water type" posture, as Chinese planners categorize today's U.S. Navy, and corresponding air operations will be far more demanding. Beyond the previously listed capabilities, a blue water expeditionary posture would require some form of limited-intensity global presence and the ability to surge combat-ready forces in or above core strategic far-seas areas (e.g., the Persian Gulf). A full global expeditionary posture, maximal in scope and intensity, would require both this and the robust presence of combat-ready naval or air forces in all major strategic regions of the world. The ability to engage in major combat operations would confer the comprehensive capability to contest for maritime supremacy and engage in distant joint forcible-entry operations and amphibious assault. Moving from denial to control requires a much broader range of capabilities, even for operations within the same geographic area.

At present, the PLA remains incapable of conducting most aspects of far-seas operations against a capable opponent, including force projection, sustainment, capacity, coordination, defense, and opposed intervention.

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[39] For a Chinese study of best-practice examples in the history of U.S. carrier operations, see Zhao Guangzhi and Li Daguang, "Hangmu zhandou qun de bian cheng yu yunyong" [The Formation and Use of Carrier Battle Groups], *Defense Science and Technology Industry* 10 (2012): 20–22.

[40] Phillip C. Saunders and Erik Quam, "Future Force Structure of the Chinese Air Force," in *Right-Sizing the People's Liberation Army: Exploring the Contours of China's Military*, ed. Roy Kamphausen and Andrew Scobell (Carlisle: U.S. Army War College, 2007), 381.

Although it is learning from the trails blazed by other major sea powers,[41] emulating the most capable sea powers involves demanding dynamics in which resource requirements increase with distance in exponential fashion.

Force Projection, Sustainment, and Port Access

One major challenge to projecting power is the "tyranny of distance."[42] To cover greater geographic areas while fulfilling existing missions, China must increase production of major ships. Steadily increasing force deployment to distant areas is slowly raising familiarity and readiness. To project air power across far greater ocean spaces, the PLAN is gradually developing deck aviation, with increased helicopter use and every large modern surface combatant capable of embarking at least one helicopter.[43] To enhance long-range air power, China is developing aircraft to operate off carriers and possibly eventually overseas land bases, aerial refueling capabilities, and related doctrine and training programs.

Building a successful carrier-centric navy capable of long-distance power projection is extremely demanding and expensive, however. For long-distance deployments, a total of three to four carriers (together with their accompanying coterie of protective submarines, surface ships, and aircraft and supportive replenishment ships) will be necessary for every carrier presence equivalent that China wishes to maintain in a given region. In other words, the farther out the PLAN goes, the more the ratio of total to deployed carrier groups will increase. Specifically, PLAN analysts commonly cite the need to possess three carrier groups overall to maintain one consistently conducting missions at sea. Yet the U.S. Navy has learned an even more demanding rule of thumb through unparalleled experience: four carrier groups in total for every one conducting missions at sea. Even this gold-standard force confronts tough choices and has long gapped its Mediterranean presence in order to meet more pressing requirements in the Central Command and Indo-Pacific Command areas of operations.[44]

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[41] Christopher D. Yung et al., *China's Out of Area Naval Operations: Case Studies, Trajectories, Obstacles, and Potential Solutions*, China Strategic Perspective, no. 3 (Washington, D.C.: National Defense University Press, 2010), 2, http://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/ChinaPerspectives-3.pdf.

[42] Unless otherwise specified, this and the next several paragraphs draw on ibid., 19–21, 32, 40–46.

[43] Andrew S. Erickson, "A Work in Progress: China's Development of Carrier Strike," *Jane's Navy International*, June 19, 2014.

[44] Roland J. Yardley et al., *A Methodology for Estimating the Effect of Aircraft Carrier Operational Cycles on the Maintenance Industrial Base* (Santa Monica: RAND Corporation, 2007); Roland J. Yardley et al., *Increasing Aircraft Carrier Forward Presence: Changing the Length of the Maintenance Cycle* (Santa Monica: RAND Corporation, 2008); and U.S. Government Accountability Office, "Navy Aircraft Carriers: Cost-Effectiveness of Conventionally and Nuclear-Powered Carriers," August 1998.

A related difficulty is sustaining extended-duration missions. As the PLAN ventures farther out, it must bring a greater logistics train with it. Driven in part by naval operations in the Gulf of Aden, China is already pursuing several enablers of long-duration operations. Its capacity to supply and replenish vessels at sea has increased rapidly since the first antipiracy task force in late 2008. A network of China Ocean Shipping Company suppliers and husbanding agents enables resupply in foreign ports. The PLAN also has made great progress in managing stocks, preserving perishables, and generating potable water. Yet supporting more than limited long-range operations would require additional, improved replenishment ships. China's shipbuilding industry has already started to build such vessels and has the capacity to build them far more rapidly, if requested. A sprawling global infrastructure supported by dozens of negotiated agreements allows the U.S. military to move parts globally. China would presumably require the same network to support similar operations. Access to neutral repair facilities is not politically controversial—Pakistan, for example, has already offered such services in Karachi—but developing high-caliber maintenance capabilities far from home will be expensive. China is pursuing access to neutral ports for supplying the PLAN but not yet to neutral airfields.

The establishment of overseas military bases is another option for equipping, servicing, and other support beyond replenishment, albeit one with lingering political costs and risk of operational vulnerability. Access to overseas facilities is already being realized to a modest extent in practice. The PLAN utilizes a network of access points, including its first overseas naval supply facility in Djibouti. The nature, scope, and configuration of the emerging architecture of China's access to overseas facilities will offer particularly important indications of its intentions with regard to far-seas operations. This architecture will be foreshadowed, in turn, by the PLAN's operational patterns and port calls; for instance, numerous port calls presaged China's establishment of a permanent facility in Djibouti. **Appendix 1** details potential ports of interest, with a particular focus on the Indian Ocean region where the PLAN has called extensively and for which substantial open source data is readily available.

Appendix 2 places China's evolving port network in an international historical context. As with force-projection capabilities, China has a continuum of progressively robust and demanding options for overseas port infrastructure and access.

Already, the PLAN has extensive experience calling on ports around the world, which enables a basic level of global presence in unchallenged peacetime conditions. Additionally, it may benefit from a global network of PRC-funded commercial shipping and ports infrastructure with a scope

and dynamism with some historical similarities with the Dutch East India Company.[45] This state-owned and state-funded juggernaut has engulfed such locations of potential strategic relevance as Piraeus, Greece, and is impressive in many respects. But even these strong commercial alliances and sinews do not translate directly into reliable great-power naval capabilities in the far seas; their influence may prove unreliable precisely when it is needed most.

To truly enable reliable PLAN operations in contested or wartime conditions, China must supplement transshipment points and entrepôts with militarily-capable facilities that it is fully capable of supplying—either through local resources and contracts, from robust regional hubs, or from farther afield—and defending. Moreover, an undefended carrier group would be lost in a maritime conflict without the protection of submarines, which are only sustainable with a forward base. With respect to these requirements, China's first overseas base in Djibouti represents the bare minimum, and it is unclear how Beijing would defend it from serious supply disruption or high-intensity attack. The base's isolation may explain why the Pentagon anticipates that "China may establish additional logistics facilities over the next decade" that could "further extend and sustain regional and global operations."[46] The Pentagon specifically projects that "China will seek to establish additional military bases in countries with which it has a longstanding friendly relationship and similar strategic interests, such as Pakistan, and in which there is a precedent for hosting foreign militaries."[47]

Yet such efforts, groundbreaking for Beijing as they would be, would remain far from the naval port network that major sea powers have needed to establish to ensure their ability to project major naval power under all conditions. Given favorable conditions and sufficient effort, China could reach such a status by its 2035 milestone, but the costs and challenges would be formidable. Soviet-style establishment and maintenance of key nodes would be still more time-consuming and difficult. While Beijing could hope to fund such an expensive system more sustainably than Moscow did, it is starting significantly farther behind the ally curve and would be very hard-pressed to create the reliable network of alliances and access that the Soviet Navy enjoyed, let alone that which the United Kingdom and France have developed through their colonial history and the United States has achieved through decades of intensive engagement and investment. The Pentagon emphasizes that "China's overseas military basing will be constrained by the willingness

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[45] Christopher Odea, "Ships of State?" *Naval War College Review* 72, no. 1 (2019).

[46] U.S. Department of Defense, *Annual Report to Congress*, 67, 70.

[47] Ibid., 112.

of potential host countries to support a PLA presence."[48] Absent a major new constellation of bases that require strong host-nation partnerships and tremendous investment, it would be very difficult for the PLAN to achieve a permanent large-scale presence beyond the western Pacific, Indian Ocean, and Persian Gulf. Under such limitations, the PLAN could make excursions into the Mediterranean Sea and polar regions, but it would likely lack the logistics train to maintain a constant presence in those far seas.

As for the possibility of China someday acquiring a global network of bases on a par with that of the United States, this scenario is worth considering theoretically but is unrealistic. Besides being constrained by its unshakable geographic liabilities, China does not benefit from the diverse array of reliable treaty allies that permitted Washington to amass, and thus far sustain, such a remarkable constellation of global support. During the Cold War, for instance, the United States operated from submarine bases in Holy Loch (Scotland), La Maddalena (Italy), and Guam and also enjoyed ad hoc access to additional bases such as Faslane (United Kingdom).

Coordination

To detect, report, and direct activities over the two oceans and beyond, China is developing an increasingly complete and integrated command, control, communication, computers, intelligence, surveillance, and reconnaissance (C4ISR) network. Ground-based (radar, electronic surveillance, and AIS stations) and sea-based ISR systems can provide persistent, accurate surveillance with massive data transmission to around one hundred nautical miles from shore. Farther afield, however, patrol ships and air- and space-based systems are required despite their intermittent coverage. Even with ongoing improvements, C4ISR—particularly the critical architecture coordination and data fusion components—is likely to remain one of the lagging enablers for China's far-seas operations.

Space systems are often tailored for specific signals transmission, area coverage, and operational parameters. Both space-based capabilities and ground-based counterspace systems are currently optimized to support near-seas counterintervention. Satellites with expanded geographic coverage are especially important to support expeditionary operations farther afield for which fewer alternatives are available. China is rapidly developing a constellation of remote-sensing, communications, and data-relay satellites second only to that of the United States in aggregate scope and capability. Its Beidou (Compass) positioning, navigation, and timing satellite constellation achieved regional coverage in 2013 and is on track to become

[48] U.S. Department of Defense, *Annual Report to Congress*, 112.

only the third network to provide global coverage by 2020. As part of its Digital Earth initiative, one of sixteen national strategic technological megaprojects under the State Council–sponsored Medium- and Long-Term Plan for the Development of Science and Technology (2006–20), Beijing plans to significantly enhance its land- and space-based remote-sensing architecture to include polar facilities. Currently having only four overseas ground stations, China plans to establish "network nodes" at the North and South Poles and in Brazil as part of a "Digital Earth scientific platform" by 2030.[49] Meanwhile, it continues to maintain the world's second-largest fleet of intelligence-gathering, surveying, and space-event support ships. Survey vessels, which typically precede naval operations, are studying relevant routes in the South Pacific and Indian Ocean.[50] Yuanwang-class space-event support ships, which have operated far from China since 1980, facilitate a wide range of space-based operations and occasionally engage in naval diplomacy. They may also gather intelligence and could conceivably facilitate a range of far-seas operations.[51]

Defense

Deploying increasing numbers of assets farther away creates new vulnerabilities for China. To have deterrence or operational value in a crisis or wartime situation, assets must be defendable. To address this challenge, China will need to develop its extremely limited open-ocean antisubmarine warfare (ASW) capabilities by adding quiet long-range nuclear submarines, maritime patrol aircraft, and helicopters. Constructing nuclear-attack submarines and deployment of additional units of these and other platforms with significant demonstrated ASW capabilities, such as helicopters and fixed-wing aircraft, can help greatly. Just as manifold factors optimize diesel submarines for littoral operations, the speed and range (and relative stealth within these demanding performance parameters) of nuclear submarines, together with their ability to shoot formidable anti-ship weapons, make them especially useful for defense of blue water SLOCs. However, their cost and need for highly trained crews and sophisticated maintenance facilities make nuclear submarines worth acquiring in substantial numbers only if China prioritizes SLOC defense,

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[49] Huadong Guo and Ji Wu, eds., *Space Science and Technology in China: A Roadmap to 2050* (Beijing: Science Press, 2010), 76.

[50] Ryan D. Martinson and Peter A. Dutton, "China's Distant-Ocean Survey Activities: Implications for U.S. National Security," Naval War College, China Maritime Studies Institute, China Maritime Report, no. 3, November 2018.

[51] Andrew Erickson and Amy Chang, "China's Navigation in Space: What New Approaches Will China's Space Tracking Take?" *Proceedings*, April 2012, 42–47.

an extremely demanding task that requires a credible capability to destroy military and commercial shipping.

Opposed Intervention

Operating in a hostile environment remains one of the most sensitive and difficult areas for China. Even at the low end, such operations bring complex questions of sovereignty and the risk of civilian casualties and other political vulnerabilities. Moreover, the capabilities to conduct combat air patrol and establish air superiority from carrier aircraft that are required for high-intensity operations will likely take years to develop. China also has not invested substantial resources or effort in developing out-of-area ASW capabilities and cannot easily use closer-in compensators such as sound surveillance systems.

For all these reasons, there is currently no immediately visible pathway for China to conduct joint forcible-entry operations or amphibious assault in scenarios outside of the Taiwan Strait or parts of the South China Sea. There is also currently no apparent or foreseeable strategic or operational rationale for Chinese forces to conduct such missions outside of a near-seas context. Even assuming a very robust "going out" by China into the world in all areas of the capabilities spectrum (diplomacy, information, military, and economic), employment of military platforms in force projection will trail behind actual capabilities. Much of the country's overseas activities and presence will be "lower end" in nature. However, China may derive additional power from the perception that it could soon have the capability and intention to do more, if it does not already.

Alternative Futures

As discussed in the first section, China's priorities in the maritime sphere can be mapped as radiating geographic layers of progressively diminishing focus extending from the near seas to the far seas to the far oceans. There is still considerable uncertainty, however, as to how China will attempt to realize its maritime goals over the next several decades. Assessing its prospects for developing distant bases, for example, requires a multi-decade outlook.

The Indian Ocean region is likely to be an area of development for quite some time to come. In that area alone, there are many uncertainties about speed, scope, and even potential setbacks. A study by the National Defense University emphasizes the challenges in predicting China's long-term trajectory:

> First, even if some national leaders plan beyond a few years, that information is not readily available to outside observers. Second, it is extremely difficult to

> forecast the security environment in which that trajectory will occur in the upcoming years. Third, China is entering uncharted territory with regard to out of area operations, so its future direction (long-term trajectory) is somewhat unpredictable. The best guide to possible future Chinese directions is to study the experiences of other countries as they began to conduct more ambitious out of area operations.[52]

Thus, it is helpful to consider multiple scenarios. This section employs the alternative scenarios methodology used in many U.S. government studies to consider three force postures looking out five, ten, and twenty years: high-end, low-end, and retrenchment.

High-End Scenario

Under a high-end scenario, specific potential new naval dynamics might well include the following. China rapidly pursues comprehensive efforts to defend its burgeoning overseas interests, with no insuperable obstacles. The PLAN would have sophisticated platforms and well-trained personnel. Supporting them would be technologies developed through disruptive innovation, particularly in the space, missile, and defense electronics sectors, as well as in specific frontier technologies where the United States and other established economies have had less history of leadership (e.g., hypersonics, nanotechnology, and additive manufacturing). China would have the world's largest civilian and military shipbuilding industry by tonnage, capable of building sophisticated vessels of all types. Its aviation industry would finally be able to develop and deploy the most advanced systems, including aeroengines. Such advances, in turn, could support robust arms sales networks and growing influence to help forge stronger partnerships, including with such pivotal states as Turkey and Saudi Arabia.

Fielding new systems thus derived could enable the PLA to hold at risk U.S. land-, sea-, and air-based forces not only in the western Pacific but also in Hawaii and manifold overseas locations. Chinese platforms would be able to engage in regular high-intensity intelligence gathering even as far away as just off the U.S. west coast. While Washington accepts such activities as a matter of policy, their intensification would entail a significant shift in bilateral military activities, which have heretofore been concentrated near China.

China would rapidly advance its geostrategic objectives closer to home and become a great maritime power on a par with the United States with global commercial networks and robust military presence and capabilities. BRI would continue to succeed, reordering key areas in Eurasia and beyond both economically and geostrategically and commanding the PLAN's

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[52] Yung et al., *China's Out of Area Naval Operations*, 6.

comprehensive protection. In addition to Djibouti, China might develop robust overseas basing capacity in the Indo-Pacific, the Mediterranean Sea, and the polar regions (in the last case, with a focus on C4ISR, presence, and specialized protection of resource extraction and transportation). It is impossible to predict exactly where China would establish naval bases, but a desired geographic distribution might include such regions as the central Indian Ocean (e.g., Maldives or Sri Lanka) and the South Pacific (e.g., Vanuatu or Fiji). In addition, it could establish a land base in Central or Southwest Asia (e.g., Afghanistan). Beijing might also increase its influence in the Indo-Pacific by covertly funding protest movements in Okinawa, Guam, and Hawaii or by using aid and presence operations to complicate the renewal of the Compact of Free Association, an international agreement between the United States and three Pacific Island nations (the Federated States of Micronesia, the Marshall Islands, and Palau) currently scheduled to expire in 2023.[53] Assuming progress in these areas, China might then pursue enhanced access or basing in Greece (with Piraeus as a key anchor point for BRI), Pacific South America (e.g., Ecuador or perhaps Peru), Scandinavia (e.g., Iceland or perhaps a more autonomous Greenland), and Antarctica.

China could advance tremendously in "new strategic frontiers," where it enjoys particular room for maneuver as rival powers struggle to expend the resources required for competition in a relatively new, unestablished arena. China would achieve a more comprehensive, active presence around the world, including in areas of special strategic importance, such as the deepwater or seabed areas, outer space, and the Arctic and Antarctic. It might well become a great polar power with a Scandinavian base to support tracking and communications as well as commercial shipping in increasingly navigable Arctic sea lanes. Likewise, China could use a strategically positioned network of Antarctic bases for covert military tracking, communications, and presence as well as for geopolitical leverage as it strives to renegotiate the 1991 Protocol on Environmental Protection to the Antarctic Treaty when it comes up for renewal in 2048 in order to open Antarctica to large-scale energy and mineral exploitation.[54] It is not entirely far-fetched to imagine Beijing offering Greenland finances for greater autonomy or independence from Denmark in exchange for enabling Chinese resource access. China would also develop a robust network of space-based assets and global ground-based tracking stations. The country would thus greatly reduce its dependence on its fleet of space-event support ships, even as it increased its deepwater presence and seabed exploitation capabilities.

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[53] Thomas R. Matelski, "America's Micronesia Problem," *Diplomat*, February 19, 2016, https://thediplomat.com/2016/02/americas-micronesia-problem/.

[54] For more information on reviewing the treaty, see Brady, *China as a Polar Great Power*, 29.

Low-End Scenario

In a low-end scenario, by contrast, Beijing would struggle to further its geostrategic objectives closer to home and to succeed with BRI abroad. Mounting resource constraints, financial and otherwise, could impose challenges as China's growth rate in economic and overall national power slowed in an S-curved trajectory. BRI might prove unprofitable and unaffordable, leaving port infrastructure saddled with unsustainable debt. China would limit overseas military power projection and would not develop robust dedicated basing access beyond Djibouti. Instead, it would continue to rely heavily on its fleet of space-event support ships.[55] Its activities in new frontier domains would be focused more narrowly on supporting specific military and economic objectives.

Retrenchment Scenario

Finally, a retrenchment scenario would entail an outright reversal of China's power-distance gradient to prioritize core interests close to home or even domestic issues. At present, the CCP has significant resources at its disposal, achievements with which to secure popular legitimacy, and narratives to exploit should it feel pressured to shore up support. In a worst-case scenario, however, the CCP's survival might be severely threatened, a situation that in the party's view would justify the mobilization of all available resources in its defense. Beyond the personal risks to Xi that have accrued from his consolidation of power at the expense of many rival elites, China is ruled by a Leninist party that has linked its legitimacy to the continued delivery of exceptional economic and nationalistic achievements. As the CCP itself fears greatly, policy failure or opposition close to home could rapidly undermine the party's rule. It therefore dedicates tremendous resources to domestic surveillance, security, and propaganda, a trend that will likely accelerate with future problems.

Besides these domestic economic and political challenges, Taiwan's status, the territorial dispute with Japan, and possibly other disputed sovereignty claims could challenge the party's nationalist credentials and motivate it to order military action. However, there are no core interests beyond China's immediate periphery that could readily force the CCP to choose between distant overseas concerns and the overwhelming prioritization of domestic stability and security close to home. If something had to give, therefore, it would likely be overseas force posture and operations.

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[55] Erickson and Chang, "China's Navigation in Space."

Implications for the Region and the United States

The previous section considered multiple scenarios for China's projection of capabilities and influence along a power-distance gradient with sharply diminishing returns. In the high-end scenario, a growing network of overseas bases, facilities, and access points would underwrite Chinese maritime power and influence. Particularly if Washington fails to get its finances and focus in order, China might even challenge the United States for naval hegemony in the Indo-Pacific. The National Intelligence Council observes that "as global economic power has shifted to Asia, the Indo-Pacific is emerging as the dominant international waterway of the 21st century." It warns that "U.S. naval hegemony over the world's key sea lanes, in this and other oceans, will fade as China's blue water navy strengthens. This could beg the question of which power is best-positioned to construct maritime coalitions to police the commons and secure universal freedom of passage."[56]

Whatever Beijing's actions in coming decades, they will almost certainly be informed by a foreign policy calculus that is far more multidimensional and flexible in practice than its deftly diversified approaches to date. Such evolution could entail increased security support to the UN and increased Chinese organization of bilateral and multilateral security arrangements and exercises. This concluding section considers the implications of China's pursuit of its maritime interests for the region and the United States.

Implications for the Region

There is a geographic gradient to the challenges China may pose to the United States and its regional allies and partners. The United States would be most threatened by an increasingly powerful and assertive China, whereas immediate neighbors—particularly those lacking significant sea buffers—would face tremendous challenges whether China remains highly centralized or suffers internal disarray. Regardless of the scenario that ultimately plays out, host and nearby nations and regions are likely to be affected considerably by relative power differentials: thriving autonomously on China's periphery is no easy task. A China whose growth slowed significantly and which decreased emphasis on overseas power projection would still be a large and powerful neighbor with nationalism likely sustaining sovereignty disputes along its periphery. Even a China convulsed by internal problems to the point of no longer being a potent unitary actor could still pose tremendous challenges to nearby nations, in part through its very lack of centralized control. If, on the other hand, a

[56] *Global Trends 2030*, 80.

stable China continues to achieve both rapid economic and military growth, it could attempt to increase its already significant economic partnerships and leverage with its neighbors while undermining the alliances and partnerships that they have long prioritized with the United States.

To undercut U.S. military capabilities and presence in the region, China would likely penetrate, surround, or further undermine key U.S. basing and access locations, starting along the first and second island chains running through Japan and Guam, respectively, as well as possibly extending to what some term a third island chain running through Hawaii. This is likely to include close monitoring of, and possible interference with, the Ronald Reagan Ballistic Missile Defense Test Site (formerly Kwajalein Missile Range) in the Marshall Islands. Beijing may go so far as making concerted attempts at eroding local support for basing in Okinawa, Guam, and Diego Garcia. If not countered effectively, such Chinese efforts could cause a geostrategic shift in which the island chains transition from being barriers to Chinese expansion to being barriers to U.S. access to support East Asian allies in military contingencies.

To the extent that it continues to focus farther afield, China is likely to develop close partners or quasi-allies that rely closely on it to further their (usually authoritarian) leaders' key goals. Nations of limited resources or geostrategic position such as Maldives, Sri Lanka, Vanuatu, Fiji, Greenland, Ecuador, Bolivia, or even Greece could become deeply beholden to Beijing and hence perceived as reliable—if demanding—supplicants.

Implications for the United States

To counter Chinese efforts to undermine the U.S. maritime presence in the Indo-Pacific, the United States and its regional allies and partners are likely to support nearby partners who allow access to counter Chinese activities and balance China's quasi-allies. While potential options are limited, in selected cases the United States could pursue enhanced or alternative basing and access. Possibilities include new basing or access in French Indian Ocean region territories to supplement or replace Diego Garcia and Bahrain should political developments compromise U.S. military access, new basing or access in Micronesia and the South Pacific to supplement Guam, and even enhanced polar capabilities based in Alaska or Antarctica.

Although China may significantly increase its geostrategic position, even under the most favorable scenario it will not achieve a "convergence of constraints" vis-à-vis the United States overall. Whatever its progress, for example, China will not succeed in fully escaping its geography. The United States as a maritime power operating on exterior lines generally faces the greatest challenges in Asia the more China focuses on its home region while

operating on interior lines; on the other hand, the farther Beijing focuses outward overseas, the greater the U.S. opportunities. Moreover, China's centralized, brittle political system embodies risks that decentralized American democracy does not. Finally, the United States is poised to retain significant advantages in such areas as demographics and the environment.

In several significant areas, however, China may converge increasingly with the United States. Most importantly, based on the spate of development and deployment that has already given China the world's largest conventional ballistic missile force and is positioning it as a leader in the emerging field of hypersonics, within roughly a decade both China and the United States will likely be able to target each other's homelands with conventional long-range precision-strike weapons, thereby eliminating previous areas of sanctuary. This has significant implications for their deterrence relationship.

Moreover, for the first time since the Cold War, Washington must seriously consider possible setbacks to its own power-distance gradient—whether self-inflicted, systemic, or deliberately engineered by Beijing—and how to counter them. To mitigate this risk, Washington should tend to its alliances and partnerships, a unique strength and source of unparalleled influence and access required for global power projection. This network has long-standing affinities that Beijing would struggle to replicate and sustain with its more transactional approach to foreign policy. Additionally, particularly in worst-case scenarios, U.S. decision-makers must consider how to target Beijing's strong power-distance gradient to shape its behavior across a full spectrum of contingencies. To do so, planners must consider enduring technological imbalances and invest efficiently in capabilities to counter China's military counterintervention approaches while targeting its vulnerabilities. For the foreseeable future, it will generally be easier to attack with missiles than to defend against them, so the U.S. Navy should continue to rectify the relatively low, short-range anti-ship cruise missile loadouts on its vessels. The United States also should continue to build on its formidable advantages in undersea warfare, which remains an extremely difficult and expensive discipline to master.[57] Finally, its withdrawal from the 1987 Intermediate-Range Nuclear Forces Treaty opens up options for U.S. development and peacetime and wartime forward deployment of new types of ground-based missiles with ranges between 500 and 5,500 kilometers, heretofore a loophole that China exploited unilaterally. Measures such as these can help the United States recalibrate the power-distance gradient vis-à-vis China in its favor.

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[57] Andrew S. Erickson, "China's Naval Modernization: Implications and Recommendations," testimony before the House Armed Services Committee Seapower and Projection Forces Subcommittee, Washington, D.C., December 11, 2013.

APPENDIX 1 Selected Indian Ocean region ports and PLAN access

Country	Port	Maximum draft (meters)	Level of replenishment/ repair facilities	Development/significance	Most frequent nature of visits
Bangladesh	Chittagong	9.2	Longshore, ship repairs (limited), marine railroad (small), dry dock (medium)	Private repair yards available; dry dock available for vessels up to 16,500 deadweight tonnage (DWT); home to Bangladesh Navy's largest base and most of its fleet, including submarines	Replenish, overhaul, joint drills
Djibouti	Djibouti	18.0	Mobile cranes, floating cranes, longshore, electrical repair, navigation equipment, ship repairs (limited), marine railroad (medium), garbage disposal	Multiple foreign naval/military bases, including China's naval support facility; small repairs possible; container terminal phase-one construction completed; with the new Doraleh multipurpose port, plus the older Doraleh container terminal, the port can berth at least four container ships; major repair and replenishment facilities are expected soon	Replenish, overhaul
Maldives	Malé	19.2	Mechanical and electrical repairs, roll-on/roll-off facility, fresh water and marine diesel/gas/oil available	Three sub-ports; breakbulk, liquid, and multipurpose facilities; no dry dock or LNG facilities	Show of presence during a constitutional crisis
Myanmar	Kyaukpyu	4.8	Longshore, ship repairs (extremely limited)	Kyaukpyu deep-sea port on Maday Island by Than Zit River mouth; initiated in 2009, project will produce 91 berths and accommodate 300,000-ton oil tankers; shallow draft, problematic currents, rocky obstacles; navy facility for Myanmar's Danyawadi Naval Regional Command can host up to frigate-size vessels, has floating dry dock for smaller vessels	N/A

Appendix 1 continued

Country	Port	Maximum draft (meters)	Level of replenishment/ repair facilities	Development/significance	Most frequent nature of visits
Myanmar	Yangon	9.0	Repairs at dry dock, engineering works, roll-on/ roll-off facilities, bunkering by barge, fresh water at quay, garbage disposal	PLAN visits the 9-meter-deep Thilawa outer harbor downstream, not 8-meter-deep inner harbor by city	Friendly visits
Oman	Salalah	17.5	Longshore, electrical repair, navigation equipment, ship repairs (limited), marine railroad size (small), garbage disposal	Focus on transshipment container traffic; 800-meter turning basin	Replenish, overhaul
Pakistan	Gwadar	13.8	Control tower (footprint only), maintenance workshop (general), multiuse quay wall, vehicle servicing garage, laydown yard, bunkering fuel	Acquired by China Overseas Port Holdings Ltd. in 2013; hazardous cargo storage yard; desalination plant can supply 100,000 gallons/day to visiting ships; can berth at least two container ships; still being dredged, should accommodate around 20-meter draft once complete; yard and cranes could be used for loading weapons	N/A
	Karachi	13.0	Naval servicing and repair capabilities, including for nuclear submarines; dry dock facilities	PLAN's preferred Indian Ocean repair facility on the territory of close strategic partner; Karachi Shipyard and Engineering Works onsite; two dry docks available: 18,000/25,000 DWT; deepwater container terminal and other expansion underway	Friendly visits, joint drills, visits of conventional and nuclear submarines with tenders

Appendix 1 continued

Country	Port	Maximum draft (meters)	Level of replenishment/repair facilities	Development/significance	Most frequent nature of visits
Seychelles	Port Victoria	11.5	Longshore, electrical, ship repairs (limited), marine railroad (small), garbage disposal	Seychelles foreign minister invited China to establish antipiracy base; divers and underwater welding equipment available; dry-dock shipways available for vessels greater than 300 gross tonnage	Friendly visits
Singapore	Singapore	16.7	Electrical repair, ship repairs (major), dry dock (large), dirty ballast	World-class complex: one terminal, nine subports; military ports	Replenish, overhaul, friendly visits
Sri Lanka	Colombo	16.0	Longshore, ship repairs (major), marine railroad (medium), dry dock (small)	Multiple afloat repair berths; dry docks to 120,000 DWT; deepwater port opened in 2012; Colombo South Harbor Development project will increase depth to 18 meters and then 23 meters; reported $500 million Chinese investment; base for Sri Lanka Navy Western Fleet	Friendly visits, visit of conventional submarine and tender
	Hambantota	17.0	Laydown yards, several multiuse and roll-on/roll-off berths, multiuse quay walls, adjoins Mattala Rajapaksa International Airport	Ship-serving capabilities planned; port to be constructed in three stages over fifteen years; phase one accommodated first vessel in 2010; general cargo berth of 610 meters, handles vessels up to 100,000 DWT; phase two initiated; recent presence of survey ship suggests near-term progress; 85% leased to China Merchant Ports Holding for 99 years in controversial debt-for-equity swap; Sri Lanka reportedly to locate naval base there	Friendly visits

Appendix 1 continued

Country	Port	Maximum draft (meters)	Level of replenishment/ repair facilities	Development/significance	Most frequent nature of visits
Sri Lanka	Trincomalee	12.5	Longshore, ship repairs (limited), marine railroad (very small), dirty ballast	Slipways for commercial and naval vessels	Friendly visits
Tanzania	Bagamoyo	To be dredged	Under development	Construction commenced in 2018 in association with China Merchants Holdings International Co. Ltd. and State General Reserve of Oman; $10 billion in Chinese investment projected; will include special economic zone, road, and rail links; envisioned to be East Africa's largest port and leading shipping/logistics center when completed	N/A
Yemen	Aden	14.7	N/A	National dockyard company offers range of limited facilities and services: two floating docks, in-water repair services, repair shops and other workshops, large lathes, electrical, casting, and refrigeration	Replenish/overhaul, noncombatant evacuation operations in 2015, civil war suspended usage

SOURCE: Data obtained from IHS Maritime Sea-web and individual port websites, as well as input from Colonel Vinayak Bhat, Indian Army (ret.); Conor Kennedy; Collin Koh; Terence Nicholas; Vice Admiral Arun Kumar Singh, Indian Navy (ret.); and Austin Strange.

APPENDIX 2 Military basing spectrum and China's potential place

	Port calls	Basic access	Civil-military	Naval port network	Key nodes	Gold standard
Nature	Commercial ports	Commerce-centric permanent access	Dual-use	Develop and build on commercial port infrastructure	Concentrate capabilities and supplies in key ports	Comprehensive support for military operations
Example	Russia, India today	Dutch East India Company, imperial Germany, imperial France	Logistics Group, Western Pacific (U.S. today)	France today; imagined "string of pearls"	United Kingdom (interwar period), Soviet Union (Cold War)	United States
Services	Refueling, provisioning, electricity, waste disposal	Basic services, commercially based	Dedicated medical, communications, housing, rest, training, medical facilities; refrigerated storage; limited ship and equipment repair; replenishment and resupply through distribution networks, extensive use of husbanding agents	Covert capabilities, resources	–	Complete, albeit with some distribution among facilities
Legal or diplomatic basis	Local law	Political backing, commercial contracts	Memoranda of agreement/status of forces agreements (SOFA)	SOFA (infrastructure development = aid)	SOFA + subsidies	SOFA + major subsidies
Footprint	Small, transient	Dual-use	Low profile, several hundred personnel	More personnel, some covert?	Significant facilities and personnel	Major facilities and personnel

Appendix 2 continued

	Port calls	Basic access	Civil-military places	Naval port network	Key nodes	Gold standard
Pros	Politically easiest, benefits local economy	Economic logic, aligns with China's preferences and strengths, unprovocative	Balanced economic and political costs	Leverage foreign investment	Cost-effective, limits allies' approval required, effective defense and offense	Maximizes capability and capacity
Cons	Limited support and slots, standards not guaranteed, Chinese military and civilians skeptical, high cost-capacity ratio	Historically checkered, unreliable in conflict	Modest capability and capacity	Less familiar places for PLAN, politically sensitive with instability and risk	Expensive, concentrated targets	High political and resource costs
Status	Approach widely used by China since 2000	China is pursuing such an approach by funding and managing global shipping and port networks	China already has such facilities in Djibouti, and may soon develop others elsewhere in Indo-Pacific	Conceivable by 2035, would require tremendous resources and effort	Unlikely before 2035, achievable by 2050 under favorable conditions	Likely unachievable before 2030, achievable by 2050 under favorable conditions

SOURCE: Christopher D. Yung et al., *China's Out of Area Naval Operations: Case Studies, Trajectories, Obstacles, and Potential Solutions*, China Strategic Perspective, no. 3 (Washington, D.C.: National Defense University Press, 2010), 6, 12–47; and Andrew S. Erickson, Lyle J. Goldstein, and Carnes Lord, eds., *China Goes to Sea: Maritime Transformation in Comparative Historical Perspective* (Annapolis: Naval Institute Press, 2009).