Occasional Paper

Crossing the River by Feeling the Stones
The Trajectory of China’s Maritime Transformation

Sidharth Kaushal and Magdalena Markiewicz
Crossing the River by Feeling the Stones
The Trajectory of China’s Maritime Transformation

Sidharth Kaushal and Magdalena Markiewicz
188 years of independent thinking on defence and security

The Royal United Services Institute (RUSI) is the world’s oldest and the UK’s leading defence and security think tank. Its mission is to inform, influence and enhance public debate on a safer and more stable world. RUSI is a research-led institute, producing independent, practical and innovative analysis to address today’s complex challenges.

Since its foundation in 1831, RUSI has relied on its members to support its activities. Together with revenue from research, publications and conferences, RUSI has sustained its political independence for 188 years.

The views expressed in this publication are those of the authors, and do not reflect the views of RUSI or any other institution.

Published in 2019 by the Royal United Services Institute for Defence and Security Studies.

This work is licensed under a Creative Commons Attribution – Non-Commercial – No-Derivatives 4.0 International Licence. For more information, see <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

RUSI Occasional Paper, October 2019. ISSN 2397-0286 (Online).
Contents

Executive Summary v
Methodology vii

Introduction 1

I. The Foundations of Chinese Strategic Thought: A (Brief) Theoretical Primer 21

II. China’s Evolving Maritime Operational Framework: Systems, Not Fleets 35

III. The Structure and Components of the PLA’s Theatre-Level Maritime System 39
The Organisation of the PLA 39
The PLA’s Growing Reconnaissance Strike Complex 43
The PLA’s Procurement Patterns: A High/Low Mix 45

IV. China’s Present and Emerging Maritime Force Structure 51
Surface Combatants 54
Light Surface Combatants 59
Submarines and Undersea Warfare 61
Airborne Assets 68
Land-Based Precision Strike Capabilities 71
Shore-Based Ballistic Missiles 72
Cruise Missiles 74

Conclusions: Summarising China’s Approach to the Sea and its Long-Term Ramifications 77

About the Authors 81
Executive Summary

The Maritime Turn in Chinese strategy promises to be a defining feature of the 21st century. Yet despite the substantial space devoted to analysing either specific capabilities or aspects of Beijing’s naval strategy, such as the anti-access/area denial challenge and its emergent blue water capabilities, there has been little effort to situate China’s maritime turn within the context of its broader national security strategy and geopolitical vision. This paper adds to the existing literature by providing an overarching framework within which to situate China’s maritime transformation.

The paper’s core argument is that China’s broader maritime strategy is not, as is often assumed, predicated on territorial revisionism as an ultimate end. Rather, calibrated acts of territorial revisionism are subordinate to a wider geostrategy aimed at transforming an unfavourable maritime geography into one which can sustain China’s status as a two-ocean power capable of exerting calibrated influence in the Indian Ocean and the Western Pacific. Currently, China’s maritime geography forces it to divide its navy into three fleets along an extended coastline. To combine forces, Chinese vessels from each fleet need to traverse sea lines of communication (SLOC) straddled by potentially hostile entities, such as Japan, Taiwan and US forces in the northern Philippines. Moreover, they also control the routes of egress into the Western Pacific and Indian Ocean. By extension, they hold a veto over China’s ability to protect its far-flung commercial interests. To achieve this revision to the international system without disrupting the stability from which the People’s Republic of China (PRC) has long benefited, China envisions alterations to the status quo by steps short of war. If necessary, however, it might fight local peripheral wars to establish itself in a critical zone running from Malacca to Taiwan. This critical region, which straddles northeast Asia’s SLOC and supply as well as routes for egress in the Western Pacific and Indian Ocean, confers, by its possession, a de facto veto over the politics of northeast Asia given the dependence of states such as Japan and South Korea on SLOC running through the South China Sea. Moreover, recovering Taiwan and exercising effective control over the South China Sea would create a safe maritime bastion that would allow the establishment of a combined naval force centred on Hainan Island and Taiwan capable of utilising its central position to redeploy rapidly between the Western Pacific and Indian Oceans. This would allow China to more effectively project power into the wider Indo-Pacific.

To this end, China has articulated a dual-track maritime strategy. The first prong of this strategy entails gradually Finlandising Southeast Asia and generating the capacity to recover Taiwan. In the South China Sea, China has attempted to mix graduated acts of coercion and economic

1. Finlandisation is a term that came into use during the Cold War to describe a state of affairs in which a smaller country is not quite a client state to a larger neighbour but does show it a special degree of deference. The term was originally used to describe the relationship of Finland and the Soviet Union where Finland was never a satellite like the states of Eastern Europe and retained a
persuasion as forms of positive and negative feedback to socialise the states of the region to accept its maritime primacy. It is within this context that China acts with regard to how its territorial disputes in the region might be viewed. The value of these disputes is not the intrinsic value of the territory at stake. Rather, they matter as points of leverage given that they can be rekindled should a target state or entity pursue broader policies that China deems against its interests. Combined with China’s growing naval- and land-based maritime power projection capabilities, calculated acts of coercion can – at least in Chinese eyes – force the region’s powers to accept China’s hegemonic role in the area. The approach, then, amounts to what J C Wylie dubbed a cumulative strategy, relying on the aggregate effects of multiple localised acts to produce overarching strategic results. In effect, then, China’s strategy in the region is not one of territorialisng the seas or challenging freedom of navigation per se. Rather, the abilities to challenge specific actors’ freedom of navigation or press specific claims are components of a wider strategy of status adjustment – demonstrating to the region’s powers that China’s regional primacy is a fait accompli and building positions of strength that would allow China to exert local sea control if it so chose. Securing specific claims, exerting a veto over the economic activities of regional powers in the South China Sea and building a military presence on fortified islands all serve a coterminous strategic end – socialising the region’s actors to view the area as a Chinese sphere of influence.

Beyond its region, China is gradually getting actors in regions such as the Indian Ocean and the Gulf accustomed to its naval presence. China’s presence is currently restricted to anti-piracy and evacuation missions, coupled with bankrolling friendly ports in states along the wider Indo-Pacific. However, as Chinese naval drills in the northern Indian Ocean illustrate, China is also gradually extending its defence perimeter outwards, a process which will likely accelerate if China can transform its maritime geography by Finlandising the South China Sea and recovering Taiwan.

Anti-access approaches and naval power projection assets respectively play an important role in localising and prevailing in any conflicts deemed necessary to accomplish this series of revisions, but specific assets should not be conflated with strategy. A better description of China’s naval trajectory, then, might be the pursuit of localised command without an emphasis on capital ships. Rather than a false dichotomy between anti-access and power projection, China’s approach has been to articulate a dual-track naval procurement process. In the last two decades, China has pursued a course analogous to that of the Soviet Navy under Admiral Sergei Gorshkov,
attempting to leverage the increasing range of long-range precision strike assets, along with the increasing lethality of smaller vessels to create an integrated sea control system, as opposed to merely a fleet, in its near seas. In tandem, however, China has developed the nucleus of a blue water force. Beyond its immediate region, the utility of China’s power projection capabilities, which will likely be limited for some time, will be more political than military. However, these capabilities can also form an outer defensive layer at the forward edge of China’s periphery in wartime to augment its near-seas maritime system.

Should a position of political and military centrality be achieved in the near seas, however, this far-seas fleet can serve as the nucleus for a more ambitious and operationally unique approach to maritime operations. The People’s Liberation Army Navy’s (PLAN) leadership envisions an eventual integration between its various branches that will enable it to achieve sea command without an exclusive emphasis on capital ships both regionally and extra-regionally. The maturing of reconnaissance strike complexes has, in the eyes of Chinese strategists, created the basis for a power projection force somewhat different from those traditionally envisioned in the West. The critical immediate aim of Chinese maritime strategy, then, is to create a force on both land and sea that operates on interior lines of communication and movement. The combination of a central position in the South China Sea with the central position of China’s landmass between the Pacific and Indian Oceans could, if China achieves its near-term aims, allow it to generate force in both regions more rapidly than the US. A force in Gorshkov’s image can, then, evolve into one that utilises a Soviet tactical and operational grammar to achieve Mahanian ends.

As such, China has created a force around Admiral Elmo Zumwalt’s concept of a high/low mix. The bulk of the PLAN’s existing fleet consists of vessels well suited to achieving cautious, near-term local changes by a combination of calibrated revisionism and escalation control. This force can exert sea control under the aegis of ground-based air and missile cover but lacks the capacity to move beyond the protective envelope of China’s land-based forces. The generation of the smaller, high-end component of the force at sea, in tandem with longer-range prompt strike capabilities on land, will also, however, build the institutional knowledge and technical capacity to generate a larger distant seas force capable of exploiting maritime gains in the central hinge area running from Taiwan to Malacca to strategic effect in the medium- to long-term.

**Methodology**

This paper has relied on a combination of primary and secondary sources. A literature review of authoritative sources has been conducted to draw together the individual tactical and operational strategic inferences of existing literature into an overarching framework. Open-source intelligence analysis such as the US Office of Naval Intelligence report on China’s naval modernisation and work on the same done by the Congressional Research Service also informed this paper. While the emphasis of this paper has been on recent open-source material,
some older reports have been considered in areas where they either add a perspective on the long-term evolution of the PLAN or their findings have not been superseded by recent evidence.

Finally, the authors relied on an increasingly accessible array of primary literature on China’s military strategy, doctrine and tactics. The paper included in its analysis the 2015 edition of China’s Military Strategy, the PRC’s defence white paper. Such documents tend to offer useful insight into the declaratory elements of the PRC’s defence strategy and the scope of those interests that it is willing to state publicly. Additionally, authoritative official publications such as *The Science of Military Strategy*, *Lectures on the Science of Joint Campaigns* and the *Science of Second Artillery Campaigns*, produced by the Academy of Military Sciences and National Defence University, are considered to provide insight into internal People’s Liberation Army (PLA) discussions on strategic and operational issues. While these sources are not statements of doctrine per se, they tend to represent Chinese military thought given that they are often co-authored by senior officials and serve as textbooks in staff colleges. Additionally, semi-official academic journals such as *Modern Ships* often feature articles by PLA officers. While these journals may represent the opinions of a particular author, triangulating between stated opinions, doctrinal statements and patterns of behaviour can compensate for this source of uncertainty.
Introduction

THE EMERGENCE OF China as a major maritime power in the 21st century is all but a given. As of 2015, China became the world’s largest shipbuilder and between 2009 and 2024, the state will have invested anywhere between $65.7 billion (£54.4 billion) and $84.8 billion on new naval construction projects.¹ Beijing points to a growing consensus that as a major commercial state, China will require a growing maritime presence in order to ensure its national security.² However, lingering questions remain regarding the purpose of the emerging Chinese fleet. Will China seek an open ocean blue water capability such as the US’s, as some argue, or will it attempt to erect what Bernard Cole dubs a ‘Great Wall at sea’, using several tools grouped under the rubric of anti-access/area denial (A2AD) with a fleet that can exploit the opportunities that these capabilities create to secure regional maritime interests in areas such as Taiwan?³ This is integrally tied to a broader debate about the purposes of Beijing’s grand strategy. Is China a risk-averse revisionist, a strategically restrained actor attempting to preserve its regime, or will it accept the risks needed to become a global power? Moreover, to what degree has the leadership of President Xi Jinping represented a fundamental break with the late former President Deng Xiaoping’s dictum of ‘hiding and biding’?⁴

---

3. Yves Heng Lim, China’s Naval Power, an Offensive Realist Approach (Farnham: Ashgate, 2016); Bernard Cole, The Great Wall at Sea: China’s Navy in the Twenty First Century (Annapolis, MD: Naval Institute Press, 2010).
4. For an articulation of the view that China has taken on a fundamentally different and more assertive course under President Xi, see Aaron L Friedberg, ‘Competing with China’, Survival (Vol. 60, No. 3, June 2018), pp. 7–64; Yan Xuetong, ‘From Keeping a Low Profile to Striving For Achievement’, The Chinese Journal of International Politics (Vol. 7, No. 2, Summer 2014), pp. 153–84. To show that the PRC is pursuing a relatively restrained strategy of limited aims revisionism motivated by a combination of defensive intent and regime insecurity, see Charles S Glaser, ‘A U.S.–China Grand Bargain?: The Hard Choice Between Military Competition and Accommodation’, International Security (Vol. 39, No. 4, Spring 2015), pp. 49–90; Robert S Ross, ‘The Problem with the Pivot: Obama’s New Asia Policy is Unnecessary and Counterproductive’, Foreign Affairs (Vol. 91, No. 6, November/December 2012), pp. 70–82. See also Michael S Chase, ‘Chinese Suspicion and U.S. Intentions’, Survival (Vol. 53, No. 3, June/July 2011), pp. 133–50. While some of these sources predate the current Chinese administration, they engage in discussion of a trend towards greater assertiveness that currently forms the centrepiece of debates regarding China and – it is often forgotten – long precedes the present administration.
China’s military expansion over the past two decades, with a heavy emphasis on the maritime domain, might well lend some credence to the notion of an A2AD strategy. Despite the much-heralded procurement of assets such as aircraft carriers, the bulk of China’s naval procurement has centred on numerous moderately priced vessels such as the Type 054 Jiangkai frigate and the Type 056 Jiangdao corvette, along with shore-based precision strike capabilities, such as the DF-21D anti-ship ballistic missile.5

Yet this modest mission statement is at odds with the stated opinions of the People’s Liberation Army Navy’s (PLAN) own founding father Admiral Liu Huaqing, a self-avowed acolyte of Alfred Thayer Mahan, who categorically insisted that China’s future was as a maritime power.6 China, according to Liu, is hemmed in by two concentric island chains which preclude it from acting as a maritime power. Securing Taiwan and the South China Sea for Liu was thus not merely an end meant to right the wrongs of a ‘century of national humiliation’ but a means to the end of making China a two-ocean navy capable of operating beyond its immediate environs in both the Indian Ocean and the Pacific. As such, Taiwan is described by PLA strategists not in nationalistic terms, but in geopolitical terms as the lynchpin that holds together the first island chain. With both Taiwan and Hainan, China would be able to put a ‘cork in the bottle of the South China Sea’ and outflank the US position in Japan by projecting power into the second island chain.7 Similarly, the South China Sea is likened to the Caribbean – dominance of which, in tandem with the construction of the Panama Canal, allowed the US to transform itself into a state that could operate in two oceans: the Atlantic and Pacific. Chinese strategists liken the South China Sea, with its multiple routes of egress, such as Sunda, Lombok, Malacca and the Kra Isthmus, to the Caribbean – a region pivotal to redeploying forces between the Pacific and Indian Oceans.8 The logic here is that holding a central position between two oceans allows the PLAN to move rapidly between them just as the central position in the Caribbean, coupled with the Panama Canal, allows the US to shift forces between the Atlantic and Pacific faster than any competitor could. This area, which takes in the Western Pacific and Indian Oceans, corresponds geographically with the contours of China’s Maritime Silk Road. Closer to our own time, the 2015 edition of China’s Military Strategy has added the mission of far seas protection to the existing objective of near seas defence signalling a more expansive maritime vision. The white paper states that,

with the growth of China’s national interests ... the security of overseas interests concerning energy and resources, strategic sea lines of communication (SLOCs), as well as institutions, personnel and assets abroad, has become an imminent issue ... In line with the strategic requirement of offshore waters defense and open seas protection, the PLA Navy (PLAN) will gradually shift its focus from “offshore

---

waters defense” to the combination of “offshore waters defense” with “open seas protection,” and build a combined, multi-functional and efficient marine combat force structure ... It is necessary for China to develop a modern maritime military force structure commensurate with its national security and development interests, safeguard its national sovereignty and maritime rights and interests, protect the security of strategic SLOCs and overseas interests, and participate in international maritime cooperation, so as to provide strategic support for building itself into a maritime power.9

The point was driven home by President Xi, who, addressing PLAN sailors, stated that theirs would be a global force and that ‘the task of building a powerful navy has never been as urgent as it is today’.10 How, then, to square this ambitious mission with China’s largely littoral-oriented, fleet-building programme?11 Moreover, is a Chinese desire to build a navy capable of operating outside its region a realistic ambition or, like Alfred von Tirpitz’s High Seas Fleet, will the PLAN find itself constrained by both geography and conventional inferiority and become more liability than asset?12

This paper argues that much of the conceptual confusion surrounding the People’s Liberation Army’s (PLA) future posture is driven by two factors. First, there has until recently been an unhelpful tendency to use the terms A2AD or power projection as if they denoted a strategy.13 Denying an opponent access to a particular maritime theatre or holding its assets at risk is not a strategy in and of itself. It is a means to achieve a wartime objective that is, in turn, nested within a wider maritime strategy. The authors’ contention is not that the many well-researched overviews of China’s anti-access capabilities do not add value, but rather that their explanatory power can be improved by nesting A2AD within its strategic context. Much of the recent literature has attempted to identify a break with both A2AD and, by extension, China’s more restrained

11. Note that this paper uses a definition of the littoral outlined by Milan Vego – those areas bordering a closed or semi-enclosed sea. As such, littoral is not to be conflated with coastal combat. See Milan Vego, ‘On Littoral Warfare’, Naval War College Review (Vol. 4, No. 2, 2015), p. 4.
13. For an example of this tendency among analysts and policymakers to treat counter-intervention or A2AD as catch-all concepts, see Office of the Secretary of Defense, ‘Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China’, 2012, p. 21. For a useful critique of the term, see Sam J Tangredi, ‘CNO vs A2AD: Why Admiral Richardson is Right about Deconstructing the A2/AD Term’, Navalist, 10 January 2017.
strategic posture. According to this narrative, China’s generation of maritime power as a blue water capability with the potential for expeditionary operations beyond East Asia represents a bellwether for regional dominance and eventual global aspirations. Authors examining China’s rise through this prism do not necessarily ascribe identical motives to the People’s Republic of China (PRC) – with some arguing that structural security-seeking motives are driving the PLAN’s blue water approach, while others ascribe China’s maritime transformation to a combination of a benign security environment on land and a historically observed nationalistic impulse to develop navies as symbols of great power. There is, however, a broad agreement that the PLAN will attempt to develop into a globally deployable force in the coming years. A sub-category of this literature emphasises that a number of both regional and extra-regional contingencies that China may face might well not involve the US. This highlights the problems with catch-all terms such as counter-intervention and illustrates that the PLAN could be globally deployable without being a force capable of competing with a navy, such as the US’s.

While the authors broadly agree with the notion that China is gradually building positions of strength, both regionally and extra-regionally, they propose several additions to existing literature. First, at the military-operational level, literature juxtaposing A2AD and a potential blue water turn creates a false dichotomy between land-based ‘anti-access’ capabilities and maritime sea control assets to which the PLA does not subscribe. The PLA views the generation of maritime power in holistic terms, delinking sea control from capital ships. Land-based capabilities that can deny an area to an opponent can also enable one’s own vessels to exercise control, with denial being a means to an end and not an independent objective. Moreover, the PLA’s concept of ‘joint firepower campaigns’ is agnostic on the question of which capabilities are used to seize or exercise control. For example, literature on the use of land-based missiles suggests that one function may be to effect blockades of islands. This is typically a function associated with navies using command of the sea to influence events on the land. Similarly, both land-based assets, such as anti-ship ballistic missiles (ASBMs), and locally deployable vessels, such as the Houbei and Jiangdao classes, serve a convergent operational aim, securing and using local sea control in East Asia. If shielded from heavier vessels by land-based firepower,


15. For an articulation of the blue water turn as naval nationalism argument, see Robert Ross, ‘Nationalism, Geopolitics, and Naval Expansionism from the Nineteenth Century to the Rise of China’, Naval War College Review (Vol. 71, No. 4, August 2018), p. 141; a more structure-driven argument can be found in Michael McDevitt, ‘Becoming a Great “Maritime Power”: A Chinese Dream’, CNA, June 2016.


otherwise vulnerable light vessels such as the Houbei and Jiangdao can exercise sea control with relative ease. By the same token, the smaller number of assets capable of operating beyond East Asia – be they long-range bombers such as the H-6 or emerging carrier task groups – can be grouped under the rubric of assets that enable contestation, if not control, beyond local waters. The authors therefore reject the notion of a recent transition from anti-access to sea control, arguing instead that China’s maritime transformation might be better understood as a long-term drive to develop the capacity to exercise sea control over an increasingly expansive area without an exclusive emphasis on capital ships.

Second, existing literature tends to list regional interests and extra-regional ones in an acontextual manner, ignoring the symbiotic links between the two. Documents such as the 2019 US Department of Defense report on China’s military modernisation, which highlight regional objectives such as securing Beijing’s interests in territorial disputes and extra-regional interests, such as protecting SLOCs, ignore the ways in which these interests fit into an overarching strategic framework.\textsuperscript{19} Specifically, the authors argue that Beijing’s decisions to spark maritime territorial disputes while ignoring others on land are a function of its perception that China is hemmed in by a barrier of potentially hostile states spanning the first island chain.\textsuperscript{20} To the extent that the PLAN can project meaningful power beyond its region, it must transform an unfavourable maritime geography by effectively Finlandising the sub-region stretching from the South China Sea to Taiwan. Coercive acts that both build positions of physical strength, such as China’s newly constructed bases in the South China Sea, and portray to regional actors the impression of China’s inevitable rise are, the authors argue, critical to this. Maritime power is not a means to the end of securing specific disputed territories, then. Instead, disputes are a tool with which to build the geographical basis for a maritime transformation.\textsuperscript{21} Moreover, limited power projection capabilities which can serve political ends beyond East Asia, protect menaced SLOCs in peacetime and, potentially, fit within the rubric of a regionally oriented defence in wartime augment the aim of regional Finlandisation, isolating target states and complicating the redeployment of the forces of a globally postured adversary. This in turn would make power projection feasible in a wider variety of contingencies – a virtuous cycle of sorts (at least for the PRC). As such, a laundry list of maritime objectives does not fully articulate how these objectives relate to one another.

The authors’ first proposition, then, is that the anti-access/blue water dichotomy be replaced with local sea control and extra-regional contestation. This view can better rationalise China’s high/low mix of large numbers of light vessels backed by shore-based firepower and its more limited far seas capabilities. Second, the authors aim to fill a gap in the existing literature by drawing together the twin strands of research on China’s land- and sea-based capabilities by

\begin{itemize}
\item[19.] Office of National Intelligence, ‘China’s Military Modernization’, 2019, pp. 8–11.
\item[20.] The chain of islands running from the Japanese mainland through Taiwan to the northern Philippines which collectively hem China’s naval forces into East Asia.
\item[21.] For a discussion of the way in which the PRC has either ignored or ignited specific disputes as part of a wider political strategy, see Eric Hyer, \textit{The Pragmatic Dragon: China’s Grand Strategy and Boundary Settlement} (Vancouver: University of British Columbia Press, 2015).
\end{itemize}
proposing an overarching framework that illustrates how the twin aims of regional sea control and extra-regional contestation fit into an overarching vision. Specifically, rather than being dichotomous, regional control and extra-regional contestation are viewed as being mutually reinforcing – with a limited Chinese presence beyond East Asian waters serving to ease pressure on China’s immediate periphery. What the authors propose, then, is not an outright revision of existing literature, but a synthesis of its findings into a coherent framework.

Second, any discussion of a state’s maritime trajectory must begin by deducing the role that the sea plays in its wider grand strategy, its image of the future strategic and operating environment and the particular role that capabilities meant to impact the balance of power at sea play in this rubric rather than deducing strategy from particular capabilities. The geostrategic vision of China’s leaders might be best described as a series of concentric circles emanating from Beijing. This view is articulated by both external scholars and figures such as Yuan Peng, the president of the China Institutes of Contemporary International Relations, a think tank run by the Ministry of State Security. At the core of the system are the party’s control of the levers of power and the ethnic Han heartland. Emanating further out towards Central Asia on land and the first island chain at sea is China’s immediate periphery. These are the areas from which a hostile power or coalition could stage attacks against the Han core. Beyond this is an arc of increasingly important interests, stretching from the Indian Ocean to the Gulf (the far seas). The final ring is the wider world straddled by what PLA strategists dub the open oceans in which China has diplomatic and economic, but not security, interests. The utility of this framework is that it illustrates two key facets of Chinese strategic planning. First, the closer one gets to the inner rings, the more control the PRC and Chinese Communist Party (CCP) need over events. Second, however, the concentric circles dynamically affect one another. Being uncompetitive beyond the periphery, for example, might allow an external power from this region to insert itself into China’s periphery. If China cannot exert strategic control over its periphery then the Han heartland and the party itself are at stake. Conversely, a position of strength in one ring can allow it to act as a springboard for projecting power into the next.

In essence, then, the contradiction between party survival, regional revisionism and extra-regional power projection is a false one because they are mutually reinforcing. To the extent that the PRC can exert a degree of influence beyond East Asia, it can better control the tide of events within the region. An example of this in economic policy is the way in which

---

22. The ethnic Han heartland refers to the regions comprising China’s coastal and riverine core – distinct from though protected by a buffer of inland areas like Tibet and Xinjiang which are under Chinese control but are culturally and geographically distant from this core area.

during the mid-2000s, China’s strategy of ‘going out’ – encouraging its state-owned enterprises to engage in investment on a global scale – has robbed Taiwan of its few remaining diplomatic allies in regions such as Africa. Influence, albeit economic, in the furthermost of the concentric circles nonetheless had an impact on a core interest. Therefore, efforts to dominate one circle will be accompanied by a bid to compete, if not quite dominate, in the others, with Beijing’s ambitions and hard power footprint getting progressively more modest further away from Chinese shores. Success in dominating the circle in question will lead to more ambitious efforts further afield. Thus, for example, in the 1990s China pursued a calculative approach, mixing limited deterrence and economic and diplomatic persuasion in its immediate periphery even as the regime consolidated control in the turmoil of the post-Cold War, post-Tiananmen era. The PRC developed limited coercive capabilities to extend its defence perimeter away from China’s coastline and to deter the US and its regional allies from acting in a way that the CCP’s leadership deemed inimical to China’s unity. At the same time, China’s leaders engaged in what might be described as diplomatic hedging. Over this period, China engaged in a raft of bilateral economic and technical agreements and opted for a diplomatic strategy of limited multilateralism – seeking membership in associations such as the Asian Regional Forum (ARF) and the ASEAN+3 framework without conceding substantive control over its foreign policies to these multilateral groupings. This strategy of diplomatic enmeshment with the existing regional order in form though not substance served to prevent China’s gradual military buildup from generating alarm among its neighbours, who took few measures to balance China’s rise during this period. Moreover, a gradually expanding military footprint was accompanied by economic largesse, including not devaluing the renminbi during the 1997 Asian financial crisis and signing a number of free trade agreements that were often heavily weighted against China’s economic interests. China’s approach to disputes during this era was to downplay them unless the Party felt it was acting in extremis – for example, following Taiwanese President Lee Teng-hui’s 1995 visit to Washington. This approach – dubbed a ‘calculative strategy’ by Michael Swaine – precluded balancing coalitions on China’s periphery as it consolidated its core. Having consolidated its control over the innermost circles and much of its land-based periphery, the PRC slowly developed into a more assertive force in maritime East Asia while the calculative strategy mixing economic largesse with gradual increases of Chinese military presence was displaced further out into the middle circle of the Western Pacific and Indian Ocean.

25. The ASEAN+3 grouping was a mechanism by which ASEAN as an institution engaged with three key external partners – China, Japan and Korea.
The strategic vision of Chinese leaders is one of a generally peaceful, albeit highly competitive, geopolitical environment in which the possibility of limited ‘local wars under informatized conditions’ remain a possibility.\textsuperscript{29} The geostrategic environment, then, is one in which, according to Chinese strategists, the world will tend towards multipolarity and competition short of outright warfare, which will characterise state interactions. War, if it is fought, will be short and sharp with the early battles proving decisive. The primary aim of Chinese grand strategy is, then, to expand China’s ‘strategic space’ without provoking a conflagration with a rival great power.

The purpose of military action within this context is to build positions of strength sufficient to accomplish limited objectives at a minimal cost and to ideally ensure that conflicts remain localised. Limited localised victories build military prestige and access to pivotal geographical points, which in turn facilitate future attempts to build positions of strength – a virtuous cycle of sorts. A rising power can, Chinese strategists reason, loosen the grip of its opponents on the first island chain in a series of piecemeal political and military offensives within the context of this environment without generating what Otto von Bismarck called the ‘nightmare of coalitions’.\textsuperscript{30}

If achieving incremental alterations to its security environment is the broad aim of Chinese strategy, then it is worth examining the area that it defines as being of security interest. While much is made of the recurring idea of two consecutive island chains in the Chinese strategic lexicon, the significance and meaning of this concept is less frequently discussed. Rather, it is often assumed that the island chains represent the boundaries of China’s strategic vision with the first island delineating the area in which Beijing will pursue its strategic interests, such as disputed maritime claims.\textsuperscript{31} In fact, it is generally more common to see Chinese strategists refer to the first island chain as being a barrier as opposed to delineating the scope of Beijing’s interests. Moreover, military authors tend to treat maritime disputes as being not an end in themselves but a lever with which to exert political influence on countries along the island chain.\textsuperscript{32} As retired Major General Xu Guangyu wrote in a newspaper column, the Philippines and Taiwan are critical links in the island chain while Japan is the centre of gravity.\textsuperscript{33} Loosening the grip of the US on these two links would turn the maritime flank of Japan which would, in turn, make the US’s position on the first island chain untenable. This would enable China to

\textsuperscript{32} For example, see General Zhu Wenquan, ‘How to Win Island War!’, \textit{China Military Online}, 10 August 2015.
become a ‘two-ocean navy’ capable of operating in the Western Pacific and the Indian Ocean.\textsuperscript{34} Freedom from the first island chain would, then, allow China to compete in critical portions of the Indian Ocean – specifically the Bay of Bengal and the Arabian Sea.\textsuperscript{35} It would also allow China to pressure, though not dominate, the US position on the second island chain given that airpower and surface vessels launched from Taiwan would complicate US deployments along this line of control. The 2013 edition of the Science of Military Strategy thus defines a ‘maritime arc of interest’ spanning the Western Pacific and Northern Indian Oceans as the focus of China’s maritime strategy.\textsuperscript{36} The document further stipulates that the ability to operate ‘at depth’ and to carry out ‘defence and holding’ operations beyond the near seas is critical to being able to successfully conduct operations within them. The maritime area of interest Beijing has identified, then, might be subdivided into an inner crescent conforming to the first island chain in the South and East China Seas along with the Taiwan Strait in which China seeks a dominant position and an outer crescent running from the Philippine sea to the northern Indian Ocean in which it seeks to exert what Chinese strategists dub ‘relative control’ under certain circumstances.\textsuperscript{37} This second arc of interest does not conform neatly to the second island chain – with this formation seen as a springboard for US power projection as opposed to a signpost for the PLAN’s long-term development. Power projection assets such as aircraft carriers can play what might be described as a ‘fleet in being’ role in this zone. A weaker fleet can exert a strategic effect on the outcome of a conflict if it acts as a fleet in being, which means abstaining from a decisive clash and harrying a stronger opponent in order to delay their progress. By their very presence, limited power projection forces would complicate the US Navy’s calculations if surged beyond the first island chain. Chinese carrier groups, incapable though they are of directly clashing with their US counterparts, can sortie beyond the first island chain but abstain from a direct clash – compelling the diversion of resources to either fix them or protect SLOCs from them – and can thereby slow the redeployment of globally postured US forces to East Asia. Moreover, under opportune circumstances a limited power projection force can exert local sea control. Beyond this crescent, the PLA can exert no wartime control, but can use long-range precision strike forces positioned at the periphery of the maritime zone of interest to ‘exert pressure on an opponent’s strategic rear’ – the open oceans that sustain the global mobility of a state such as the US.\textsuperscript{38} Moreover, the PLAN can engage in several peacetime missions other than war beyond the twin crescents. In essence, then, the naval framework outlined corresponds with the wider geostrategic vision of successively more critical spheres of interest – with presence in outer spheres abetting the aim of dominating inner ones. The maritime force that this entails, then,


\textsuperscript{35} You Ji, ‘China’s Emerging Indo-Pacific Naval Strategy’, \textit{Asia Policy} (Vol. 22, No. 1, 2016), pp. 11–19.


\textsuperscript{37} \textit{Ibid.}, p. 107.

is one capable of local escalation dominance and limited extra-regional contestation which can, should circumstances on its immediate periphery proceed favourably for China, transition to a force capable of more sustained extra-regional power projection.

The maritime area of interest that China envisions for itself in the medium- to long-term, then, encompasses two of what Nicholas Spykman dubbed Eurasia’s ‘marginal seas’, the offshore waters (littoral areas and immediately adjacent seas) directly adjoining the eastern and southern edges of the Eurasian landmass.39 While it is all too common to discuss the Indo-Pacific in broad terms, the PRC has focused more narrowly on this arc of interconnected offshore waters running from the northern Indian Ocean through the first island chain, which host 15 of the world’s 25 busiest ports and straddle shipping lanes through which half of global container traffic passes.40 It is not coincidental that the maritime component of the Belt and Road Initiative coincides directly with this geostrategic vision.41 Chinese strategists appear to have concluded that building positions of political and military strength along the marginal seas of Eurasia will ensure that the PRC straddles the critical SLOCs and urban conurbations that will define the politics of the Indo-Pacific. Sustained investment in both high-speed railways and ports can ensure that, rather than traversing long distances on the open ocean, east–west trade moves along a combination of short maritime sprints along marginal seas and overland routes. For example, the China–Pakistan Economic Corridor could restrict the maritime component of a given cargo’s journey from the Middle East to a short hop across the Strait of Hormuz. As such, the PLAN’s vision is not an open ocean navy, but rather a country capable of exerting power in the two interconnected marginal seas which will be China’s maritime centre of gravity. Beyond this, the Pacific and the southern Indian Oceans represent an area from which a blue water navy might project power into the marginal seas of Eurasia and which China must, accordingly, deny as opposed to control. Chinese strategists describe this approach as ‘using the land to control the seas, using the seas to contest the oceans’.42

41. The Belt and Road Initiative is a PRC-led project to invest in infrastructure along a land corridor from Central Asia to Europe and a maritime corridor spanning an arc running from the Indo-Pacific to the Mediterranean with emphasis on the former region.
Table 1: China’s Long-Term Maritime Vision

<table>
<thead>
<tr>
<th>Priority</th>
<th>Region</th>
<th>Strategic Objective</th>
<th>Naval Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>First Island Chain</td>
<td>Control</td>
<td>Command of the Sea</td>
</tr>
<tr>
<td>Second</td>
<td>Indian Ocean North of the Equator/Western Pacific</td>
<td>Competitive</td>
<td>Working Control/Disputed Command</td>
</tr>
<tr>
<td>Third</td>
<td>High Seas</td>
<td>Dispute, Protect Second Ring</td>
<td>Sea Denial/Contestation</td>
</tr>
</tbody>
</table>


All of this, however, will have to wait until China can escape the geographical limitations of the first island chain. The northern part of this chain is dominated by the US and Japan, both formidable naval powers. Moreover, the maritime geography of northeast Asia lends itself to sea denial strategies that can keep the PLAN in Chinese waters. The viability of the US–Japan alliance depends, however, on an altogether more geopolitically vulnerable position in the South China Sea and Taiwan, which straddle the routes of egress to the Pacific and Indian Oceans as well as Japan’s SLOCs. A PLA in control of this area could project power into the Western Pacific, menace Japan’s southern holdings and straddle northeast Asia’s maritime SLOCs. This would make a continued US presence in northeast Asia a strategic liability even if the US’s alliances with regional states continued. It is the southwestern direction then that is likely to remain China’s focus going forward while the emphasis of the PLAN in northeast Asia will be to keep US and Japanese assets pinned down. Given the deduction, repeated in documents such as China’s 2015 Defence White Paper, that protracted conflict is unlikely, the breakout from the first island chain will likely be pursued by a policy of coercive diplomacy and issue linkage. This means that rewards and punishments over issues such as maritime rights in the South China Sea and economic relations with China to its neighbours’ broader quiescence with Beijing’s strategic aims are likely to be offered. Efforts to embed Taiwan’s economy more closely with that of the mainland through free trade agreements (FTAs) such as the China–Taiwan Free Trade Agreement (the Economic Cooperation Framework Agreement) coupled with coercion in the form of both economic disincentives and military escalations follow a similar pattern and represent a means of gradually wearing down the resistance of Taiwan’s leaders to the idea of a grand bargain on China’s terms.\[^43\] In each case, however, China remains willing to use force if it believes that a local war can be won quickly or that a state is mounting a critical challenge to its vital national interests. Resolving the question of Taiwan in China’s favour and reorienting the political and economic geography of the South China Sea towards Taiwan would fundamentally alter China’s maritime geography. From a bastion in the South China Sea with a PRC-held Taiwan anchoring its

northern flank, the PLAN could move forces between the Western Pacific and the Indian Ocean more rapidly than the US Navy could. Moreover, freed from concerns over Taiwan, the East Sea Fleet could be combined with its south sea counterpart as part of an independent maritime theatre, the creation of which is highlighted as a medium-term aim. The cumulative effect of a series of territorial revisions would, if achieved without protracted war with the US, be to place the PRC at the epicentre of the first island chain and in an advantageous position in the wider Indo-Pacific. In effect, then, this central position dictates whether China can achieve escalation dominance on its immediate periphery and whether it can be a meaningful competitor in the wider Indo-Pacific. Finlandising the states of the South China Sea and resolving the issue of Taiwan would therefore turn the flank of the US–Japan alliance and enable China to compete more aggressively beyond the first island chain.

The warfighting objective that these deductions produce for China’s forces at sea in the immediate- to medium-term is the ability to conduct ‘near seas active defence’ in the area closest to the country. To the extent that counter-intervention is discussed by Chinese strategists, it is as a sub-component of the concept of fighting and winning a local war on China’s maritime periphery. Counter-intervention capabilities allow China a degree of control over horizontal escalation (in geographical scope) and vertical escalation (in the means that combatants use) – allowing local wars to remain local. To this task, the latest edition of China’s military strategy has added the possibility of needing to conduct ‘far seas protection’. This encompasses a broad spectrum of actions both competitive and cooperative that stop short of war but may include strategic deterrence, signalling and efforts to complicate an opponent’s deployments. Protecting overseas interests, showing the flag or deterring attacks on China’s partners farther afield might be subsumed under this mission which builds the political basis and logistical pre-positioning for the eventual transition to a two-ocean navy. For now, however, missions such as the wartime protection of SLOCs will have to wait. Moreover, given that the limited local wars that the PRC envisions should begin and end before the economic pressure on SLOCs has had a deleterious effect, this mission is likely surplus to the requirement of breaking out of the first island chain. That said, defending SLOCs in peacetime and maintaining a presence along critical SLOCs to complicate any hostile effort to deny them is part of China’s repertoire for the first time, and will likely become more important as the PLAN is freed from its near seas role. This produces an interesting paradox within China’s strategy. The relatively risk-averse approach of incremental revisions on its periphery requires China to exercise tight control over both crises and wars. The chosen means of escalation control encapsulated in the concept of active defence, however, is seizing the strategic initiative early, delivering decisive effects and then unilaterally de-escalating. This concept, with deep roots in China’s strategic culture

44. Xiaosong, Zhanlue Xue [The Science of Military Strategy], p. 110.
47. For a discussion of the paradox of escalation control through seizing the initiative in China’s strategic culture, see Andrew Scobell, China’s Use of Military Force: Beyond the Great Wall and the Long March (Cambridge: Cambridge University Press, 2003).
and understanding of warfighting, effectively entails a highly escalatory and risk-acceptant approach to both crisis and war initiation because of, rather than despite, China’s risk-averse grand strategy – insofar as PLA strategists view dictating the tempo of events as the only means of avoiding runaway escalation and keeping a conflict local. Paradoxically, then, a risk-averse grand strategy necessitates, within the context of China's strategic approach, a series of highly risk-acceptant decisions in individual crises and conflicts.

PLAN strategists, then, have taken heed of Admiral Wolfgang Wegner’s criticism of Tirpitz’s fleet-building plan, that a power projection force makes little sense if one does not possess key geographical choke points that confer access to it. The trajectory of the PLAN in the short- to medium-term, then, is likely to emulate that of the Soviet Union’s Navy during its emergence as a blue water force under the stewardship of Admiral Sergey Gorshkov. A mentor to a number of Chinese Naval officers including Admiral Liu Huaqing, Gorshkov framed the Soviet Union’s maritime interests in a manner strikingly similar to the twin crescent framework. In Gorshkov’s view, Soviet power would radiate outwards from the coastline in a series of concentric layers. The first layer, encompassing the Soviet Union’s offshore waters and marginal seas such as the Norwegian Sea, Barents Sea, Baltic Sea and Black Sea, would be a zone that the Soviet Union would aspire to command to provide safe bastions for its ballistic missile submarines (SSBNs), prevent strikes against the homeland and potentially support land forces in theatres such as Norway. This would be accomplished by a light force of frigates and corvettes backed by ground-based airpower. Beyond these areas, in regions such as the Eastern Mediterranean, longer-range, guided-missile cruisers and ground-based bombers such as the Backfire would attempt to erect a barrier to approaching NATO carrier strike groups. Finally, on the open oceans, Soviet submarines would attempt to contest Western freedom of action but not achieve outright denial. The aim was to complicate the redeployment of forces, prolong reaction times and thus complement operations in the first and second layers of the Soviet maritime system rather than achieve outright command or sea denial.

Today, China’s circumstances are analogous to those of Gorshkov’s Soviet Union in critical ways, but also depart from it in certain areas. Like the Soviet Union, China is obligated to divide its naval forces between geographically dispersed theatres of operation. The Chinese coastline stretches for 14,600 km and includes two seas, the East and South China Seas. This forces the PLAN to divide its forces between three fleets, the North, South and East Sea Fleets at Qingdao, Ningbo and Zhangjiang. Given that transit routes between the bases of the three fleets are straddled by potential rivals such as Japan, Taiwan and US forces based in the northern Philippines, consolidating these forces into a combined fleet in wartime is likely to be difficult. It is thus unlikely, in the authors’ view, that China will in the immediate term generate a combined fleet like that of Imperial Japan which can capitalise on the attrition achieved by shore-based

49. For a discussion of Gorshkov’s naval strategy, see Till, *Seapower*, pp. 151–52.
sea denial capabilities to force a decisive engagement on its own terms.\textsuperscript{51} Instead, China will likely have to achieve local sea command in each sub-component of the first island chain using a portion of its aggregate naval capabilities. Second, like the Soviet Union, China lacks a recent maritime tradition. As a traditionally continental power in which the army has retained pride of place as the primary service, the PLAN has had little experience with the operation of blue water capabilities. Like the Soviet Navy, the PLAN has historically been subordinate to an army-dominated command structure as opposed to an independent service. The late Admiral Liu Huaqing remains, currently, the only PLAN officer to serve on China’s Central Military Commission.

The layered framework Gorshkov developed (and which the PLAN’s leadership has internalised) viewed naval forces as components of fronts emanating outwards from the Soviet Union as opposed to being strike forces meant to operate independently of land-based firepower at long distances. This is not to say that the Soviet model had no role for independent seapower. Gorshkov was keen to stress that in circumstances short of war, Soviet naval forces could act as a more flexible and rapidly deployable tool of foreign policy than land forces. He even entertained the idea that Soviet flotillas could engage Western rivals in limited localised conflicts that erupted as each bloc attempted to support allies and proxies in the Global South. In these limited exchanges, Gorshkov reasoned, the local balance of naval power as opposed to the aggregate naval strength of the belligerents would be decisive. This means that if the Soviets could generate power in theatre more quickly than their more powerful competitors, they could deter or win a local war which might not cascade into a wider conflict.\textsuperscript{52} An illustration of this reasoning was the activity of the Fifth \textit{Eskadera} (squadron) in the eastern Mediterranean during both the Libyan coup and the 1973 Arab–Israeli war. In both cases, the Soviets achieved a local parity of forces sufficient to deter opponents from disrupting their attempts to reinforce local allies.\textsuperscript{53} However, in the event of a full-scale conflict, the fleet was to operate at relatively close distances and in tandem with land-based support as part of an integrated system as opposed to as an independent strike force.

Today, Chinese strategists view naval forces in similar terms. Naval ships are viewed not as strike forces but, rather, as part of a ‘maritime combat system’, including land-based air forces and the cruise and ballistic missiles of the Strategic Rocket Force, which in turn is part of a ‘maritime operating system’ that includes ports, airfields and command and control (C2) nodes.\textsuperscript{54} War at sea, then, is fought not between platforms but systems with the degradation of logistic and

\begin{itemize}
\item \textsuperscript{51} For a discussion of the Japanese model as a basis for understanding China's maritime strategy, see Michael McDevitt, ‘China’s Far Sea’s Navy: The Implications of the “Open Seas Protection” Mission’, Paper for the ‘China as a Maritime Power’ Conference, CNA Arlington, VA, p. 12.
\item \textsuperscript{52} Sergei G Gorshkov, \textit{The Sea Power of the State} (Annapolis, MD: Naval Institute Press, 1979), pp. 122–30.
\end{itemize}
C2 nodes on the land being treated as being at least as important as combat at sea. Ships, therefore, are one means with which the firepower system can generate long-range fires as opposed to being the backbone of operational efforts at sea. Beyond the effective range of ground-based cover, the navy will play a delaying role acting as a fleet in being to hold off follow on forces being redeployed from outside East Asia until a local war has ended. Finally, in the areas beyond this zone, the PLAN can compete in peacetime but will not have a warfighting role. Effectively, both the Soviet and Chinese navies had to grapple with a fundamental problem: how best to overcome the fact that their fragmented fleets were operating on strategically exterior lines. Both countries identified ground-based strike capabilities, in the form of air and missile forces, as a means to overcome this geographical fact; firepower that can be redeployed along interior continental air and land routes can augment each individual fleet and make up for its disadvantage in sea-based firepower. This fits with a broader tendency of continental powers attempting maritime transformations. A survey of naval transformations from Sparta, Persia and Rome to the modern Soviet Union edited by Andrew Erickson and Carnes Lorde concluded that land powers tend to attempt to win maritime competitions by dominating the landmasses that surround the seas.\footnote{Andrew Erickson, Lyle Goldstein and Carnes Lorde (eds), \textit{China Goes to Sea: Maritime Transformation in Comparative Historical Perspective} (Annapolis, MD: Naval institute Press, 2012).} If a land force can be used to conquer or disable the ports and logistical infrastructure on which an opponent’s navy relies, and to provide firepower support from friendly shores, the disadvantages of operating in an unfamiliar environment lessen.

There are some major differences, however, between the Soviet Navy and the modern-day PLAN. First, the primary wartime objective of the Soviet Navy was to play a part in an effort to fight and win a global war that was expected to be nuclear. As such, objectives such as defending SSBNs were critical and the conventional component of the conflict was to be decided on the central front with the navy playing an ancillary role. By contrast, today’s PLA with its emphasis on fighting local wars is unlikely to view preparations to fight and win a nuclear exchange as being a critical mission. In a nuclear war, it was assumed that NATO fleets would batter the successive layers of the Soviet defensive system at sea. This means that the operational aim of the Soviet Navy was to endure and mete out sustained heavy attrition in conflict with these forces. Given that they envision local limited wars, however, PLAN strategists are more concerned with disrupting as opposed to annihilating a rival great power’s forces. While destroying forward-deployed forces in the first island chain may well be a prerequisite to exercising command in this zone, beyond it the PLAN can set itself the less lofty goals of limited attrition, harassment and delay often associated with fleets in being. This stems from the fact that the PLA does not need to destroy follow-on forces being redeployed to a local conflict but hold them off until a combination of mutual economic pain and international pressure coerces both parties to desist, leaving China with whatever gains it has secured at the outset of a conflict. Second, Gorshkov’s navy had the luxury of dominating its immediate environs at the outset of a war and could adopt a purely reactive posture against an adversary attempting to force its way through successive layers of Soviet naval and air-based salvos. By contrast, China faces an environment in which it is ringed by large, potentially hostile air and naval forces, both in the form of forward-deployed US forces and local rivals such as Japan. As such, unlike the Soviets,
Chinese naval strategists will need to seize the initiative early in a campaign if they ascertain that war with one or more major rivals is likely to establish local sea control within the first island chain. This would be impossible if large forward-deployed air and naval forces in the region were unaccounted for. As such, unlike their Soviet counterparts, Chinese strategists place a premium on pre-emption as opposed to reactive defence.56

A final difference between the two states’ circumstances is that China can, unlike the Soviet Union, transform its maritime geography. If China does become a de facto hegemon in an area running from Taiwan to Malacca, it will no longer be compelled to divide its fleets between divergent ends and will therefore possess a closed sea that can act as a bastion and mustering point for the PLAN. Chinese strategists appreciate this, with the science of military strategy stipulating that ‘when circumstances are appropriate, a combined maritime theatre command should be created to unify China’s fleets’.57 Should the first island chain rupture, the PLAN would be able to move quicker than its US counterpart between the Indian and Pacific Oceans, meaning that a combined fleet, even if smaller than US and allied fleets, could achieve local command sufficient for specific competitive ends in many circumstances. The maturity of land-based reconnaissance strike capabilities and the increasing effectiveness of data processing and distribution across a system make it conceivable that prompt strike capabilities based in China can in time support fleets outside the Western Pacific. Unlike the Soviet Navy, whose ground-based airpower could strike opponents at a maximum of 2,000 km – the operating range of a Backfire bomber – and which did not have the ability to coordinate salvos from across their services, the PLAN could be supported in operations as far afield as the Arabian Sea by long-range strike capabilities, such as the DF-26 ballistic missile which can operate at 4,000-km ranges if adequate space- and air-based targeting data is provided.58 Coordination between land- and sea-based assets is therefore likely to become at least technically feasible, making it possible to generate simultaneous salvos from multiple sources. In time, then, the PLA can aspire to achieve simultaneous effects across the three concentric circles that define its maritime strategy rather than sequentially engaging long-, medium- and short-range assets in the way that the Soviets needed to. This tendency towards the integration of land and sea capabilities into a single reconnaissance strike complex was put forward by Gorshkov and reflected a wider interest in reconnaissance strike complexes and the revolution in military affairs that they heralded within the Soviet Union.59 If the PLAN does dominate the South China Sea, it can be redeployed between the Western Pacific and Indian Ocean more rapidly than the US Navy. PLA authors explicitly discuss this prospect, arguing that an independent maritime

56. For a discussion of Chinese views on pre-emption, see Roger Cliff et al., Entering the Dragon’s Lair: Chinese Antiaccess Strategies and Their Implications for the United States (Santa Monica, CA: RAND, 2007), pp. 29–35.
theatre command should be created in the medium- to long-term and that ‘distant seas joint operations’ should be added to the PLA’s maritime mission set.60

As such, the Chinese maritime strategy represents an attempt to adapt the Soviet framework as a transitional step to a force that can eventually leverage both the centrality of the Southeast Asian security complex and the maturing of what Gorshkov and Field Marshal Nikolai Ogarkov, the Soviet chief of staff, called reconnaissance strike complexes. If this is indeed the case, the PLAN will likely develop into a three-tiered force. The first tier, which is close to completion, is likely to be comprised of flotillas of Guided Missile Frigates (FFGs), corvettes and diesel-electric submarines, all of which are equipped with Anti-Ship Cruise Missiles (ASCMs) and in some cases Land Attack Cruise Missiles (LACMs). In wartime, this fleet may well be capable of Anti-Submarine Warfare (ASW), Anti-Surface Warfare (ASuW) and blockading missions within the first island chain. Despite not being individually optimised for high-intensity combat, these relatively light vessels will benefit from the support of ground-based airpower, long-range ballistic and cruise missile salvos and, in the case of submarines, shallow littoral waters. They are intended to operate as part of a theatre-wide system in which the aggregate power of land-, sea- and air-based precision strikes is more salient than the capabilities of particular platforms. These vessels are sufficiently numerous to support China's coastguard and People’s Armed Forces Maritime Militia (PAAMF) in peacetime grey zone competitions.61 Like China’s use of para-naval forces backed by the PLAN in the 2012 Scarborough shoals crisis and the 2014 deployment of the Hai Yang Shi You oil rig off the disputed Paracels Islands, peacetime sea control is a mission at least as important as high-end warfighting, and one which a few high-end vessels are not particularly well placed to execute.62 Thus, the littoral-oriented near-seas fleet might be described as a sea control force during both competition and full-scale conflict in the first island chain.

Beyond the first island chain, consistent with its concept of ‘forward-edge defence’, which entails pushing the culminating point of operations beyond the inner crescent encompassing the near seas, China is likely to deploy a smaller, higher-end ‘anti-navy’ built around a limited force of carriers, guided missile cruisers and destroyers.63 This will amount to an emulation of the Soviet Navy, which based its ability to operate beyond its immediate marginal seas on missile cruisers such as the Kashin and Kirov classes which could hold carriers at risk, along with air defence destroyers and Vertical Short Takeoff and Landing carriers which provided limited air cover and

---

61. Grey zone competitions entail the coercive use of military and civilian assets in a manner that stops short of a provocation that would amount to open warfare. See Andrew Erickson and Ryan Martinson (eds), China’s Maritime Gray Zone Operations (Annapolis, MD: Naval Institute Press, 2018).
63. Forward-edge defence entails pushing the culminating point of military operations as far as possible from China by operating at the outer edge of China’s near seas to project power into the second strategic crescent. Xiaosong, Zhanlue Xue [The Science of Military Strategy], pp. 105, 110.
The PLAN is generating precisely such a force with investments in recent years shifting to the production of Destroyers (DDGs) such as the Type 052C/D and heavy cruisers, including the 13,000-tonne Type 055 which has 128 vertical launch cells. In a surface action group, these vessels, all of which carry the HHQ-9 theatre air defence system, could provide cover for both themselves and less well-equipped vessels such as the Jiangkai frigate to operate at distance. Indeed, the 400-km YJ-18 ASCM on these vessels allows them to hold US carrier groups at risk at significant ranges. Aircraft carriers such as the Type 001 and Type 001A, lighter than their US counterparts, will likely act as support vessels for surface-action groups built around missile-carrying ships as opposed to strike assets — although the heavier Type 002 may add a limited strike capability to China’s repertoire. It is likely that China’s emerging carrier force will in the foreseeable future play a supporting role comparable to that of the Soviet-era vessels on which they were based, providing air and ASW cover to surface-action groups operating at distance from ground-based support as opposed to being the centrepiece of the navy’s strike capabilities in the way that the US Navy’s carrier force is. Like their Soviet counterparts, the PLAN’s surface and subsurface forces will act as floating Transportable Erectable Launchers (TELs) for ASuW missiles in conjunction with shore-based support from long-range strike assets, such as the H-6 bomber and the DF-21D ASBM.

Finally, at very long distances, the PLAN is likely to rely on a force of SSNs and long-range precision strike assets such as the DF-26 to complicate an opponent’s freedom of manoeuvre beyond the twin crescents that China defines as the primary locus of its interests emulating the role Soviet SSNs played on the open oceans.

The overarching aim of this three-tiered force is to either deter or impede outside intervention in localised conflicts around China’s periphery. Should these conflicts be resolved in China’s favour, however, the PRC would find itself in effective control of a closed sea with Taiwan at one end and Malacca at the other from which Chinese surface forces could muster as a combined force and project power into the Indian Ocean and Western Pacific on a more sustained basis. The tools that enable the localisation of a conflict within the first island chain, such as light carriers and surface-action groups, could then become the basis for sustained power projection beyond it. The Gorshkov model, then, is a transitional step on the way to the ability to conduct joint operations on two oceans, thereby transforming the outer ring from an area to be denied to one in which limited command can be sought. The increasing reach of ground-based precision strike assets such as hypersonic glide vehicles and the maturing of reconnaissance strike capabilities will allow this open ocean fleet support from the mainland and push the arc of denial further outwards to the central Pacific and southern Indian Oceans.

In the near- to medium-term, then, it is likely that the PLAN will opt for what Admiral Zumwalt called a ‘high/low’ mix. A light force of relatively cheap vessels meant to act as part of an

---


integrated theatre front in the near seas will be combined with a smaller higher-end fleet in being capable of operating beyond these seas. In the longer term, a mature precision strike regime, coupled with access to critical choke points, could enable theatre front operations beyond the first island chain, allowing the PLA to transition from the maritime objective of denial to one of working control/disputed command in the Indian Ocean and central Pacific.
I. The Foundations of Chinese Strategic Thought: A (Brief) Theoretical Primer

Although Mahan furnished China with the logic and rationale for its maritime transformation, the grammar of Chinese seapower reflects a decidedly continentalist intellectual legacy. In particular, Chinese naval strategists’ understanding of how seapower can be forged and wielded reflects a broader pattern of thinking regarding securing limited relative command sufficient to accomplish a specific objective, something for which aggregate preponderance – that is, superiority over a rival in total military assets – is not a necessity. Rather, generating local superiority to win quickly before de-escalating is the primary object of China’s local wars framework. This concept represents a logical continuation of China’s post-Second World War concept of active defence – seizing the operational initiative to contain and localise a conflict. As Andrew Scobell has illustrated, this framework has broadly guided China’s use of force consistently since the end of the war. Indeed, as a relatively weak power with extended lines of supply and multiple adversaries, placing a premium on short, sharp wars made sense for China. This policy has coexisted with others – such as China’s emphasis on drawing an opponent in deep and on positional warfare on the Soviet border under Deng Xiaopeng and Mao Zedong respectively – but this is how China mainly conceives wars short of existential global conflicts. The primary emphasis of Chinese strategy, then, is best described by the work of Julian Corbett. Unlike his contemporary, Mahan, who emphasised command of the sea seized through decisive battle, Corbett held that command was a relative concept. A state could not command the seas; rather it could establish local command sufficient to achieve a given objective. As such, hermetically sealing a battlefield from external support and decisively exploiting local advantages were key. A case in point for Corbett was the Russo–Japanese War in which Japan exploited the stronger but divided Russian Navy’s extended lines of control by seizing the initiative while it had a local advantage in East Asian waters. It also used its alliance with Britain to slow Russia’s redeployment of the Baltic Fleet by ensuring it lacked access to logistical resupply facilities. This paper is not arguing that China’s leaders’ strategic concepts are derived from a reading of Corbett, or that every aspect of his theories is applicable to China – Corbett was, after all, writing for the audience of a maritime hegemon. Rather, what the

66. See, for example, Yoshihara and Holmes, Red Star Over the Pacific, pp. 14–30.
67. Scobell, China’s Use of Military Force.
68. Fravel, Active Defence, pp. 72–139.
authors argue is that his concept of relative command is a useful existing maritime framework with which foreign leaders can conceptualise the emphasis on limited war inherent in the local war framework.

The Soviet addition to this framework was the notion of an eventual integration between land- and sea-based forces into a single theatre-wide front in which the traditional end of local command would be achieved by a cross-service effort. Gorshkov noted in his analysis of the Battle of Leyte Gulf that combat actions by a fleet to secure and use local command of the sea were merely part of a maritime campaign and constituted a subcomponent of a wider operational approach that included actions taken by forces in the air and on land. At Leyte, for example, the Imperial Japanese Navy (IJN) hoped that the aggregate effect of bombing by land-based airpower and attacks by its combined fleet would deny the US command of the sea and secure it for Japan. This trend, Gorshkov opined, would only grow in the missile age as ground-based, long-range precision strike capabilities expanded in reach and accuracy. This fits in with the wider vision of the future of warfare outlined by Field Marshal Nikolai Ogarkov in which the depth at which new precision strike capabilities could operate and the speed with which fire from multiple sources could vector in on a target would in due time erode cross-service differences, creating multiservice theatre-wide fronts. However, in line with Corbett, Gorshkov urged the Soviet Union to appreciate that states are not in a state of total war but politically constrained competition most of the time. As such, a blue water fleet could be useful for a range of tasks related to using, rather than seizing, command of the sea, such as dissuading the US from confronting a Soviet proxy or complicating the peacetime deployments of US forces. To do so, it did not need to be globally superior, but globally competitive. Independent seapower was a means to compete and delay, while theatre-spanning land–sea fronts were the basis for high-end warfighting.

Today, China’s strategic community appears to have blended Gorshkov’s vision with their own particular situation. In line with Gorshkov, Chinese thinkers appear to recognise both the importance of land–sea integration in a warfighting context and the political utility of a limited power projection capability – even if such a force cannot engage in high-end warfighting at distance. In addition, like Gorshkov’s fleet, the warfighting concepts that guide the PLAN are based on land–sea integration, with assets dedicated to power projection in peacetime serving as the forward edge of a layered defence in wartime.

Two critical differences are worth reiterating, however. First, the notion that wars will likely be local as opposed to global, the absence of a crucial land front and faith in the notion that initiative is the basis for escalation control all run counter to the sort of reactive posture that Gorshkov’s navy envisioned. Chinese doctrinal publications repeatedly stress the importance of concepts such as ‘war control’ and ‘effective control’, which entail actions to ensure that conflicts do not escalate into unlimited wars. Therefore, efforts to seal off the locus of combat,

73. Xiaosong, Zhanlue Xue [The Science of Military Strategy].
and delay and disrupt the deployment of external forces, are critical to achieving the aim in a ‘local war’ in a way that does not make any victory so costly as to be Pyrrhic. The primary purpose of strategy vis-à-vis a great power, then, is to avoid war with a rival great power. Failing this, the aim of warfighting is to achieve operational paralysis and attrition sufficient to enable the exercise of local maritime command before de-escalation occurs. In effect, then, China’s model is structurally similar to Gorshkov’s, but is more dynamic. Rather than setting up a layered defence and waiting for an opponent to batter it down, the PLA must actively take the initiative in the first ring of its operational area even as it plays a holding game beyond. Paradoxically, then, belief in the capacity for escalation control can lead the PLA to greater adventurism than Gorshkov envisioned. Second, unlike the Soviet Union, the PRC can transform its geography by seizing control of the South China Sea and the PLAN can in theory project land-based strike assets, such as the DF-26, well beyond its immediate environs. This raises the prospect of a power projection fleet backed by long-range strike assets capable of actually seizing command at long distances, which Gorshkov’s Soviet Navy could never envision doing.

That said, the development of China’s maritime capabilities, particularly at the operational level, reflects the legacy of a continentalist Soviet model. In line with Soviet operational thought, Chinese doctrinal writings define campaign types, such as island blockades and joint firepower campaigns, in functional rather than service-specific terms, stressing that operations groups from across the PLA will perform most campaigns. For example, an island blockade campaign involving Taiwan would likely involve efforts by the People’s Liberation Army Air Force (PLAAF) and Strategic Rocket Force to shut Taiwan’s ports, coupled with a PLAN-led mining campaign. Chinese defence manuals, such as the Lectures on the Science of Joint Campaigns, identify the defence of maritime interests as a task to be accomplished by what its authors call joint firepower campaigns. The purpose of these campaigns is to coordinate precision strike capabilities from multiple sources dispersed across the land, sea and air to disintegrate (disrupt communications), and subsequently degrade (physically destroy), an opponent’s systems. The authors note that information nodes and logistical centres are particularly vulnerable points of failure, arguing that the emphasis of campaigns should be to

sever and cripple the interconnection of the enemy’s operational system, command system, weapon system, support system, etc., and the internal links within each system. As the first edition of the Science of Military Strategy notes, destroying their relationship and their coordination would result in the enemy carrying out isolated instead of concerted campaign operations. This would help achieve the objective of degrading the enemy’s overall combat capabilities.

It is within this context that authors view the capabilities of the PLAN. While authors are quick to point out the limitations of many of the PLAN’s lighter vessels in operations away from Chinese shores due to their lack of organic air cover, this is less of a limitation if one assumes that attacking air forces have had their runways cratered and logistics disrupted by land-based cruise and ballistic missile salvos and their ISR nodes severed. In effect, a force comprised of relatively small surface vessels can exercise sea control further afield if it is part of a wider system. Similarly, the relatively low endurance of a fleet of conventional submarines can still prove highly effective in a number of roles, including minelaying and land attack as well as more traditional hunter-killer roles if operating relatively close to friendly shores.

The emphasis on near-seas operations enabled by cross-service integration extends to operations short of war. Military publications, such as the latest edition of *The Science of Military Strategy*, are at pains to stress the limitations of China’s capacity for power projection and the duality of the present environment in which ensuring that China fights only limited wars is critical. To ensure that wars remain limited, authors stress the idea of effective control – a series of actions short of war conducive to ‘creating a strategic situation advantageous for internal stability and external expansion and a long period of order and security’. Given that PLA authors are keen to stress that a conflict that escalates either horizontally or vertically could be disastrous, shaping the pre-conflict environment and seeking war on China’s own terms while ensuring that unplanned crises do not either escalate to war or lead to detrimental political developments are identified as key cross-service priorities.

In peacetime, Chinese authors suggest the coordination of assets across domains and government to shape a campaign environment. For example, the authors of the *Science of Second Artillery Campaigns* stress the importance of joint missile operations to ‘contain a conflict’ and propose that firing ballistic missiles near, but not directly at, an approaching task force might, in tandem with the deployment of PLAN vessels, signal China’s credibility. Alternatively, missile ‘exercises’ along the lines of those that the PLA conducted around Taiwan during the 1996 Taiwan Straits crisis might be combined with an announcement that China has mined the approaches to a conflict area to create an exclusion zone. Chinese authors also stress the use of a carrot and stick approach, such as the provision of economic incentives to abet diplomatic efforts to degrade alliances, with long-range precision strike capabilities signposted as critical to the military side of this effort. Similarly, China is acutely aware of the value of peacetime sea control as distinguished from command won through battle. The PLAN can exercise control of the seas vis-à-vis the use of civilian vessels and ships of the PAAMF backed by the navy.

78. Ibid., p. 100.
In the event of all-out conflict, PLA authors identify a range of activities such as joint firepower blockades and joint firepower strikes that entail collectively employing land and maritime assets to conduct a campaign at sea. A joint firepower blockade, for example, might involve ballistic and cruise missile strikes on a blockaded entity’s ports in tandem with efforts to enforce a quarantine by ships at sea. The 1999 edition of *The Science of Military Strategy* describes an offensive campaign undertaken to impose a sea or aerial blockade on an enemy entrenched on islands. A large-scale island blockade campaign is often under the unified command of a combined campaign commander and commanding organ, with naval, air force, and Second Artillery campaign force corps as the main campaign force, supported by army, armed police units, and militias. A small-scale blockade campaign is, in general, undertaken by a naval campaign corps in coordination with other services and arms.\(^{81}\)

Joint firepower campaigns similarly envision an opponent’s forces as a system of systems and require the PLA to conduct operations across the breadth of an opposing system using a variety of tools, including air strikes, ballistic missile salvos, minelaying by both civilian and military vessels and ASuW attacks by ships and submarines at sea. As the authors of the *Science of Campaigns* write, a joint operation requires the PLA to ‘seize command of the air, sea, and electromagnetic fields as the centrepiece; grasping the key links; striking at the enemy's vital points; and collectively and flexibly employing forces and weapons [to] gain a better advantage to accomplish campaign objectives’.\(^{82}\) Because naval forces are not the only tool used in this context, they need not be comparable in sophistication to their opposition. The weaknesses of vessels such as guided missile frigates, such as their lack of theatre air defence, are obviated if they are operating in a context where precision strikes, electromagnetic and cyber attacks have disrupted an opponent’s system of bases and C2 nodes and airpower from China’s shores is offering cover and support.

Further afield, more sophisticated platforms with theatre air-defence capabilities are identified as a requirement. The latest edition of *The Science of Military Strategy* has, echoing China’s 2015 defence white paper, added ‘forward-edge defence’ to the strategic lexicon.\(^{83}\) Forward-edge defence presumes that the culminating point of military operations should be moved outwards beyond the near seas. While Chinese strategists do not envision being able to dominate the waters beyond the first island chain, they believe that contesting these waters can reduce the pressure on forces within the first island chain by disrupting or delaying an opponent’s

\[^{81}\text{Wenrong and Wenmu, } Zhanlue Xue [The Science of Military Strategy], p. 411. Quote is author’s translation.}\]
deployments in the second defensive circle. As the 2013 edition of The Science of Military Strategy notes, the superiority of the US outside the first island chain means that

the difficulty of using ‘our land to defend our land’ and ‘using the near seas to defend the near seas’ has greatly increased, and we are even perhaps unable to ensure victory. Therefore, we must consider expanding the scope of warfare for the implementation of outwardly oriented defensive operations.

Thus, China must contemplate strategic attacks beyond the near seas to enable ‘defence’ within them. While doctrinal publications offer scant clues about the specific instruments that will be used for forward-edge defence, internal publications by PLAN authors offer some insight. One article by two PLAN officers in the internal publication Naval Affairs contends that in wartime aircraft carriers and surface action groups can break out into the ‘middle defensive zone’ (which they define as the western edge of the Philippine Sea and northwestern Indian Ocean) to carry out intermittent harassment and raiding roles against a follow-on force approaching East Asia.

Light aircraft such as the J-15 Shenyang may be poor strike assets but can pose a threat to ships if equipped with ASCMs, while newer DDGs armed with the 540-km YJ-18 ASCM could force opposing carrier battle groups to operate at distance or divert assets to containing them, thereby reducing their impact on events in the first island chain. In the foreseeable future, then, aircraft carriers and DDGs are likely to operate just beyond the inner defensive crescent at the western edges of the Philippine Sea and the Indian Ocean. Carrier-launched aircraft such as the J-15 with a combat radius of 800 km and ship-launched ASCMs such as the YJ-18 can put substantial portions of the outer crescent at risk from these positions, doing so without the complex systems integration needed for a land-based asset such as the DF-21D. If the DF-21D should become operationally effective, however, the risk it poses to carriers might enable more ambitious forays by surface action groups comprised of higher-end vessels.

This is in marked comparison with the role envisioned by Gorshkov for his long-range surface action groups of guided missile cruisers and destroyers backed by escort carriers. A caveat, however, is that unlike Gorshkov’s surface forces, the PLAN’s surface action groups operating beyond the first island chain are not the first line of defence meant to fight until the end, but rather a ‘far seas fleet in being’ – that is, a means to delay an opponent’s follow-on forces by their very presence until a suitable resolution has been achieved in the first island chain.


86. Ibid., p. 101.

Finally, the PLAN envisions a range of far seas protection operations for itself. Protection, as opposed to defence, entails actions short of war, but not precluding actions that might have a strategic effect particularly if taken in tandem with a local ally – for example, in the case of a hypothetical Indo–Pakistani crisis in which a PLAN surface action group was deployed to the western Indian Ocean. Irrespective of the local balance of power, the need to detach forces to monitor and shadow the PLAN squadron would have an impact on, and complicate, Indian naval planning concerning Pakistan. Alternatively, for example, PLAN squadrons could shadow US carrier groups further afield much as Soviet surface action groups did. In due time, a maturing space-based reconnaissance capability could extend the cover of ground-based precision strike capabilities to Chinese forces further afield, enabling missions more ambitious than mere disputation of a stronger party’s sea control. Additionally, the PLAN can secure Chinese commercial interests in the context of missions other than war, such as counter-piracy and evacuation missions, for which it has slowly been building the capacity in regions such as the Gulf of Aden. Increasing China’s footprint in far-flung regions as part of counter-piracy missions serves two ends: securing Chinese commercial interests; and socialising actors in these regions to accept China as a security provider. This form of soft naval diplomacy, highlighted by figures such as Admiral Wu Shengli, the PLAN commander 2006–17, as a critical far seas mission, is an integral part of building seapower as distinct from mere naval power. This is in line with China’s strategy on its immediate periphery during the 1990s and early 2000s, when it provided public goods and maintained a low political footprint to prevent hostile regional reactions in areas where China operated from a position of relative weakness.

Like the Soviet fleet under Gorshkov, then, Chinese strategists appear to have adapted Corbett’s logic to their own particular circumstances. As a land-based power with a fragmented maritime geography and a potentially hostile naval superpower in its immediate vicinity, China, like the Soviet Union, has recognised the futility of a capital ship-intensive buildup on the lines of Tirpitz’s effort to unseat the Royal Navy. However, like Gorshkov, Chinese strategists have recognised that one can achieve Mahanian ends with a continental power’s toolkit. A littoral combat fleet, combined with shore-based firepower and an extensive picket line of civilian and paramilitary auxiliaries, can obtain command of China’s near seas. Further afield, a far seas fleet built to dispute rather than control the sea can, in tandem with shore-based assets, achieve what Geoffrey Till described as ‘disputed command’, in which neither side dominates the seas absolutely. This would prevent the area beyond the second island chain from being used as a springboard for theatre entry into China’s near seas. A more useful framework than A2AD, then, might be far seas denial to enable local command. This, and the resolution of maritime contests along China’s periphery, would transform China’s maritime geography, allowing the combination of its South and East Sea Fleets and enabling more sustained competition further afield.

89. Martinson, ‘China’s Far Seas Naval Operations’.
Maritime Power in the Context of Chinese Grand Strategy

Contemporary debates regarding China’s overarching strategic vision can be roughly subdivided into three views:

- China as an insecure party state with the primary objective of regime security.
- China as a selective revisionist with specific territorial aims (such as Taiwan), which it must secure in order to assuage nationalistic sentiment.
- China as an aspiring regional and extra-regional hegemon.\(^\text{91}\)

The authors argue that China’s overarching vision in many ways blurs the distinctions between security and an expansive foreign policy. To the extent that the regime and Han core are to be secured against all contingencies, the PRC needs a position of relative dominance on its maritime periphery. The lack of this position does not necessarily condemn the regime to instability, but it leaves it open to contingencies such as the formation of hostile coalitions that depend as much on other states’ policies as anything China might do. This in turn necessitates at least a competitive position in the concentric circle beyond East Asia. External actors intervening in the first island chain require secure and uncontested staging positions in the regions immediately beyond, such as the Western Pacific and the Indian Ocean. Moreover, superior powers beyond China’s immediate vicinity could use their strengths in other ways that may harm China’s interests, for example by menacing its SLOCs in competition short of war or threatening its growing overseas economic infrastructure. Therefore, to accomplish local dominance, the PRC needs limited competitive presence beyond the first island chain. As opposed to being either an aspiring global superpower or a reactive defensive power, then, a more appropriate description of the PRC’s maritime strategy at present might be regional dominance and extra-regional power balancing. This being said, if the PRC achieves regional dominance in the South China Sea–Taiwan complex, its maritime geography will be transformed much as that of the US was after the Caribbean fell under its de facto control and the Panama Canal was built, enabling a more ambitious posture further out. As such, the concentric rings framework outlined above should be seen as a dynamic rather than a static one. China is a calculating revisionist state as opposed to a state aspiring to either global hegemony or mere party survival. However, its ambitions are not necessarily restricted to territorial disputes with historical salience to the Chinese people.

The political historian Avery Goldstein once described China’s grand strategy in the immediate post-Cold War era as being effectively ‘Bismarckian’ in nature. Otto von Bismarck, cognisant of the possibility that revising the balance of power in Central Europe could produce a coalition of

rival powers against him, was careful to leverage potential rivals’ mutual antagonisms to ensure
the breathing space necessary for carefully calibrated acts of revisionism. Mutual reassurance
treaties with states such as Austria and Russia, which were at loggerheads with each other,
coupled with temporary appeasement of future rivals such as France meant that Prussia’s
might was concentrated against isolated adversaries in successive wars. The critical features
of Bismarck’s grand strategy were limiting the objectives of successive individual conflicts to
obscure what their effect on the European balance of power would be in aggregate, the isolation
of rivals, and the use of decisive overwhelming force to conclude conflicts before the window
of political opportunity shut.92

In pursuing this grand strategy along its maritime periphery, China has been similarly careful
to use a carrot and stick approach. The PRC has also applied a differentiated framework to
define and pursue interests in each concentric ring, expanding its interests in outer rings
after consolidating inner ones. Thus, throughout the 1990s, during which China was grappling
with the twin challenges of maintaining regime legitimacy and navigating the major internal
reforms that followed Deng Xiaoping’s southern tour and its accession to the World Trade
Organization, its aim on its immediate periphery was avoiding instability.93 China thus pursued
a largely emollient policy of accommodation towards its maritime neighbours. During this
period, the PRC emphasised efforts to embed China in regional frameworks such as the ARF and
the ASEAN+3 framework. To this end, China made concessions in free trade agreements and
abstained from devaluing its currency during the 1997 Asian financial crisis.94 In lockstep with
this position, China largely left territorial disputes dormant. However, China did demonstrate its
capacity to act as a regional spoiler when its core interests were being encroached. The most
obvious case of this behaviour was missile testing off Taiwan in 1996 following President Lee
Teng-hui’s visit to the US and China’s subsequent use of economic coercion against politically
important constituencies during Lee’s re-election bid.95 Similarly, the dispute over the Senkaku
Islands, which China had ignored during the early 1990s, with the Party even going so far as
to suppress protests to maintain good relations with Japan, was allowed to reignite following
the 1997 extension of US–Japan defence arrangements to encompass Taiwan.96 Beyond its
immediate periphery, China pursued a foreign policy largely focused on economic matters, with
the diplomatic isolation of Taiwan being the major exception. As such, China’s grand strategy

92. Avery Goldstein, Rising to the Challenge: China’s Grand Strategy and International Security
93. Deng Xiaoping’s tour of China’s southern provinces precipitated a push by Deng and the
Communist Party leadership to accelerate the pace of China’s economic opening. See Suisheng
Zhao, ‘Deng Xiaoping’s Southern Tour: Elite Politics in Post-Tiananmen China’, Asian Survey
94. Goldstein, Meeting China Halfway, pp. 113–36; Hughes, ‘Nationalism and Multilateralism in
Chinese Foreign Policy’, pp. 119–35.
95. Robert Ross, ‘The 1995–96 Taiwan Strait Confrontation: Coercion, Credibility, and the Use of
Institution Press, 2010), pp. 23–41.
during this period amounted to an attempt to ease states’ fears regarding its rise without conceding on a narrowly delineated set of core interests such as Taiwan’s and China’s internal politics. The maritime force needed to execute this strategy in China’s periphery was a minimal deterrent force capable of protecting its coasts and disrupting East Asian security, but not really challenging for regional dominance. Effectively, such a force could defend mainland China and act as a source of influence in maritime East Asia. Elsewhere, China maintained no footprint.

From 2008 onwards, China has applied this strategy to each of its security rings moving outwards. Along its maritime periphery, China has gradually expanded its core interests to include much of the South China Sea and has taken a drastically more assertive stance with regards to disputes such as the Senkaku Islands, with the 2013 creation of an Air Defence Identification Zone (ADIZ) around the islands being a case in point. With the overarching aim of socialising neighbouring states to accommodate China’s rise, using a carrot and stick approach, the balance has shifted from an almost exclusive emphasis on the former (albeit with exceptions) to a more mixed approach. In tandem, China’s regionally deployable force has expanded both on land and at sea in a manner that has enabled it to act as a serious contender for dominance in key areas such as the South China Sea. Meanwhile, the combination of persuasion and a limited deterrent force capable of securing key interests has been deployed beyond the East Asian periphery. The economic prong of this approach, the Belt and Road Initiative, is in many ways underpinned by the logic of China’s approach to Southeast Asia in the 1990s: that is, that economic largesse would serve to both dampen fears of China’s rise and secure political partners. In military terms, the development of a limited capacity for power projection by both naval assets such as the Liaoning and the Type-055 and land-based assets such as the DF-26 cannot give China superiority beyond East Asia, but it can act as a minimal deterrent force to protect Beijing’s extra-regional interests and as the first layer of defence in a strategic framework along the lines of the Gorshkov model. Should China succeed in consolidating its position in the second ring, however, the aims of this force and its ambitions may become more substantial, not least because China would have the capacity to act as a two-ocean navy backed by a historically unprecedented level of ground-based firepower.

At present, however, the primary aim of Chinese maritime forces is a progressive Finlandisation of the Southeast Asia–Taiwan geographical complex. Calibrated escalations such as the 2012 occupation of the disputed Scarborough shoals by civilian vessels backed by the PLAN and the subsequent blockade of Philippine garrisons in the South China Sea by paramilitary vessels have been combined with continued efforts to purchase the quiescence of key regional actors such as Cambodia. Following the extension of a zero-tariff agricultural loan, Cambodia used its position as ASEAN chair to nix any discussion of the Scarborough shoals issue. Similarly, as Y H Lim notes, free trade agreements such as the China–ASEAN and China–Taiwan FTAs often involve asymmetrical economic concessions to China’s partners. Viewed within the context of

a grand strategy of incremental change, however, these concessions are a vital means towards dampening a regional response to territorial revisionism.

Importantly, territorial revisionism along China’s maritime periphery is not an end in and of itself meant to resolve specific disputes in China’s favour. Rather, the disputes are at their most useful when China keeps them alive, insofar as they can be re-ignited when a given state pursues a broader policy that Beijing believes runs counter to its interests. For example, following the election of Philippine President Roderigo Duterte, reports suggested Chinese para-naval and civilian vessels allowed Philippine fishermen access to the Scarborough shoals. The shoals, then, were at their most useful as a lever with which to underscore China’s claim to being the sole claimant to most of the South China Sea and to encourage a broader shift in the Philippines’ strategic orientation as opposed to being an end in themselves. Similarly, a survey of incidents involving the Senkakus illustrated that the rate of Chinese incursions increased rapidly during periods where Japan was seen as pursuing a wider policy that ran counter to Beijing’s interests while the issue was allowed to remain dormant in other periods. The Senkakus, then, represent a useful ‘frozen conflict’ as opposed to a traditional territorial dispute in which the territory at stake is valued for its own intrinsic characteristics. As such, China’s strategy with regards to territorial claims is one of issue linkage: the claims are less important in and of themselves than as a lever to coerce a wider policy shift within the target country. Additionally, some disputed territories have acted as stepping stones to a wider regional military presence. The militarisation of South China Sea islands has, for example, created an ISR network and an organic air and missile force there that could augment the activities of a surface action group. Moreover, the anti-ship missiles and aircraft that these islands host allow the PLA escalation dominance in localised clashes short of war with regional powers, greatly complicating efforts to confront China’s civilian and para-naval vessels. Perhaps most crucially, however, the very presence of these islands frames a substantial Chinese military role in the region as a fait accompli in the eyes of the region’s leaders. This would be a political effort that outweighs its immediate military utility which would be questionable in a conflict involving the US. This has led analysts such as Andrew Chubb to conclude that stirrings of popular indignation are strategically cultivated or downplayed and are likely not organic outpourings of nationalistic sentiment. While territorial disputes can serve the role of Party affirmation and feed into the narrative of a century of national humiliation, the fact that the Party has proven adept at either inflaming or downplaying specific disputes suggests that they are not merely instruments of domestic politics. Rather, the persistence of China’s territorial disputes at sea and the weight of the Taiwan issue reflect, to a degree, China’s maritime approach and not a cause. It is thus unlikely that the PRC’s strategy is one of selective revisionism driven by atavistic nationalism. Rather, nationalism has been used to give impetus to a more expansive maritime transformation.

While periodically igniting the Senkaku issue has been viewed as a means of pinning Japan’s forces and attentions to northeast Asia, the offensive thrust of this strategy has been felt in the South China Sea. As has been noted by senior figures, such as Colonel Liang Fang, control of the South China Sea not only allows China an offshore bastion within which its ships can safely congregate, but also a springboard from which the PLAN can use multiple avenues of ingress, such as the Lombok Strait, the Kra Isthmus and Malacca, while denying them to an opposing navy. As PLA authors are quick to note, this would allow the PLAN’s South Sea Fleet to operate on interior lines and allow assets based in the South China Sea, such as ASCM-equipped surface vessels and submarines, to extend their reach beyond the first island chain.

Given that the YJ-83, YJ-62 and YJ-18 ASCMs on China’s surface and subsurface vessels operate at 130–540-km ranges, secure routes of egress into the second island chain are critical to disrupting follow-on forces in a local war. Beyond-the-horizon radar on locations such as Scarborough shoals would substantially improve the ability to provide track quality data to the crews of DF-21D and DF-26 launchers. This is one of the reasons that the militarisation of the shoals was seen as a red line that would amount to a *casus belli* in the US.

Beyond East Asia, China’s maritime strategy has been relatively circumspect, but it is gradually approaching the mixture of carrot and stick applied on China’s immediate periphery in the 1990s. While the creation of a PLA facility in Djibouti and PLAN counter-piracy operations in regions such as Aden have substantially expanded China’s maritime reach, these facilities still amount to ‘places’ as opposed to bases. They are primarily dual-use civilian facilities that can service ships in peacetime but would have limited wartime utility. For the most part, China’s footprint beyond its immediate region has been economic in the form of the Maritime Silk Road initiative, a network of infrastructure investments that are often of limited economic value but serve the twin aims of exporting excess industrial capacity and building political influence. Nevertheless, as actions such as targeting US aircraft with lasers from China’s Djibouti facility and live-fire exercises in the northern Indian Ocean, coupled with the forward-edge defence concept illustrate, the PRC regards extra-regional coercion possible to a limited degree.

Existing analyses of anti-access, then, diagnose an aspect of the overall challenge but do not contextualise it. Denying the US easy theatre entry to win local wars on China’s periphery is not an end in itself but a component of what might be dubbed a strategy of ‘status adjustment’ within the South China Sea. Each act of calibrated change embeds in the region’s collective mindset the notion that China is the central power in this particular complex. This became apparent when in the text of the Joint Statement of the Japan–ASEAN Commemorative Summit, ASEAN leaders abstained from condemning China’s ADIZ over the Senkakus, and when the attendees of the ASEAN Defence Ministers’ Meeting of 2015 refrained from raising the issue of

---


island building in the South China Sea. More broadly, Southeast Asian leaders have been wary of appearing to take sides in a Sino–US rivalry by abstaining from publicly endorsing the Free and Open Indo-Pacific concept, for example, and have been increasingly receptive to China’s initiatives to foster a degree of Sino-centric economic regionalism. To be sure, this has not been an altogether successful strategy with a number of states choosing to hedge against China diplomatically and militarily even as they engage it economically, but those successes that China has enjoyed illustrate its most likely roadmap for gradually altering the region’s geopolitical orientation. Political pre-eminence and a growing physical presence would facilitate forward-edge operations that would complicate a US effort to reinforce Taiwan in a conflict. Collectively, this would transform China’s maritime geography from the fragmented geography mentioned earlier into one revolving around a Mediterranean-sized central sea that China controls.

If China were to turn the South China Sea into a bastion and a springboard for denial operations in the waters between the first and second island chain, its prospects for resolving the outstanding issue of Taiwan on its own terms before the US could respond would improve drastically. The cumulative effect of both the South China Sea and Taiwan being in Chinese hands would drastically curtail Japan’s freedom of action outside northeast Asia. PLA forces in Taiwan would radically complicate the response times and geographical dispositions of Japan Self Defence Forces against missile threats in the event of a conflict while de facto Chinese control of the South China Sea and the ability to project power into the Western Pacific would strain Japan’s SLOCs. Regardless of the presence of US forces and Japan’s own substantial capabilities, this would have the effect of knocking Japan out of the Pacific balance and freeing China to pursue more expansive aims beyond the first island chain.

Control of a nearby offshore sea, then, is a stepping stone to a greater presence in the far seas. This is how the PLA views Taiwan, which Admiral Ernest King famously dubbed the ‘cork in the bottle’ of the South China Sea. This geographical role has been held by PLA strategists from as early as the 1990s and has remained a feature of internal discussions of Taiwan for decades. As a 2008 Modern Navy article notes, a reunion with Taiwan would

signify that China’s ability to break through the Second Island Chain has had a significant transformation ... the PLA’s military facilities on Taiwan would also be able to deter Guam ... the US will have no choice but to consider the degree of force amassment on Guam. If the US reduces its strategic position on Guam, then the Second Island Chain’s containment force will also be reduced. By contrast should Taiwan fall into the control of a great power opponent, the PLA’s forces can be permanently fixed in the first island chain.\footnote{Yanlin Bai, ‘Daolian shang de shijie haijun’ [‘The World Navies on the Island Chains’], \textit{Xiandaide haijun} [Modern Navy] (Vol. 10, 2008), pp. 10–20. Quote is author’s translation.}

Therefore, the PLA’s maritime strategy goes far beyond simple territorial revision, as is often assumed. Rather, the oceans abutting China are viewed as a series of interconnected archipelagos, with dominance of one archipelago in all scenarios short of war allowing contestation in the next ring of maritime interests. Contest in the second ring in turn enables China to fight and win a local war in the first ring, if necessary.

Anticipating this, the PLAN has begun the process of investing in undersea exploration and laying seabed sensors beyond its immediate region. The financial needs of states in the Indian Ocean region and second island chain offer it the opportunity to expand the line of sight of its shore-based assets by purchasing outposts in cash-strapped states that could be used for surveillance and port visits by Chinese vessels. In 2016, the Federated States of Micronesia passed a resolution voting to end the compact of free association with the US, which was followed by a flurry of Chinese investment. Similarly, Pakistan, Sri Lanka and Myanmar have all allowed the PRC to open, and in certain instances take part ownership of, port facilities in return for Chinese loans.\footnote{Thomas Matelski, ‘America’s Micronesia Problem’, \textit{The Diplomat}, 19 February 2016.} The PRC does not need full-blown bases in these countries. All it needs are listening posts, the opportunity to conduct seabed exploration from these countries and regular PLAN port visits to provide the PLA with the over-the-horizon reconnaissance capabilities that it needs to mount strikes beyond the first island chain with locally based assets.\footnote{Stephen Biddle and Ivan Oelrich, ‘Future Warfare in the Western Pacific: Chinese Antiaccess/Area Denial, U.S. AirSea Battle, and Command of the Commons in East Asia’, \textit{International Security} (Vol. 41, No. 1, 2016), pp. 7–48.} Activities such as laying undersea sonar networks could be carried out from friendly ports during peacetime, while ground-based radar based at friendly ports could extend the reach of China’s strike assets. Unlike bases, these ‘places’ are not unambiguously military in nature and, given that they are on the territory of third parties, would be difficult to strike in wartime. As mentioned earlier, sites such as Myanmar’s Coco Islands are already likely to host PLA ISR equipment. Similarly, a locally positioned surface search radar at Hambantota (in Sri Lanka) or Gwadar (in Pakistan) linked to the PLA’s ISR system via satellite datalinks could extend the reach of shore- and sea-based missile platforms well beyond the first island chain.

In time, some of these ‘places’ could indeed be converted into bases from which the PLAN could operate. There is little hurry to do this, however, given that without accomplishing its aims in its near abroad, China would be creating bases that were little more than liabilities. Creating a virtual presence that can be rapidly transformed into a real one after the first island chain ruptures, however, is of utility.
II. China’s Evolving Maritime Operational Framework: Systems, Not Fleets

Despite the Mahanian turn in Chinese thinking, the PLAN is an ‘army navy’ – not an independent service but a branch of the PLA. Therefore, although seapower has entered the Chinese strategic lexicon, the idea of an independent fleet has not. Rather, the fleet is a component of a maritime operating system. This system is a combination of target-acquisition sensors, target-localisation sensors, C2 elements, weapons, weapon platforms, and the electronic communications linking them together. The components of this network are spread over land, sea, air and space, as well as in the cyber domain and electromagnetic spectrum. When the PLA refers to seapower, it means the generation of power at sea, not, as is the case in Western states, the generation of dedicated naval forces. Ships are just one of a series of platforms that can act as sensors and shooters for the PLA, and one of a number of sensors and shooters to be targeted in the event of a conflict with a peer competitor.

This has important ramifications for understanding the so-called A2AD strategy that many attribute to the PLA. The PLA, it has been argued, intends to use asymmetric assets, such as shore-based ASBMs, to put US carrier groups at risk, either denying them access to the East Asian seas or forcing them to operate at ranges that erode their ability to be strike platforms. For all the attention paid to them, however, ASBMs, such as the DF-21D and DF-26, are only a small component of the PLA’s arsenal of conventional missiles. The majority of the Strategic Rocket Force’s (PLARF’s) ballistic missiles are the less accurate DF-15s which were built to be used against ports and airfields in tandem with air- and submarine-launched land-attack missiles. In true continental fashion, then, China views the ability to deny an opponent access to the landmasses that surround a closed sea as a prerequisite to exercising sea control itself.

If these shore-based assets can establish local air supremacy and disrupt an opponent’s C2 nodes and logistical infrastructure, that rival’s platforms at sea will become vulnerable to ASuW cruise missiles, such as the YJ-18, YJ-62 and YJ-83, which can be launched from the PLAN’s near-seas ‘mosquito fleet’ comprised of Jiangkai frigates, Type 056 corvettes and Type 022 catamarans. Submarine-launched variants of the same ASCMs can also be launched from Song- and Yuan-class submarines loitering in littoral waters. These submarines can also take part in land-attack roles.

113. Despite reaching initial operating capability in 2010, China only fields around 30 DF-21D missiles as opposed to 1,500 land-attack missiles of varying ranges. For an overview of the PLARF’s arsenal as of 2016, see Anthony Cordesman, ‘The PLA Rocket Force: Evolving Beyond the Second Artillery Corps (SAC) and Nuclear Dimension’, CSIS, 13 October 2016.
Beyond this point, assets such as the DF-21D and DF-26, along with ASuW missiles carried on long-range bombers, including the H-6, can complicate and delay deployment between the first and second island chains, as well as the northern Indian Ocean in tandem with SSNs and surface action groups centred on cruisers and DDGs which have theatre air-defence capabilities.

The critical point is that far-seas denial is an enabler for near-seas control, which is to be established, if war with a rival great power should become necessary, by the massed use of ground, sea and air assets in pre-emptive strikes. PLA writers such as Wang Houqing explicitly admonish China’s supposed affinity for the gradual use of forces, arguing that to be effective, air and ballistic missiles from a multitude of strike platforms have to be launched en masse against a wide set of targets encompassing surface platforms and logistical nodes such as ports and C4ISR centres.\footnote{114. Wenrong and Wenmu, \textit{Zhanlue Xue [The Science of Military Strategy]}, p. 108.} What Chinese strategists such as the authors of \textit{The Science of Military Strategy} and the \textit{Science of Second Artillery Campaigns} envision, then, is not a passive effort to hold opposing forces at bay, but rather launching high-intensity kinetic salvos across the breadth and depth of a theatre of operations to annihilate an opposing system.\footnote{115. See, for example, Xijun, \textit{Di’erpaobingzhanyixue [Science of Second Artillery Campaigns]}, p. 230–40; Wenrong and Wenmu, \textit{Zhanlue Xue [The Science of Military Strategy]}, pp. 107–08.}

As a result, the PLAN’s strategists view their own platforms differently from the framework that Western observers use. For example, as mentioned earlier, PLA authors such as Tang Jianfeng and Yang Zukui categorise land-based missile systems such as the PLARF’s substantial ballistic and cruise missile arsenal as ‘sea control’ tools whereas carrier battle groups are classified as instruments of ‘sea denial’.\footnote{116. Martinson and Yamamoto, ‘How China’s Navy is Preparing to Fight in the “Far Seas”’.} While this might appear bizarre at first, it makes a great deal of sense when one unmoors the concepts of command and denial from specific platforms such as capital ships. Command of the sea is merely ‘the ability to drive the opponent’s flag from the sea or allow it to appear only as a fugitive’, while remaining able to use the sea for one’s own strategic ends such as amphibious lift and blockade.\footnote{117. Alfred Theyer Mahan, \textit{The Influence of Seapower on History, 1660–1783} (New York, NY: Dover, 1987), p. 138.} If this is now the era of the battle network as opposed to the battle fleet, command of the sea is predicated on one’s navy being embedded in a network of sensors and shooters based on land, sea, air and (for sensors at least) in space. By contrast, expeditionary tools such as carriers, which move beyond the reach of this network, cannot be means of command – at least, that is, until the network’s reach has been extended to encompass their likely areas of operation.

If this is indeed the case, then one might expect China’s carriers and their growing fleet of DDG escorts, such as the Type 052, Type 051C and the planned Type 055, to act as a fleet in being in distant waters, contesting SLOCs in the second island chain and Indian Ocean and tying up an opponent’s resources in the task of containing them. This would prevent carrier groups in the second ring of defence from intervention to disrupt China’s command of the first. This framework assumes that wars will be short and limited and that, if prevented from achieving
theatre entry before China has put its local command of the sea to good use, an adversary such as the US will accept a fait accompli. While such ‘short war’ thinking has often proved fallacious, and may prove particularly optimistic if a PLA campaign begins with a massed pre-emptive strike on an opponent’s forward-deployed assets, it appears to be a core feature of Chinese planning. If PLA strategists do work on this assumption, then they do not need a long-range force capable of winning beyond China’s immediate environs or even denying the second ring of defence to an opponent indefinitely. Rather, long-range forces merely need to complicate an opponent’s planning and deployments for a period after which world opinion and mutual economic pain force both parties to desist. As such, a force of multiple light vessels capable of ASuW and ASW within the first island chain coupled with a smaller far seas fleet in being are collectively sufficient, at least in theory, for achieving far seas denial and local command.

Finally, a word on the role of information in this system. Information is not just a domain for contestation but the basis on which individually vulnerable platforms can exercise command of the seas. A network of sensors and shooters capable of launching salvos from the land, sea and air requires a distributed multi-domain complex capable of real-time tracking an opponent’s platforms. Thus, the PLA has invested heavily in a system of subsurface sensors and sonar buoys in the South China Sea, in addition to ground-based radar on the mainland and on artificial islands and a growing fleet of Airborne Warning and Control Systems (AWACS). In addition to satellite networks comprising both state-owned assets such as the new Jilin-class satellite and commercial satellite networks, these assets are intended to provide the PLA with the 360-degree situational awareness it needs to ‘informatise’ its force. Moreover, newer assets can extend the reach and effectiveness of older ones by providing them with the situational awareness that they lack – thereby enhancing the warfighting utility of legacy assets. In effect, then, the PLA views success in maritime warfare as being a function of the robustness and agility of duelling networks rather than the concentration of platforms per se. To this end, space, cyber and electromagnetic spectrum domains have been unified under the overarching rubric of information, management of which has been accorded to the newly created Strategic Support Force (SSF). The status of this force as a coequal service to the branches of the PLA illustrates both the centrality of information distribution to the PLA and the way in which warfare is seen as a whole of military effort in which cross-service information sharing is key.

III. The Structure and Components of the PLA’s Theatre-Level Maritime System

The doctrinal vision described above has necessitated a broad reorganisation of the PLA to enable joint operations at the theatre level. To this end, in 2015 China initiated a series of organisational reforms which replaced the old system of military regions with five theatre-level commands which subordinated all military assets to the authority of the theatre commander.\(^{120}\) This represents the first step in a larger push to separate administrative control of service-level assets from operational control and build a truly integrated system for sea control in the near seas. As such, tracing the PLA’s path towards an integrated cross-domain force is key to understanding China’s maritime power. The following section will articulate these organisational developments.

The Organisation of the PLA

As has been mentioned above, substantial differences exist between the PLA and Western militaries with respect to the conceptualisation of naval warfare. Specifically, the PLA does not conceive of maritime command as being a purely naval operation per se. Rather, publications such as the *The Science of Military Strategy* categorise seizing sea command, as well as blockades, as a subset of a wider category of operations dubbed ‘joint firepower operations’.\(^{121}\)

The lynchpin of this concept is that naval platforms are just nodes in a wider system of capabilities distributed across land, sea, air and space. Command of the sea, then, is a function of the ability to dislocate an opponent’s military system on the adjoining landmass. A joint firepower operation thus begins with a sustained bombardment of an opponent’s logistical and infrastructural nodes with a wide variety of assets, including cruise missiles, short- and medium-range ballistic missiles, airpower and non-kinetic means. Ships are just one of many platforms that can deliver force to decisive points.

It is thus not surprising that, for all the emphasis placed on ASBMs, such as the DF-21D, the vast majority of China’s ballistic missiles are short-range ballistic missiles (SRBMs) and

---


intermediate-range ballistic missiles (IRBMs), such as the DF-15, which target fixed assets rather than ships. Disrupting logistics and C2 nodes is viewed as being at least as important if not more so in the PLA’s concept of ‘systems warfare’ at sea. As Toshi Yoshihara notes, rather than sinking platforms such as aircraft carriers, PLA publications often emphasise the importance of neutralising bases such as Kadena and Sasebo in the event of a war with a US-led alliance, arguing that absent the information and logistical anchors needed, ships cannot be effective in any case.\textsuperscript{122}

This is not to say that achieving mission kills against carriers is not an objective. Indeed, a central feature of the concept of joint firepower campaigns is hunting maritime strike platforms such as carriers. The integration of space-based assets, seabed sensors, sensors on surface vessel and AWACS-based radar, as well as other information nodes under the aegis of the SSF, has, in theory, the potential to create a resilient and integrated information network capable of coordinating dispersed assets to target surface platforms. However, targeting platforms is seen as a component (arguably a secondary one) of a wider campaign by one system of ground-, sea-, subsurface- and space-based ISR to dislodge another, similar network to control the sea in between them. As such, PLAN authors believe that China should seek ‘sea command without capital ships’.\textsuperscript{123} The PLAN within this context can operate effectively only as part of a system of ground, sea, space and subsurface sensors put in place during peacetime and in conjunction with a network of ground- and air-based shooters.

The reorganisation of the PLA reflects this cross-service synthesis. As of 2015, China’s regional military commands were replaced with joint operational commands, divorcing administrative control (which is still service specific) from operational control which is built around combat systems that execute a campaign. A combat system is a PLA term for tasking a specific group that pursues what in the West would be called an operational-level objective (a campaign, in the PLA’s lexicon).\textsuperscript{124}

Within this, the supreme command dictates a national-level set of strategic objectives for the respective theatre commanders. It retains direct authority over war control measures and the tools used to achieve escalation control.\textsuperscript{125} This likely means that assets from the Second Artillery Corps (SRF), which play a war control function, are to be released to theatre commanders on an as-needed basis or will receive orders from the supreme command directly. In each theatre, a joint operational commander has ultimate operational control over the assets and logistics of all of the services within a given theatre. The next level down are service-specific commands that

\begin{flushleft}
\textsuperscript{125} Information Office of the State Council, ‘China’s Military Strategy’, reprinted by Xinhua, 26 May 2015.
\end{flushleft}
act as a middle tier of command. At the final tier are service-level combat operations groups. While this still involves service-specific planning, subject to the tasks allotted to each service by the joint operations command, it represents a transitional step towards a more ambitious form of integration – integrated composite formations. This would entail the eventual elimination of service-level commands and the creation of operational groups based from combat groups and the function they perform. As such, combat groups from each of the PLA’s services would find themselves combined into operational groups at or close to the outset of a conflict based on the theatre commander’s assessment.126

Running parallel to this command structure is an information system operated by the SSF that answers directly to the Central Military Commission (CMC). The SSF will collate ISR data from assets across the services before distributing it on a need-to-know basis to theatre-level information operating systems.127 Chinese authors regard the creation of the SSF as a major step in the direction of cross-service integration. The existence of a service capable of collating ISR from across the PLA, they argue, ensures the timely cross-service distribution of data. Additionally, some authors argue that this will ensure that the information stovepiping caused by service-level purchases of ISR assets will be avoided, suggesting that the SSF has a say in the administrative procedures of the other branches at least with respect to the procurement of ISR equipment and software.128

Like the SRF, the fact that the SSF can conduct war control functions such as disruptive cyber attacks, propaganda and cyber warfare, and that its functions cut across theatre boundaries, appears to have resulted in the latter answering directly to the CMC. In wartime, however, SSF assets could be allotted to theatre commanders.

This model, while still largely aspirational, is illuminating in a number of ways. First, it would appear that Chinese planners view the information age as an enabler of hierarchy as opposed to networking. Unlike their Western counterparts, the PLA’s planners appear to view information as a means not of empowering officers on the ground but of ameliorating the traditional pitfalls of hierarchy – their slowness to react and lack of real-time information. Indeed, PLA authors writing at the turn of the millennium argued that an information-rich environment would make it possible for the CMC to, in certain contingencies, exert operational control over specific units.129 While this is likely an expedient to be pursued in circumstances requiring close political control, it does illustrate that the PLA’s leadership views information dominance as a way of enabling hierarchical control as opposed to mission command. Second, it would appear that the PLA views the solution to the risks of manoeuvring in the information domain to be the release

of information on a selective basis. Lateral networking, by contrast, is seen as a potential risk inasmuch as an open network is subject to contagion. As such, though the PLA is cognisant of the value of direct communication between networked units under certain circumstances, the coordination of information is to be centralised where possible. Finally, PLA strategists view the capabilities of the respective services in functionally agnostic terms. As the reach of ground-based capabilities extends in the information age, bringing Gorshkov’s vision of a high-tech Leyte Gulf to fruition, the PLA appears confident that the ability of a theatre commander to recombine modular combat groups drawn from across the services into task-focused operational groups is the optimal means with which to match ends and means.

Figure 1: China’s Theatre-Level C2 Structure


131. See, for example, the discussion of joint firepower and joint blockade campaigns in Wenrong and Wenmu, Zhanlue Xue [The Science of Military Strategy], pp. 200–40; also useful is the discussion of the constitution of operational formations in Xinglin, Zhanyi lilun xuexi zhinan [Campaign Theory Study Guide], pp. 100–40. Integral to the conception of warfare inherent in these and other publications referenced throughout the paper is functional agnosticism – the idea of using assets from across domains to achieve multiple roles as opposed to allocating specific assets to specific tasks.

This raises the question of how independent seapower will be used, if at all. PLA publications suggest that an independent maritime theatre command should be formed to unify China’s fleets and conduct far seas joint operations. If the C2 and ISR issues surrounding the use of ground-based precision are resolved, and if the space-based infrastructure needed to support it is resilient, there is no reason that ground-based assets cannot theoretically support a PLAN force in the Western Pacific and Indian Oceans. The centrality of China’s continental landmass and the South China Sea would appear, in theory at least, to optimise this approach given that China would find itself operating on strategically interior lines both on land and at sea. It would appear, then, that the high-end component of the PLAN’s force structure will eventually form the basis of a maritime theatre in conjunction with long-range precision strike assets, thereby extending the joint firepower concept beyond the first island chain. Suggestions that the PLARF and PLAAF are experimenting with increasingly long-range prompt strike capabilities would seem to lend credence to the idea that land–sea integration need not, in the long term, be a purely near-seas concept.133

As such, it would appear that independent naval power is consistent with restrained objectives such as sea denial and far seas protection but must be embedded in shore-based support to enable more ambitious missions further afield.134

The PLA’s Growing Reconnaissance Strike Complex

A central ground for conceptualising command of the commons as a joint operation is that information procession is still, to a great degree, ground-based. Not only are many of the sensors upon which a C4ISR capability depends ground-based, but others, such as seabed sensors, typically require friendly nearby bases.

The coordination of information about a nearby closed sea requires the integration of information from multiple sources, both civilian and military, coupled with a robust kill chain and sensor network. The PRC has made the development of such a system a centrepiece of its Outline of National Medium- and Long-Term Science and Technology Development (2006–2020) stipulating the need for an integrated ground-, sea-, air- and space-based system with the aim of achieving full ‘informatisation’ by 2050.135 Within the lexicon of the PLA, informatisation

entails cross-service C4ISR integration and real-time data processing. Unlike related ideas, such as the US’s net-centric warfare concept, however, the PLA envisions information as a resource to be centralised and dispersed by theatre-level commands as opposed to being shared freely within an organisation, reflecting an emphasis on tight integration seen in Russian and Soviet discussions of reconnaissance strike complexes.  

At present, the PRC is in the process of upgrading its satellite network, with 60 Jilin-class satellites which update at 30-minute intervals expected to be in place by 2025. In addition, civilian vessels are being fitted for surveillance roles, while an increasing emphasis on underwater unmanned vehicles (UUVs) and seabed sensors, coupled with a growing fleet of AWACS, all collectively bring the PLA closer to the point at which it can provide its units with a real-time single operating picture of the battlefield. The establishment of the PLA SSF in 2015 was a step in this direction. Moreover, the construction of islands in the South China Sea supports this aim. China has thus far built ground-based over-the-horizon (OTH) radar on its major installations in the Spratleys, extending its line of sight to the second island chain.

That being said, certain glaring deficiencies in the PLA’s C4ISR integration remain. First, PLA doctrine calls for the creation of ad hoc operational groups tailored to a specific joint firepower campaign. While this adds flexibility to planning, it complicates an already overwhelming task of inter-organisational integration. Given the degree to which joint operational commanders are likely to be involved in relatively low-level planning within this context, any cut in links between the joint operational command posts and task group commanders could be fatal. The coordination provided by a hierarchical organisational structure is, then, offset by its potential fragility.

Indeed, the ability of the PLA to support forces beyond the first island chain with ground-based firepower is by no means certain. Ground-based OTH radars typically have to operate on high frequencies to do their job, meaning that they can provide early warning but not track quality data. Low-orbit electronic intelligence (ELINT) satellites similarly produce data that is too low in resolution to provide targeting information. While synthetic aperture radar such as the Soviet Radar Ocean Reconnaissance Satellite can potentially provide track quality data, these are vulnerable to being disrupted at the outset of a conflict. It is therefore likely that the PLA will have to triangulate


136. See Dima Adamsky, The Culture of Military Innovation: The Impact of Cultural Factors on Innovation in Russia, the US, and Israel (Stanford, CA: Stanford University Press, 2010), Chap. 2.
data from multiple sources to track a carrier. Low-resolution data from ELINT satellites would need to cue ship- and air-based radar to search the area in which a carrier was spotted. The data from these assets, which would doubtless be under enemy fire, would have to be fused and transmitted to a firing crew. An operator needs to rapidly identify relevant assets, assign them to the grid and provide tracking data to nearby sensors – under likely electronic cyber and conventional attacks. The reliance of the PLA on satellites renders its kill chain vulnerable to many electronic warfare countermeasures. Additional means of tracking such as AWACS are similarly vulnerable.

Furthermore, while the creation of the SSF may harmonise the ISR assets of the respective services going forward by standardising procurement patterns, it is unclear how the backwards integration of existing assets will be accomplished.

**The PLA’s Procurement Patterns: A High/Low Mix**

Through the 1990s and early 2000s, the PLA had to grapple with a fundamental contradiction between its near- and long-term maritime objectives. In the immediate term, with a coastal defence fleet that was sufficient for little else, the PLA needed to ensure that it could deny an opponent access to its coast and execute missions with respect to Taiwan. In the medium to long term, however, the PLA and the PLAN in particular had much more expansive objectives in sight. One means by which organisations are able to moderate the contradictions between near- and long-term objectives is what is sometimes described as open architecture planning. While generally used in the context of software, the open architecture framework involves the creation of systems to which new components can be added to alter the critical task focus of the system. Old platforms within this context need to be modified either in their structure or their purpose in order to continue playing a role even as the system changes. An example of this is the IJN between 1890 and 1905. Initially, it focused on coastal defence forces to defend the home islands against the colonial powers by building a fleet of torpedo boats. Later, when it developed a local sea control force based on battleships, torpedo boats were integrated with this force to act as an unconventional offensive tool with which to bottle an opponent’s fleet in its harbours, which worked to great effect in the Russo–Japanese War. The PLAN has, in the authors’ estimation, followed a similar twin-track approach to modernisation. It has mass-built light combat vessels to exert sea control in its near seas while taking a slower, more experimental approach to the production of larger vessels. In tandem with the substantial investment in ground-based precision strike and air support, this has created a fleet capable of sea control within the first crescent and a smaller fleet that can augment the littoral combat force with air defence

---

140. Biddle and Oelrich, ‘Future Warfare in the Western Pacific’.
143. On the PLAN’s vessel construction, see O’Rourke, ‘China Naval Modernization’, pp. 17–37.
capabilities, create strategic space for it by conducting forward-edge defence and eventually act as the nucleus of a far seas force.

The PLAN has grown in increments, using the relatively benign strategic environment of the 1990s and early 2000s to engage in experimentation and domestic substitution for foreign imports. In the case of its fleet of DDGs, six different classes of vessel were built before the PLAN began serial production of the Type 052D Luyang-class destroyer. Similarly, four classes of frigate were built before the Type 054A Jiangkai entered serial production. As newer vessels entered serial production, older vessels and experimental craft were shifted to a coastal and near seas defence role. In recent years, some of these vessels have been replaced by vessels such as the Type 022 Houbei catamaran and the Type 056 Jiangdao corvette. Both vessels, which have constituted the bulk of the PLAN’s purchases over the past decade, are equipped with the YJ-83 ASCM. The decision to retain older vessels and to equip their newer replacements with long-range strike capabilities not typically seen on coastal patrol vessels can be understood within the context of the near seas active defence strategy. While older vessels and smaller ships do not have the sensors or air defences to sustain high-end combat independently, they are expected to operate in tandem with DDGs that can provide theatre air defence for them as well as targeting and cueing information. High-end vessels that can process nodes and command vessels as well as providing air defence are seen as a means to ‘informatise’ older and lighter vessels, extending their reach and utility. Thus, a portion of the Chinese high-end fleet is likely to remain in the inner crescent as part of what the PLAN’s scholarship calls ‘small battle groups’. These are heterogenous groups comprised of light and heavy vessels grouped on the basis of speed with the latter acting as command ships and air defence for the former, which play an ASuW and ASW role. These vessels expect to operate against an opponent that is having its airpower disrupted on the ground by the SRF’s precision strike capabilities and will expect to be under the cover of an increasingly modern PLAAF. In essence, retaining and building vessels that have little utility in a platform-centric context makes sense if they are to act as floating TELs as part of a cross-domain system.

In peacetime, this large force of light but capable vessels can help to assert China’s maritime claims and patrol the seas it regards as critical to its overarching strategy of using peacetime sea control and harassment as a means of breaking political coalitions. The US Office of National Intelligence has identified this role as being particularly critical for the Jiangdao, which has seen deployment in both the South and East China Seas. Such vessels can be competitive in standoffs or skirmishes with

---

144. On the makeup of China’s fleet, see Bryan Clark, ‘A Navy at the Tipping Point’, Center for Strategic and Budgetary Assessments, 2019, pp. 8–9; Yves-Heng Lim, China’s Naval Power: An Offensive Realist Approach (Farnham: Ashgate, 2014).


individual civilian or military vessels of an opposing state, and can play a role as nodes in a wider system should high-end warfighting be required.

In contrast to received wisdom, China’s aim is not to buy as much state of the art, sophisticated equipment as possible. Beijing instead strives to use its resources as judiciously as possible. Due to the size of the Chinese fleet, this is a long process, but it is a more effective way to make use of those older models that are still usable if modernised. In a case of a conflict taking place before the end of the thorough modernisation of the older systems, the PLAN would use both the modern and the older equipment when facing the opponent.147

A similar pattern can be observed with submarines. Diesel-electric submarines equipped with ASCMs have been prioritised over longer endurance SSNs. While this may owe something to the noisiness of existing SSNs, the fact that China did not seek to procure and then reverse engineer SSNs from a cash-strapped Russia in the 1990s is surprising. If the role of submarines is not as long-range hunter-killers but rather as near seas assets that can carry out sorties in which they conduct ASuW and land-attack missions both within and immediately beyond the first island chain in conjunction with surface, ground and air assets, this is more readily explicable.

On both the surface and subsurface, then, the PLAN has opted for what Zumwalt might have dubbed a ‘high/low mix’. A small nucleus of high-end ships serves to extend the reach and survivability of low-end vessels within and perhaps slightly beyond the first island chain and to project limited power in the outer crescent. In tandem with its fleet, the reach of China’s ground-based precision strike assets and enabling ISR forces is gradually radiating outwards. In due time, then, far seas active defence may supplant disputing command as an aim outside the first island chain in a way that was never possible for Gorshkov’s Soviet fleet.

Table 2: The PLAN’s High/Low Mix in the Subsurface

<table>
<thead>
<tr>
<th></th>
<th>Jin (Type 094 SSBN)</th>
<th>Shang (Type 093/093A SSN)</th>
<th>Kilo SS (Russian-Made)</th>
<th>Ming (Type 035) SS</th>
<th>Song (Type 039/039G) SS</th>
<th>Yuan (Type 039A/B/C) SS</th>
<th>Qing (Type 032) SS</th>
<th>Annual Total for All Types Shown</th>
<th>Cumulative Total for All Types Shown</th>
<th>Cumulative Total for Modern Attack Boats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1997</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>1998</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>1999</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2000</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2001</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>2003</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>2004</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>22</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>2005</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>31</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>2006</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>36</td>
<td>27</td>
</tr>
<tr>
<td>2007</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>38</td>
<td>28</td>
</tr>
<tr>
<td>2008</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>38</td>
<td>28</td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>2010</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>42</td>
<td>31</td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>45</td>
<td>34</td>
</tr>
<tr>
<td>2012</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>52</td>
<td>39</td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>52</td>
<td>39</td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>52</td>
<td>39</td>
</tr>
<tr>
<td>2015</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>55</td>
<td>41</td>
</tr>
<tr>
<td>2016</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>57</td>
<td>43</td>
</tr>
<tr>
<td>2017</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>2018</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>2019</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Figure 2: The PLAN’s High/Low Mix in the Surface

Sources: Clark, ‘A Navy at the Tipping Point’; O’Rourke, ‘China Naval Modernization’, p. 20.
IV. China’s Present and Emerging Maritime Force Structure

IN LINE WITH its incremental approach to developing maritime power, China has spent the preceding three decades pursuing a fairly consistent pattern of procurement. This pattern has proceeded in three phases. First, experimental versions of new vessel classes were procured in small numbers, while existing older vessels were upgraded to extend their reach, strike power and lifespans. Second, after deciding on a vessel type, the PLAN has mass procured the vessel while retiring experimental vessels and older craft to augment and extend the reach of China’s coastal defence forces. Effectively, this generated a dual fleet of newer power projection assets and a coastal defence force that was, for all intents and purposes, an auxiliary sea control force capable of augmenting high-end warfighting efforts in China’s near seas. Finally, over the last decade, the Chinese have gradually retired the experimental craft, to be replaced with a new batch of corvettes and catamarans. Unlike littoral combat ships in other navies, however, these light ships carry long-range ASuW capabilities and appear to have cooperative engagement capabilities that would allow them to receive support from AWACS and other ships. Like the retired high-end vessels they are replacing, China’s new force of light vessels is expected to conduct combat operations at range from its own shores against high-value targets, freeing up newer DDGs and FFGs for far seas missions. What has emerged, then, is a dual-track fleet: a ‘mosquito fleet’ comprised of numerous cheap redundant vessels capable of ASuW and ASW roles in China’s near seas in conjunction with land-based support; and a smaller fleet of more individually potent DDGs and FFGs that can perform escort and strike missions beyond the first island chain.

Notably, however, the development of corvettes, catamarans and FFGs has been prioritised over the construction of more expensive DDGs and aircraft carriers. This partially reflects the time and costs of procurement, but may also point to another feature of China’s naval posture. That is, its far seas fleet cannot truly have an effect until the inner crescent of China’s two-ocean framework has been secured by its near seas fleet.

This is why China’s DDGs and FFGs are the functional equivalent of its near seas fleet: long-range ASW and ASuW vessels. China’s carriers, similarly, are lighter vessels capable of providing organic air cover to surface action groups. This is somewhat different from the US Navy’s force structure in which carriers are a central strike asset while DDGs such as the

Arleigh Burke are dedicated air and missile defence assets. As such, it makes little sense to mass produce far seas capabilities until the capacity to support them with land-based strike capabilities evolves. The extended reach of the PLARF, which can now strike targets as far as the Indian Ocean and the second island chain with its DF-26, subject to effective ISR, will be critical to this force’s ability to fight in far seas. Similarly, the ability of the PLAAF to provide a long-range strike within the second island chain and Indian Ocean region will be critical to allowing the far seas fleet to effectively contest command outside the first island chain.

The second noteworthy feature of China’s evolving maritime surface force is the ubiquity of long-range ASuW capabilities. This despite the fact that many of these vessels are optimised for other roles, such as ASW and anti-air warfare. Virtually every surface combatant the PLAN fields has some long-range strike capability. This highlights the view that the fleet represents a component of a network of sensors and shooters as opposed to a set of dedicated platforms with dedicated roles. Effectively, then, the PLAN subscribes to the notion that if it floats, if it fights.

A similar dual-track approach to capability development is visible below the surface of the sea. During the 1990s and early 2000s, China retired large segments of its ageing fleet of diesel-electric submarines (SSKs) and replaced them with more modern variants such as the Russian-made Kilo- and the Yuan-class SSK. Like their surface counterparts, Chinese submarines are equipped with some form of ASCM, meaning that they act as ‘floating TELs’ capable of ASuW at long ranges. While they are quiet and capable of sorties beyond the first island chain, the limited endurance of these submarines’ diesel-electric engines means that they cannot operate far from Chinese shores. This effectively makes them an extension of the ground-based network of shooters such as the corvettes, catamarans and frigates they complement. As on the surface, this force of near seas vessels is being slowly augmented by a smaller force of SSNs capable of operating at long range. Moreover, repeating a pattern seen on the surface, China’s SSNs are identical to their near seas counterparts in all but endurance, with a substantial emphasis on equipping them with anti-ship and land-attack cruise missiles. This is in stark contrast to Western and, until recently, Russian practice, which emphasises using SSNs as tools to operate at close range, infiltrating groups of more expensive warships such as carriers or sinking convoys of supply vessels. Indeed, available information on the PLAN’s preferred role for submarines highlights land-attack, long-range ASuW strikes in tandem with other vessels and minelaying as opposed to an exclusive emphasis on the more traditional hunter-killer role. In particular, Chinese authors stress the use of long-range ASuW and land-attack roles for SSNs against the supply vessels of carrier battle groups and distant bases such as Guam. Sinking replenishment

150. For a survey of PLAN literature on submarine usage, see Cole, The Great Wall at Sea, pp. 45–50; for a discussion of SSN-launched cruise missiles against Guam in a semi-official publication, see Han Jiangbo, ‘Guandao meijun kongzhi xi taipinyang zuozhan tixi xe gang’ [‘Guam: The “Key Link” in the US Military System to Control the Western Pacific’], Xiandaide Haijun [Modern Navy] (Vol. 6, December 2006), p. 33. Both sources, while somewhat dated, offer observations regarding the trajectory and role of the PLAN’s subsurface force that have not been superseded by contemporary evidence.
vessels as opposed to carriers, it is argued, might coerce their withdrawal without the escalatory risks of actually sinking a carrier. Rather than targeting platforms, then, SSKs and SSNs will in the near term augment the ‘effective control’ component of China’s approach at sea by delaying and disrupting the deployment of follow-on forces, as well as augmenting the multi-vector ASuW salvos launched by surface and air platforms. In the medium to long term, should the defence of the first island chain cease to be an issue, these platforms could push the forward edge of the sea denial ring further out while surface vessels strive to take control of the second ring, according to the framework outlined in Table 1. Indeed, a leaked slideshow presented by former Rear Admiral Zhao Dengping, who served as director of the PLAN’s equipment department, suggested an interest in augmenting SSKs and SSPs (diesel-electric submarines with air-independent propulsion) with an auxiliary nuclear power plant for precisely this long-term end.151 As with the surface force, then, a high/low mix of near seas-focused SSKs and a smaller number of long-range SSNs could serve as the incubator of a two-ocean fleet.

In tandem with the incremental growth of the PLAN, the reach of the shore-based capabilities with which the PLA can exert maritime influence has radiated further outwards. In the 1990s, the PLA’s Second Artillery Corps was largely a force that had been geared towards the task of nuclear deterrence, with the bulk of its assets dedicated to IRBMs capable of launching a second strike against an adversary that had targeted the mainland – the Soviet Union being the most likely candidate when this force was developed. During the 1990s, nuclear-capable IRBMs were slowly ratcheted down in favour of conventionally armed, short-range ballistic missiles such as the DF-15.152

In the mid-2000s, a partial shift occurred as conventionally armed medium-range ballistic missiles (MRBMs), such as the DF-21C, began to enter the Second Artillery Corps’ arsenal. Moreover, by 2010, China had achieved initial operating capability on the world’s first anti-ship ballistic missile, the DF-21D, with a circular error probability (CEP) low enough to enable the targeting of a carrier at ranges of up to 2,000 km.153 As of 2019, the DF-21 and DF-21D have been joined by the DF-26, a ballistic missile with a 4,000-km range with both anti-ship and land-attack variants. However, at the time of writing, ASBMs and long-range strike assets in general constitute a relatively small proportion of China’s missile arsenal. Beijing has been investing in increasingly accurate SRBMs capable of targeting fixed assets, such as airfields and ports along China’s periphery, in tandem with air- and sea-launched cruise missiles. As with surface vessels, the emphasis has been on cheaper capabilities that can be used locally while work on longer-range assets has proceeded cautiously in order to build the competence for mass production only once the geopolitical conditions and supporting assets needed to unlock the potential of these tools are available. If patterns observed with regards to surface and

subsurface vessels are any guide, as China’s ISR capability matures, the production of longer-range ASBMs will accelerate to keep pace with the PLAN in distant seas, extending the reach of the reconnaissance strike complex beyond the first island chain.

Surface Combatants

Large Multi-Mission Surface Combatants

The pattern of procurement for China’s major surface combatants over the past three decades has been broadly consistent. Both with its destroyers and frigates, the PLAN has committed to the limited procurement of incrementally more sophisticated vessels, experimenting with various forms of hull design and capability suite before settling on a chosen vessel type and entering a mass production phase. Older experimental craft were then repurposed to the role of hybrid coastal/near seas forces capable of both littoral defence and reinforcing the PLAN within the first island chain. The emphasis on retaining older hulls as coastal defence vessels allowed the PLAN a dual-capable coastal defence force comprised of warships that, while less than first rate, could augment the PLAN in warfighting missions or enforce claims in low-intensity conflicts. In due time, these vessels have been replaced with a new generation of corvettes and catamarans equipped with the ubiquitous YJ-83 ASCM capable of playing the same role.

Thus, for example, from 1990 to 2010, the PLAN commissioned, or retrofitted with modern capabilities, six different types of DDG. The earliest of these vessels, the Soviet-era Luda-class DDGs, lacked any meaningful ASW capability and were equipped with AAW guns. Some of these vessels were outfitted with the HQ7, a short-range AAW missile comparable with the French Crotale, and had their reach extended by the installation of the YJ-83 ASCM. Despite this, the Ludas were, overall, incapable of high-end warfighting, but the experience of refitting them with modern capabilities was a useful first step towards developing an indigenous capacity to build surface combatants. That said, the Luda class were capable of ASuW against weaker regional actors and were retained in small numbers as coastal defence and auxiliary forces until relatively recently.

China’s first major indigenous DDG project, the Luhai, was introduced in 1997. With a more modern stealthy design, and an on-board ASW capability in the form of the Z-9 helicopter and the YJ-83 ASCM, these 4,600-tonne vessels represented a significant leap in China’s domestic shipbuilding capability. However, they still fell far short of what might be considered a major surface combatant, displacing less water than later frigates. The low endurance and limited loadout of the Z-9 was therefore highlighted as a critical weakness with regards to ASW missions, which to some degree persists given that a replacement helicopter has not yet been procured.

155. O’Rourke, ‘China Naval Modernization’, p. 11.
In the late 1990s, China broke with its policy of indigenous shipbuilding, purchasing four Russian-built \textit{Sovremenny} destroyers – China’s first 8,000-tonne destroyer equipped with the SS-N-22 Moskit ‘Sunburn’ ASCM.\footnote{Paul Schwartz, \textit{Russia’s Contribution to China’s Surface Warfare Capabilities: Feeding the Dragon} (Washington, DC: CSIS, 2015), pp. 10–19.} The likely catalyst for this change in approach was misgivings regarding the speed with which domestically produced gas turbine engines could be developed for larger indigenous vessels, coupled with a sense of urgency following the 1996 Taiwan Strait crisis.\footnote{Michael McDevitt, ‘The Modern PLAN Destroyer Force’ in Peter Dutton and Ryan Martinson (eds), \textit{China’s Evolving Surface Fleet} (Newport, RI: Naval War College Press, 2017), p. 60.} As a result, the PLAN briefly diverged from its emerging procurement pattern and bought an ‘off the shelf’ sea-denial force in miniature from Russia, including both the \textit{Sovremennays} and 12 \textit{Kilo}-class submarines. These destroyers are capable of ASuW engagement at ranges of up to 240 km on the basis of active search data from their Mineral radar and are equipped with the medium-range SA-N-22 Uragan surface-to-air missile (SAM) system which can engage targets at 25-km ranges. They were vastly more advanced than PLAN vessels of the time.\footnote{Paul Schwartz, \textit{Russia’s Contribution to China’s Surface Warfare Capabilities: Feeding the Dragon} (Washington, DC: CSIS, 2015), pp. 10–19.} Today, however, they lag in capability behind newer DDGs and cannot communicate with other vessels because of their unique software and datalinks. Nonetheless, the PLAN appears to be refitting these vessels with wide-area defences and the YJ-18 ASCM, suggesting that they retain a role, perhaps as an air defence platform for lighter vessels or a means of augmenting coastguard and PAAMF vessels in isolated quasi-militarised clashes.\footnote{Jeffery Lin and PW Singer, ‘China Refits Older Warships for a Bigger Punch’, \textit{Popular Science}, 29 April 2016.}

The period between 1997 and 2010 saw a reversion to domestic DDG construction, with the rapid-fire production of four DDG types: the \textit{Luyang I}, the \textit{Luzhou}, the \textit{Luyang II} and the \textit{Luyang III}.\footnote{Lim, \textit{China’s Naval Power}, p. 94.} The first ship in this series built on earlier experience in building stealthy hulls and, like its predecessor, was equipped with the YJ-83. The \textit{Luyang}, possessing a Russian-made Shetl air defence system with an 18-mile radius, was the first indigenous Chinese destroyer with more than short-range air-defence capabilities.\footnote{Ibid., p. 95.} Two \textit{Luyangs} were built in the early 2000s before the PLAN shifted production to the Type-051C \textit{Luzhou}, which was equipped with the SA-N-20/RIF-M, a maritime variant of the S-300 air defence system.\footnote{Naval Technology, ‘Type 051C / Luzhou Class Guided Missile Destroyers’, <https://www-naval-technology.com/projects/type051cluzhocllassg/> , accessed 22 August 2019.} Shortly after this, two domestically produced Type-052C \textit{Luyang II} destroyers were produced, equipped with the domestically made HHQ-9 vertically launched SAMs, as well as a phased-array radar comparable with the \textit{SPY I} aboard the \textit{Arleigh Burke}. The \textit{Luyang II} replaced the YJ-83 with the YJ-62, a longer-range ASCM with a 400-km operational radius. The \textit{Luyang II} and \textit{Luzhou} represented an evolution towards \textit{Aegis}-type destroyers capable of area air defence. The Type-052C features a multifunction phased-array radar and both vessels carry a Russian-made Mineral OTH fire
control radar, representing a major step towards long-range targeting. After a brief hiatus between 2010 and 2012, the building of DDGs recommenced in earnest with the construction of four Luyang II and 14 Type-052D Luyang III DDGs between 2012 and 2018. The Luyang III, which displaces 7,500 tonnes, is comparable with the Luyang II in terms of its AAW capabilities, and radar- and fire-control systems, but also carries the newer supersonic YJ-18 ASCM, which has an operational radius of 500 km.

The most ambitious project pursued by the PLAN thus far, however, is the Type-055 DDG. Displacing around 13,000 tonnes and carrying 122–128 vertical launch cells, the Type-055 is closer to a cruiser such as the Ticonderoga class than a traditional DDG. Equipped with a dual-band, phased-array radar, the HHQ-9 SAM, as well as short-range air defence missiles, the vessel extends a substantial air-defence umbrella over itself and nearby ships. The Vertical Launch System on the Type-055 can also launch the YJ-18 ASCM and the YU-7 ASROC. Chinese sources suggest a battle management and cueing role for the Type-055, which they view as a means to ‘informatise’ older vessels. Presumably, this would involve the Type-055 acting as a forward-command and battle-management post for surface action groups that include older vessels or vessels with limited lines of sight such as the Jiangkai and Jiangdao.

The evolution of China’s FFGs followed a similar pattern, with four frigate classes being produced between 1991 and 2004. The four frigate classes, the Jiangwei I, Jiangwei II and Jiangkai I and II followed the same evolutionary pattern observed with DDGs, with each successive frigate featuring a stealthier hull, greater AAW capabilities and more competent ASW options than its predecessor. As with all the surface vessels produced by the PLAN during this period, the frigate classes were equipped with ASCMs (the YJ-83), enabling them to act as floating TELs. The Jiangwei I, which featured a short-range HHQ61 SAM, lacked a credible ASW suite, but was a useful component of a surface combat group focusing on ASuW and a capable escort. The Jiangwei II retained the basic hull structure of its predecessor, but replaced the HHQ61 with the HHQ-7. The Jiangkai I represented a step change in the quality of Chinese frigates. With its 4,600-tonne displacement and sloped hull, China’s first truly modern frigate comparable

---

164. Andrew Tate, ‘Type 052D Destroyer and Type 054A Frigate Enter Service with PLAN’, Jane’s 360, 5 March 2019.
to the French *Lafayette* class on which it was based. Initially conceived as a substitute for a corvette designed to patrol China’s exclusive economic zone and contend with Taiwan’s *Kang Ding* frigates in a cross-strait contingency, the *Jiangkai* was eventually repurposed to play an air defence and ASW role. To this end, the frigate was equipped with the HHQ-16 SAM along with a hull-mounted sonar.\(^{169}\) The *Jiangkai II* (Type-054A) represented an incremental improvement on the repurposed *Jiangkai*, suggesting that China had finally decided upon a model for serial production. The *Jiangkai II* shares a hull with its predecessor but carries the supersonic YJ-18 ASCM along with both hull-mounted and Variable Depth Sonar. The combination of a long-range ASuW capability and an area air-defence capability, along with a capable sonar suite and a Z-9 helicopter, allows the *Jiangkai II* to play a role distant from Chinese shores. Chinese authors refer to the vessel as a DDG in miniature, which can compensate for its lack of an OTH radar by receiving cues from other larger vessels or from AWACS.\(^{170}\) While the vessel currently lacks the Cooperative Engagement Capability needed to be cued by AWACS, it can carry out ASuW missions on the basis of direction from other, larger vessels. The aspiration to leverage frigates as long-range surface combatants therefore illustrates a key feature of China’s naval buildup – the extension of the near seas fleet’s range to allow it to eventually participate in far seas operations. Over the past two decades, the PLAN has procured 43 frigates in total, with patterns following that of DDGs: limited procurements of the first three classes from 1991 to 2008 gave way to mass production of the *Jiangkai II* in 2008, with 28 *Jiangkai II* frigates being produced over the past decade.\(^{171}\) The earlier experimental frigates were moved to a coastal defence role, but given their original specifications, could augment the fleet in near seas contingencies.

China’s carrier programme has followed roughly the same pattern, with an initial emphasis on platforms meant for experimentation and marginal utility in specific contingencies followed by a recent shift towards building far seas combatants that amount to larger, longer-endurance vessels. China’s first carrier, the *Liaoning*, was a decommissioned Ukrainian *Varyag*-class vessel originally procured by a private company in 1998, ostensibly for conversion into a nightclub, before being handed over to the PLAN. The *Liaoning* had its first sea trials in 2011 and was declared operational in 2012. With its steam-powered engine and ski-jump launch system, the *Liaoning* lacks both the reach and the strike power of its US counterparts. Its air wing consists of 24 J-15 Shenyang light fighters, capable of fleet air defence and ASuW but not offensive strike operations.\(^{172}\) In 2013, China began work on a sister ship to the *Liaoning*, the Type 001A, which had its first sea trials in 2019. This vessel is broadly similar to the *Liaoning* and relies on a STOBAR launch system, but it is somewhat larger and can carry an additional four to eight J-15

---

170. Collins and Erickson, ‘The Type 054/054A Frigate Series’.
Crossing the River by Feeling the Stones

Both vessels could be useful in a contingency involving a regional power in the South China Sea, where they could provide credible air defence to a Chinese task force and extend fighter air cover to surface action groups operating in the second defensive crescent if they operated from the forward edge of the near seas. Published open source Chinese scholarship envisions this role for carriers in the immediate term, supporting island blockades or assaults by helping to hold off follow-on forces. Rather than being strike assets, China’s first two carriers were extensions of its coastal air defence system capable of providing air cover to surface action groups. This in turn aids efforts to complicate the deployment of enemy carriers within 1,000 miles of China’s coast. While the air wing on a PLAN carrier is little match for its US counterpart, a force of 50 J-15s capable of ASCM strikes operating together with the PLAAF’s longer-range ground-based air assets could tie up a component of a USN’s carrier air wing to perform defensive roles. This could rob it of precious time in a time-bound local war and ease pressure on Chinese forces within the first island chain. This light carrier force would also enable surface action groups comprised of DDGs and FFGs to carry out ASuW missions more freely beyond the reach of China’s shore-based Integrated Air Defence System under some fighter cover.

However, if China’s patterns of procurement are any guide, the experience of refurbishing the Liaoning and then building the Type 001A from the hull up will enable more ambitious projects in the future. In 2018, China seemed to validate this view by beginning work on an 85,000-tonne aircraft carrier, the Type 002. While details are scarce, it appears that the carrier will be steam- rather than nuclear-powered and will feature an Electromagnetic Aircraft Launch System (EMALS), which would allow it to launch heavier strike aircraft. While the air component on this vessel, which could be 89 aircraft, would certainly provide the offensive strike that the Liaoning lacks, a force of three such carriers operational by 2040 (assuming a build rate of six years comparable to that of advanced countries and no gaps between vessel procurement) would still amount to a rather modest strike force. However, carriers play a number of peacetime roles in terms of ‘showing the flag’. Perhaps most importantly, however, a force of five carriers would, if China achieved its aims regarding Taiwan and the South China Sea, be able to redeploy between the Pacific and Indian Oceans more rapidly that the US Fifth and Seventh Fleets. If these vessels eventually become the backbone of the authors of The Science of Military Strategy’s envisioned ‘independent maritime theatre’, they could achieve limited control, if not outright command in both oceans by virtue of China’s central position. In limited conflagrations or scenarios short of protracted war, the numerical and qualitative inferiority of China’s carrier force opposite the US may not matter. Reports suggest a long-term desire to stand up an independent carrier-centric naval command based on Hainan Island that answers directly to the CMC. This would allow carriers the freedom they need for political roles – that is, a signalling and deterrent

174. For an overview of PLA discussions of the role of carriers, see Daniel J Kostecka, ‘From the Sea: PLA Doctrine and the Employment of Sea-Based Airpower’, Naval War College Review, 2011. While somewhat dated, there is little in either the developments surrounding the PLA or existing scholarship to suggest a change since the time of publication.
175. Xiaosong, Zhanlue Xue [The Science of Military Strategy], p. 110
role in a wide arc spanning the Indian Ocean and Western Pacific. The Soviet model of carrier employment as a supporting tool might then give way to a more ambitious posture in the two oceans that builds on Gorshkov’s ideas but also departs from it in certain ways if China resolves its outstanding issues in the first island chain.

**Light Surface Combatants**

In tandem with the serial production of higher-end, large surface combatants, China has slowly begun retiring the older experimental vessels that it reassigned to a brown/green water role. While old frigates and destroyers have been retired, their newer replacements have shown a desire for craft that can be used for both coastal defence and a means of exercising sea control within the near seas. Unlike larger vessels, light surface combatants have been mass-produced over the past decade. China currently has 80 Type-022 Houbei catamarans and is in the process of building a force of 60 Type-056 Jiangdao corvettes. Both ships can serve multiple roles, patrolling China’s extended coastline and guarding its maritime interests in peacetime and augmenting its high-end surface combatants with long-range ASuW in wartime. The decision to equip both vessels with the YJ-83 reflected this dual purpose; Chinese shipbuilders explicitly identified the Jiangdao and Houbei as vessels that could double up as frigates in wartime (they are classified as light frigates as opposed to corvettes).

Thus, despite its fairly small size (the Type-056 displaces 1,560 tonnes), the vessel is expected to play a wide-ranging array of roles. The corvette is equipped with both a towed-array sonar and a VDS and carries a Z-9 Harbin helicopter along with torpedo launchers, likely for the Yu-7. Like most vessels in the PLAN, it is also equipped with the YJ-83. The multirole nature of this vessel sets it apart from analogous vessels such as the German K130 and the US littoral combat ship. The Type-056 is closer in function to the Israeli Sa’ar 5 in that it serves as a frigate in miniature, exercising most of the functions of the larger vessel without the range. Indeed, Chinese authors view the corvette as being a like-for-like replacement for older frigates, rather than a means of replacing retired FFGs with a more specialised patrol vessel.

While not capable individually of high-end warfighting against large vessels, corvettes, such as the Type-056 operating in large numbers, could generate heavy ASCM salvos in conjunction with other vessels, acting as cheap ASuW shooters. This would entail relying on the air defences of larger vessels but would augment both the ASW and ASuW capabilities of a Chinese surface force. The Type-056 could also play a useful role patrolling China’s inner line of defence within the first island chain against US SSNs and surface vessels in tandem with shore-based support. In circumstances short of war, a cheap multirole vessel with moderate endurance at sea (the

---

Type-056 is capable of staying at sea for approximately 20 days) could be a useful means of enforcing territorial claims and engaging in missions.

The Type-022 wave-piercing catamaran – a relatively small vessel capable of travelling at high speeds – similarly reflects the overarching emphasis on vessels capable of both coastal patrolling and augmenting larger surface groups in wartime. The Type-022, despite often being viewed as a replacement for older Offshore Patrol Vessels such as the Houjian, lacks the endurance to act as the primary vessel for this mission. While capable of augmenting older offshore patrol vessels and coastguard vessels for short durations on a rotational basis, the most notable feature of the Type-022 is its substantial arsenal of eight C-802 ASCMs. It also has a cooperative engagement capability, which allows it to receive cues from AWACS, drones and, potentially, other vessels. The combination of a long-range ASCM with a CEC mitigates the vessel’s lack of an organic radar and allows it to act as a cheap ASuW vessel in China’s near seas. This is potentially relevant in a scenario involving Taiwan, where China would have to disable the latter’s fleet of Cheng-Kung frigates in order to attempt an amphibious assault. While China’s larger surface vessels could certainly engage Taiwan’s frigates, the fact that these vessels are likely to be dispersed before conflict complicates the task of finding them. A large fleet of small vessels is particularly well suited to finding and eliminating such a dispersed threat. The Houbei could also sail beyond the range of shore-based air cover to launch salvos of ASCMs at the picket vessels of a carrier battle group or other large surface targets operating within 600 km of China’s shoreline. This would involve taking heavy casualties, but there is some indication that at a cost of roughly $80 million the Houbeis are viewed as being far more expendable than the vessels they target. Operating in large packs, these vessels could add greater mass to the ASCM salvos China can launch at opposing surface groups. They could be used with larger vessels either sequentially, forcing DDGs such as the Arleigh Burke to exhaust their VLS in advance of an assault by a main force of heavier vessels, or, if coordination can be achieved, in tandem with larger vessels to produce an overwhelming salvo.

Recent exercises by China’s East Sea Fleet have seen the Houbeis take part in combined ASuW drills in tandem with larger vessels, suggesting that this is at least an aspiration. This type of use would extend the protective AAW umbrella of China’s DDGs over the Type-022, as well as allowing it access to ISR from larger surface vessels. Moreover, this would also suggest that at least a portion of China’s fleet of DDGs is likely to remain relatively close to Chinese shores in wartime if it is to be interoperable with the Type-022. This is likely to be the role of the East Sea Fleet’s destroyers which will see action against Japan.

179. The Houbei has an operational range of roughly 500 km and can fire at targets up to 120 km away if properly cued by an off-board sensor. See Nan Li, ‘Why is the Surface Fleet Gaining Importance? Insights from PLA Doctrinal Writings’ in Dutton and Martinson (eds), China’s Evolving Surface Fleet, p. 43.
Submarines and Undersea Warfare

The trajectory of China’s submarine force has in many ways mirrored its surface fleet with modest investments in expensive power projection capabilities such as SSNs carrying on alongside a more substantial investment in less expensive but more regionally usable craft such as SSKs and SSPs. The PLAN has purchased roughly two submarines a year since 1990 though, due to the retirement of older vessels such as the Type-091, the aggregate size of the force has declined slightly. Nonetheless, the modernisation of the PLAN’s submarine force has increased its overall combat capability substantially.\(^{181}\)

Chinese authors tend to view SSNs more through the lens of a threat rather than as an opportunity. Hunter-killer submarines capable of operating on the high seas are seen as an area of US comparative advantage and an underappreciated threat to PLAN amphibious operations in light of China’s own weak ASW capabilities.\(^{182}\) In contrast, in waters where China is most likely to fight a local war, SSNs have no major advantage over diesel-electric submarines. The longer endurance of SSNs is less consequential in scenarios involving operations near home ports while the acoustic complexity of shallow waters, such as those of the northern portions of the South China Sea, helps to mask diesel-electric submarines from enemy ASW. It is likely, then, that SSNs will be used for far seas operations.

However, given that this goal is seen as being secondary to the acquisition of near seas capabilities, China has taken the same cautious risk-averse approach to the procurement of SSNs that it has with DDGs and aircraft carriers. Since 2006, China has procured four Type-093 SSNs to replace its ageing fleet of Type-091 nuclear submarines.\(^{183}\) The Type-093 was developed with substantial Russian involvement and is substantially quieter than the Type-091.\(^{184}\) That said, the vessel is substantially less quiet than submarines such as the Russian Akula, though the two more recently produced variants (dubbed the Type-093G) may be quieter than their predecessors.\(^{185}\) China has shown some interest in remedying this malaise by acquiring a pump-jet propulsion system for a rumoured new class of SSNs dubbed the Type-095, which is in development.\(^{186}\) However, some analysts seem confident that one way to overcome the weaknesses of relatively loud submarines is to equip them with long-range strike capabilities. According to one analyst writing for an official PLAN publication, equipping submarines with long-range ASCMs allows them to turn the tables on ASW vessels by striking them from beyond the range at which they

\(^{181}\) O’Rourke, ‘China Naval Modernization’, p. 10.


\(^{183}\) O’Rourke, ‘China Naval Modernization’, p. 10.

\(^{184}\) Ibid., pp. 10–15.

\(^{185}\) Ibid., pp. 10–15.

\(^{186}\) Ibid., pp. 10–15.
can be detected by active and passive sonar. Having eliminated ASW vessels in a surface group, a relatively loud submarine might then have more success in a hunter-killer role, or clear the way for follow-on attacks by other submarines. It is likely to this end that the Type-093 is equipped with the YJ-18 supersonic ASCM, with a 270 nautical mile range and the ability to sprint to Mach 3 speeds as it approaches its target. A Type-093 could, despite its relative noisiness, play several roles in China’s far seas: hunting the lighter vessels that would likely be used to resupply a carrier group; acting as a forward picket line to whittle down an opponent’s fleet in advance of a main engagement in the Western Pacific; or acting as a land attack vessel against assets in areas such as Guam. The Type-093 will be joined eventually by the newer Type-095 SSN, of which China reportedly intends to build 14. While little is known for certain about this SSN, a leaked lecture by Rear Admiral Dengping, which depicted a new model SSN that the PLAN is likely to build, may offer some clues. The Rear Admiral’s slides showed a 7000-tonne single-hulled vessel with a sound isolation raft and propeller intended to reduce its acoustic signature. The vessel featured 12 cruise missile launch cells in front of its sail which was similar to that of the Type-093. If this is indeed the design of the Type-095, it illustrates certain departures from past PLAN practice, such as the use of a single hull to achieve lower cost-weight ratios, but also elements of continuity, most notably the continuing emphasis on multirole SSNs capable of acting as cruise missile submarines as well as hunter-killers.

China’s diesel-electric submarines show greater specialisation for the hunter-killer role than SSNs, though they too are expected to fulfil multiple functions. According to Professor Li Daguang of China’s National Defence University, the fleet of diesel-electric submarines serves four roles: blockading an opponent’s ports in the near seas; brief attacks on carrier battle groups; land attack using cruise missiles; and anti-submarine warfare against the US Navy’s SSNs. The acoustic complexity of coastal and inland waters, coupled with the fact that most targets in these waters are relatively close to Chinese shores, means that quiet diesel-electric submarines can operate effectively against a broad range of targets while their major weakness, limited time for which they can stay at sea, is less of a handicap over short distances. The versatility of roles envisioned for SSKs and SSPs reflects a commitment to multirole vessels that reflects the broader emphasis on networks as opposed to platforms, but also highlights China’s concerns with its capacity for tasks such as ASW. Chinese authors have long lamented the limited utility of the Z-9 helicopter in ASW missions given its limited range and load while imports such as the

191. Michael S Chase et al., China’s Incomplete Military Transformation Assessing the Weaknesses of the People’s Liberation Army (PLA) (Santa Monica, CA: RAND, 2015), pp. 97–105; Tai Feng,
Russian KH-28 are regarded as more competent but limited in number.\textsuperscript{192} Assigning tasks such as minelaying to older diesel-electric submarines that can prowl the access points to the first island chain used by American SSNs may be one way of countering this weakness.

As such, China’s conventional submarine fleet has received the bulk of the PLAN’s investment in the undersea domain. Since 1995, China has procured 12 Russian-made \textit{Kilo}-class submarines, as well as producing three domestic diesel submarines: the Type-035 (\textit{Ming}) SS; the Type-039 (\textit{Song}) SS; and the Type-039A (\textit{Yuan}) SSP. China’s first conventional attack submarine class built during the early 1990s was the Type-035. Based on the Type-033, but with substantial changes to the majority of its systems, including the hull, this submarine was more evolutionary than revolutionary. In terms of armament, Type-035 has six bow-mounted torpedo tubes capable of firing either wire-guided/acoustic or wake-homing torpedoes. There are four variants of Type-035 – 035, 035A, 035G and 035B. Around half of them have been retired, and they will be completely phased out as newer classes enter service.\textsuperscript{193} In the mid-1990s, China shifted from its policy of domestic procurement to Russian exports in the form of the \textit{Kilo}. This was around the same time the PLAN procured the \textit{Sovremenny} DDG and likely reflects both a momentary panic after the Taiwan Straits crisis and an appreciation of the opportunities to import and potentially reverse engineer complex vessels from a cash-strapped Russia. The \textit{Kilos} received by the PLAN displace around 3,000 tonnes submerged and are armed with six 533-mm torpedo tubes. The 877EK and 636 \textit{Kilo} submarines are both equipped to fire wire-guided and wake-homing torpedoes, and the 636 is loaded with 3M-54E1 Klub anti-ship cruise missiles. The 3M-54E1 has a range of 97 nautical miles and cruises subsonic with a Mach 2.5 terminal sprint. The \textit{Kilos} are fitted out with Russian systems and electronics.\textsuperscript{194} Given China’s history of reverse-engineering the military technology it purchases, it is likely that the advanced sound-dampening measures employed aboard the \textit{Kilo} 636s have been analysed extensively by the PLAN. However, the reverse-engineering potential was not the only factor driving the PLAN’s decision to procure the 636. Were that the case, only a few boats would have been necessary. The Chinese \textit{Kilo} fleet is versatile enough to play a variety of roles in line with China’s overall approach. Its Klub ASCMs can double off as land attack missiles and the Chinese Project 636 \textit{Kilos} can also play a minelaying role.

The \textit{Song}, China’s conventional submarine with an indigenous hull design, first entered service in 1999. The first vessel of the class had an unusual stepped sail and appeared to have suffered extensive difficulties during sea trials, hence the type’s late introduction into service. Subsequent vessels were produced with a conventional sail design and designated Type-039G. Since the

\textsuperscript{192} Feng, ‘Zhnonguo Shifu Xuyao Fanqian Xunluo Xi’ [‘Does China Need Antisubmarine Patrol Aircraft Shipborne Weapons’], \textit{Jianzai Wuqi [Shipborne Weapons]} (Vol. 3, No. 1, 2005), pp. 70–75.

\textsuperscript{193} Feng, ‘Zhnonguo Shifu Xuyao Fanqian Xunluo Xi’ [‘Does China Need Antisubmarine Patrol Aircraft Shipborne Weapons’], pp. 70–75.

Types-039 and 039G are believed to be similar except for the sail, the two will be referred to collectively as the Type-039. This boat is believed to incorporate a number of Russian and Western technologies, including French-designed sonars and German-designed diesel engines. China’s newest submarine class is the Type 039A Yuan. Despite this designation, it is not a close derivative of Type-039G; the two have remarkably different hull shapes and, at least externally, do not exhibit many commonalities. Rather, the Type-039A's silhouette more closely resembles that of the Kilo; this could be incidental, or a result of lessons learned from the Russian boats. Unlike the Kilo, however, the Type-039A incorporates an air-independent propulsion system (AIPs). These systems, which vary in their specifics depending on the implementation, use energy sources (other than batteries) which do not require access to the atmosphere for continued operation. AIP submarines have drastically enhanced submerged endurance relative to diesel-electric boats and tend to be very quiet. While inferior to their nuclear counterparts in terms of speed and endurance, AIP submarines are smaller and cheaper to produce. Indeed, designing and implementing an AIP system is much easier than engineering a stealthy nuclear power train. Displacing around 3,600 tonnes submerged, the Type-039A is larger than both the Kilo and the Type-039G. Its armament is the standard array of 533-mm torpedoes as well as the C-801A (YJ-83). Both the Song and Yuan are relatively small compared to submarines such as the Japanese Soryu, however, and would be most effective in a near seas role or short sprints beyond this area. The retention of a double-hulled design, which restricts both submarines’ endurance further but allows the placement of additional anechoic tiles, further suggests an emphasis on stealth. That said, AIP-equipped submarines can carry out short sprints beyond the near seas, allowing them to act like an ‘SSN for a day’.

An additional ubiquitous feature of all the conventionally powered submarines listed above is the capacity for minelaying. According to Erickson and colleagues, Chinese analysts consider submarines to be a particularly effective means of delivering mines to contested waters. All of the PLAN’s submarines are capable of minelaying and are typically equipped with Chen 1, 2, 3 and 6 mines, built for use outside harbours. The T-5 mobile mine is for use in the seas immediately outside ports as well as the Russian-made PMK-1 and indigenous Mao-5 which can be laid at a 15-km distance from port. The Ming- and Kilo-class submarines can carry 28 and 32 mines, respectively, while newer Song and Yuan classes can carry 30. Notably, the Type-093 (Shang) SSN can also carry a load of 24 mines, suggesting that offensive mining via submarines may also occur beyond the second island chain against targets such as Guam.

The PLAN's force of diesel electric submarines, then, is an underwater analogue to vessels such as the Jiangkai and the Type 056 in that its ability to play a multifunction role in China’s near seas is viewed as being more important than specialisation. Large numbers of SSKs can abet land attack missions, lay mines close off China’s maritime periphery to opposing submarine

198. Ibid., p. 29.
fleets and sortie out from the first island chain for short periods to mount raids on carrier battle
groups. While devoid of the range and endurance of SSNs, the fact that they are operating at
relatively close distances from Chinese shores means that this is viewed as being relatively
irrelevant. By contrast, China’s limited but growing fleet of SSNs is likely to accompany task
groups centred on surface ships such as the Type 052 series, Type 055 and the Liaoning in
an anti-surface role beyond the first island chain, at least until the extension of shore-based
support makes more ambitious tasks feasible.

However, Chinese strategists are acutely aware of their own vulnerability to hostile submarines.
As an article for the Chinese Journal Naval and Merchant Ships notes, China’s ASW capabilities
have historically lagged behind those of its competitors. Not only is this recognised as being
a substantial vulnerability vis-à-vis US SSNs which can still reconnoitre the Chinese coastline
with relative impunity and menace China’s SSBNs, but it may also represent a mission critical
weakness in a clash with a regional power. Japan, with its fleet of Soryu diesel-electric submarines,
could exploit the complex acoustic environment of the shallow East China Seas to good effect
in a regional contingency involving the Senkakus or in a scenario involving Taiwan. It could
prevent the North Sea Fleet from reinforcing its counterparts by bottling this force in its ports by
deploying submarine pickets at the mouth of the Yellow Sea. Even weak regional powers, such
as Vietnam, could use submarines to good effect in local conflicts. Vietnam currently has a fleet
of Kilo submarines which could significantly interfere with the resupply of a Chinese task force
in the South China Sea. Finally, Chinese authors writing for quasi-official journals note US efforts
to track and intercept Soviet submarines at choke points such as the Greenland, Iceland and
the UK (GIUK) gap during the Cold War and anticipate similar challenges for PLAN submarines
attempting to exit the first island chain.

The solution typically proposed to this conundrum revolves around a combination of seabed
sensors, maritime patrol aircraft and escort vessels such as the Type-056, coupled with what
might be dubbed ‘grey zone’ actions to dismantle the US’s own seabed sensor network. To this end, the PRC inaugurated the ‘underwater great wall project’, a system of seabed
sensors linked to China’s artificial islands in the South China Sea by fibre optic cables. While
air- and sea-based sonar is likely to be effective in the deeper waters of the southern area of the
South China Sea, the shallower waters of the north present a challenge to effective ASW efforts.
Existing analysis suggests that part of a seabed sensor system is already in place in parts of the
East China Sea, while work on placing a network of sensors has continued apace off Hainan
Island as well as in the north of the South China Sea. While underwater sensors do not solve the
problem of acoustic cluttering in shallow waters, they add another source of data which can be
used with input from other sources to give PLAN diesel-electric submarines and ASW vessels

199. You Min, ‘Zhongguo Ruhe Fangfan Meiguo Heqianting’ [‘How China Can Guard Against US Nuclear
200. Lyle Goldstein and Shannon Knight, ‘Wired For Sound in the “Near Seas”’, US Naval Institute
Proceedings, April 2014.
Foundation, 2016.
a clearer operating picture than their adversaries. Indeed, much depends on the density and quality of this network. China’s ability to achieve data fusion in real time and relay information to platforms at sea in a timely manner – no small feat – can in theory provide the PLAN with an advantage in near seas, particularly if locally based fighters and maritime air defence systems can close the airspace in these seas to ASW aircraft.

The second development concerning ASW has been an effort to purchase a fleet of ASW-optimised Y8-Q maritime patrol aircraft similar to the US Navy’s P-8 Orion. The Y-8Q (also known as the Y-8GX6) is the Chinese Navy’s first true modern maritime patrol aircraft (MPA) capable of performing ASW missions similar to those of other international fleets. 202

Speculations about an ASW MPA variant of the Y-8 abounded for much of the 2000s, but prototypes were only sighted in late 2011. The appearance of a Chinese naval ASW MPA may reflect increasing confidence of the Chinese military in its ability to contest airspace beyond its borders in the East and South China Seas where ASW MPAs would most likely operate. The appearance of the Y-8Q may also reflect the PLAN’s approval of the maturity and performance of vital subsystems necessary for a true ASW MPA, such as sonobuoys, surface search radar, datalinks and weapons integration. That said, it will likely be a number of years until sufficient numbers of Y-8Qs are in service to provide sufficient air cover, and it will take even longer for the PLAN to develop the institutional knowledge, competency and doctrine in its ASW MPA mission crews that will allow them to track hostile submarines. 203 With a patrol range of roughly 5,000 km, the Y-8Q can loiter for long periods in China’s marginal seas and, in conjunction with seabed sensors and surface vessels, add another dimension to the PLAN’s near seas ASW. 204 The Y-8Q features two ventral weapons bays, and as part of its ASW mission, it would likely carry air-dropped airborne torpedoes. 205

It is difficult to say how many Y-8Qs will ultimately be produced, but it is not unreasonable to expect a final fleet close to 100 or even more based on the strength of similar ASW MPA fleets fielded by the US and Japan. 206 The first of these aircraft was delivered to the North Sea Fleet, repeating the order of priorities seen with seabed sensors. This might reflect concerns over the potential for American SSNs and Japanese Soryu diesel-electric submarines to operate with

---

204. For the specifications of the Y-8Qs range, see Navy Recognition, ‘Chinese Navy New Y-8FQ Cub/GX-6 Maritime Patrol Aircraft Operational with PLAN North Sea Fleet’, 2 July 2015.
particular effectiveness against Chinese shipping in the shallow waters of the East China Sea. That said, the aircraft is now also being attached to the South and East Sea Fleets.\footnote{207}{Navy Recognition, ‘Chinese Navy New Y-8FQ Cub/GX-6 Maritime Patrol Aircraft Operational with PLAN North Sea Fleet’.}

In addition, China appears to be showing a growing interest in UUVs as a means of surveillance and attack. Like the US Navy, the PLAN appears intent on developing large UUVs which can act as motherships for smaller UUVs. While little detailed information about this is in open sources, early indications suggest that Project 912 will likely act as a means of underwater surveillance and minelaying.\footnote{208}{Andrew Tate, ‘China Developing Large Autonomous Underwater Vehicles’, Jane’s Defence Weekly, 24 July 2018.} It is likely that non-acoustic methods of submarine detection, such as high-powered light-emitting diodes (LEDs), will play an increasingly important role in augmenting traditional ASW in the future. Therefore, relatively cheap unmanned vehicles carrying LEDs and capable of launching torpedoes could represent an effective means of conducting ASW operations near the home shoreline.\footnote{209}{Bryan Clark, ‘The Emerging Era in Undersea Warfare’, Center for Strategic and Budgetary Assessments, 22 January 2015, p. 10.}

Finally, the PLAN retains its historical use of mines as a means of denying enemy submarines access to choke points. By mining routes of ingress to closed seas using a variety of vessels including requisitioned civilian ships, Chinese analysts reason, the PLAN can create a relatively safe bastion and staging zone for its surface and subsurface vessels.\footnote{210}{Chansheng, ‘Shen cang de long’ ['The Hidden Dragon in the Deep'], pp. 22–32; Lim, China’s Naval Power.} Rocket-propelled mines, such as the EM-52 and the remote controlled EM-57, are particularly well suited to ASW missions and can be laid from a variety of vessels, including older surface and modified civilian ships and aircraft.\footnote{211}{Erickson, Goldstein and Murray, Chinese Mine Warfare, pp. 31–33.} While China’s mine warfare capabilities will be more fully discussed at a later juncture, they are worth noting here as a cheap means of offsetting its weaknesses in the domain of ASW.

Effectively, then, the PLAN’s approach to subsurface warfare broadly mirrors its approach on the surface of the ocean. The mainstay of its near seas strategy is relatively cheap tools, such as SSKs, mines and a network of sensors distributed across multiple domains. Commanding the undersea domain is, like commanding the surface, seen as a function of multiservice coordination and the clever use of cheap multipurpose vessels. Indeed, one PLAN author cited by Andrew Erickson argued that ASW exercises epitomise the idea that many cheap networked platforms exceed the utility of a smaller number of specialised ones.\footnote{212}{Ibid., p. 37.} With a combination of mines, escort vessels and MPAs, the PLAN and PLA AF along with their paramilitary auxiliaries hope to shut US SSNs out of the Taiwan Strait and South China Sea and to at least constrain submarine threats in the East China Sea. In these anti-access bubbles, the PLAN can hope to use its SSKs in...
Crossing the River by Feeling the Stones

hunter-killer and long-range precision strike roles against targets along and within the first island chain and mount sporadic raids beyond this point. Moreover, if the PRC can dominate the South China Sea, the PLAN can use the multiple available routes of egress to sortie beyond the first island chain to join surface vessels in launching ASCM salvos at ships between the first and second island chains.

The PLAN is also gradually building the endurance to contest waters beyond its immediate vicinity on a more consistent basis. When China commissions the 14 Type 095-SSNs it is beginning to build, it will have a total fleet of 20 SSNs (six Type-093 and 14 Type-095). Additionally, planned efforts to extend the reach of the conventional submarine force will, if proved feasible, give it a greater presence in the second arc of defence. Second, the emphasis on multifunctionality is very much built into China’s submarine-building strategy with both nuclear and diesel submarines capable of acting in land-attack, long-range ASuW, mining and hunter-killer roles in addition to ASW. Recent reports of the deployment of Type-093s in the Indian Ocean would suggest that the longer endurance of these vessels will be leveraged for far seas operations.213 Such forces cannot command the commons, but they can dispute command to a degree, making the resupply of allies and protection of SLOCs possible much as the Soviet fleet was able to do in the Yom Kippur War. Moreover, surface action groups augmented by SSNs can act as a blocking detachment in a local war to keep distant powers at arm’s length. SSNs, perhaps joined by the SSKs that can be spared from near seas operations, can also operate independently to mine or attack targets such as Guam in a high-intensity war with a great power rival such as the US.

Airborne Assets

In any campaign, China’s current doctrine dictates an integrated cross-service approach. As such, any PLA campaign in the maritime domain will, to the extent possible, include ground-based air forces. The PLAAF has been historically limited to fighter patrol operations over the mainland, but now appears to be pushing for a greater role in the ground attack missions that will accompany a maritime campaign alongside the PLARF as well as anti-shipping operations in tandem with the PLAN. Additionally, the PLAN has a limited naval air wing, which appears to be centred on light fighter aircraft, ASW capabilities and, to a lesser extent, long-range bombers such as the H-6.214

Airborne assets that might be relevant in a maritime contingency are divided between the PLAAF and People’s Liberation Army Naval Air Force (PLANAF). The PLANAF has around 25,000 personnel and 690 aircraft. It has traditionally been able to use older aircraft than the PLAAF, so it has taken less ambitious steps towards modernisation. Strides towards improvement in new technology, weaponry and aircraft acquisition started taking place only after 2000. With

the introduction of the *Liaoning*, the PLANAF can for the first time conduct aircraft carrier operations. Despite its limitations, the PLANAF allows the PLAN a degree of organic air support. Originally designed to provide air cover for ships at sea, the PLANAF’s role has expanded to cover maritime patrol, ASW, naval strike, logistical support and airborne early warning.\textsuperscript{215}

China has spent the past two decades phasing out older and relatively obsolete fighter aircraft from the PLANAF and PLAAF. In 1996, fourth-generation fighters such as the Sukhoi Su-27 accounted for under a quarter of China’s inventory. By 2015, that proportion had risen to about half. Fighter aircraft, such as the Su-30, Su-27 and J-10, substantially increase China’s capacity for combat air patrols at range.\textsuperscript{216} Additionally, the PLAAF has developed a modest capacity for strike operations both at sea and on land in support of the PLAN and PLARF. Currently, the backbone of both the PLANAF and PLAAF’s strike capacity is provided by the H-6 long-range bomber and the JH-7 fighter-bomber. The H-6 is a potentially relevant deep-strike threat, able to patrol a combat radius of 3,500 km and fire both the YJ-12 ASCM and CJ-10 land-attack cruise missile. It is based on a relatively old Tu-16 airframe and if operating at very long distances, would be flying beyond the range of fighter cover.\textsuperscript{217} However, the bomber can still hold substantial portions of the second defensive ring under threat from cover provided by either longer-range fighters or carrier-based planes. The JH-7, by contrast, is more limited in both its range and payload, but represents a credible strike option for targets in Taiwan and, possibly, Japan. The PLANAF has followed a similar modernisation trajectory beginning with the purchase of 30 Su-30 MK2 Flankers in 2002 and the replacement of its fleet of obsolete J-8B/D fighters. The PLANAF is now taking delivery of a modern fourth-generation fleet of J-10As and J-11Bs.\textsuperscript{218} It has also received its first carrier-based aircraft, the J-15 Shenyang. The aircraft is one of several Chinese-developed derivatives of Russia’s Sukhoi Su-27 Flanker. The J-15s are currently able to operate *Liaoning* aircraft carrier and the Type-002 carrier being fitted out in the city of Dalian. China is known to have at least one of the six J-15 prototypes fitted with catapult launch accessories on its nose landing gear, and the country is carrying out catapult tests with this aircraft, using what is believed to be a steam catapult and EMALS at an airbase near Huludao, suggesting that the aircraft will also be a significant component of the Type 002 carrier’s air wing. China is developing a twin-seat variant of the J-15, with at least a single prototype known to be flying from Shenyang Aircraft Corporation’s facilities located in its namesake city. It is likely this variant, designated the J-15S, will operate from the future, catapult-equipped carrier China will build after the Type 002 as a two-seat multirole fighter alongside single-seat J-15s, much like the mix of single-seat Boeing F/A-18E Super Hornets and twin-seat F/A-18Fs onboard a typical US Navy carrier air wing. The electronic warfare/electronic attack technology being developed for a specialised variant of the J-16 may also be introduced on the J-15.

\textsuperscript{215} Rick Joe, ‘5 PLA Navy Projects to Watch in the Next Five Years’, *The Diplomat*, 7 August 2018.
\textsuperscript{216} Heginbotham et al., *The U.S.–China Military Scorecard*, p. 75.
\textsuperscript{217} ONI, ‘The PLA Navy: New Capabilities and Missions for the 21\textsuperscript{st} Century’, p. 17.
\textsuperscript{218} Ibid., pp. 17–20.
Table 3: PLAAF and PLAN Combat Aircraft

<table>
<thead>
<tr>
<th>Air Superiority Aircraft</th>
<th>3rd Generation</th>
<th>4th Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>J-7 (FTR)</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>J-8 (FTR)</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>J-10</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td>SU-27</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>SU30 MKK/J 16</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>J-15</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>H-6 (Bomber)</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>Q5 (Strike)</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>JH7 (Fighter Bomber)</td>
<td>240</td>
<td></td>
</tr>
</tbody>
</table>


Perhaps most important, however, is China’s limited but growing inventory of MPAs, Airborne Early Warning (AEW) and AEW and Control (AEW&C) aircraft. Over the past two decades, China has shifted the thrust of its procurement from an exclusive emphasis on interceptors to aircraft capable of operating at range in support of local wars.219 A key aspect of this has been developing the capacity for airborne ISR at range. China has achieved significant new capabilities by modifying several existing airframes. A typical example is the Y-8, a Chinese-licenced version of the ex-Soviet An-12 Cub, which forms the basic airframe for several variants. The Y-8X is the primary Chinese MPA, and AEW and AEW&C aircraft have also been based on this basic airframe. The AEW and AEW&C aircraft feature various types of radar designed for both air and surface detection and tracking.220

Based on the much larger Russian-made IL-76 transport, the PLAAF’s KJ-2000 AWACS aircraft is similar in capability to the Y-8 AEW&C variants. As the navy pushes farther from the coast, long-range aircraft that are able to fulfil a role of ‘the eyes and ears of the fleet’ are now immensely significant for the PLAN.221 Based on the airframe of a Russian A-501, the KJ-2000 was the first of the series to become operational when, after an abortive attempt to procure an Israeli Phalcon radar for integration with an IL-17 airframe, which fell through in the face of US

221. Joe, ‘5 PLA Navy Projects to Watch in the Next Five Years’.
pressure on Israel, Xi’an Aircraft Industry began a domestic effort to modify the A-501. The product of this effort, the KJ-2000, carries an electronically steered AESA radar which operates in either S- or C-band and can track targets at a range of 400 km. As such, operating under the umbrella of shore-based fighter cover (the bulk of which would be effective to around 500–600 km), the KJ-2000 can track targets to a range of 1,000 km from Chinese shores. The KJ-500, by contrast, is an entirely indigenous project based on a Y-9 airframe, which emerged largely due to delays in the delivery of IL-76 airframes from Russia. Like the KJ-2000, the KJ-500 carries a radome, which relies on electronic scanning to scan in azimuth as opposed to rotating antennae. The turboprop engines of the Y-9 airframe will likely force the plane to fly at lower altitudes than the KJ-2000, thereby limiting its range.

China is also in the process of developing a carrier-launched AEW&C aircraft, the KJ-600, which Chinese researchers such as Lan Shunzheng claim will take off from the CATOBAR-equipped Type 002. If it succeeds, this would equip the PLAN with a capability similar to the US Navy’s E-2D Hawkeye. Given that these aircraft are probably too heavy to be launched by a ski-jump system, it is likely that they will be on the Type-002 while the Type-01/001A relies on AEW helicopters and ground-based radar. If successful, this would extend the reach of the PLAN significantly. Moreover, if the data gathered by the KJ-600 is to be streamlined through the People’s Liberation Army SSF, then these aircraft could also be used to cue the longer-ranged strike assets of other services.

Currently, however, the Chinese AEW&C fleet remains limited in size, which is likely to limit the PLAN’s freedom of action in the foreseeable future.

Land-Based Precision Strike Capabilities

The elevation of the Second Artillery Corps to the same level of service as the SRF illustrates the critical role that ground-based conventional firepower plays in the PLA’s planning for sea operations. Over the past two decades, the PLA’s arsenal of conventional ballistic missiles has

---

223. *Ibid*.
225. Scanning in azimuth – searching over a 360-degree angle around a radar – can be achieved either by mechanically rotating a radar’s antennae or arranging radar arrays in a pattern that affords 360-degree coverage and allows them to be electronically activated.
228. *Ibid*. 
grown from a limited force capable of holding few US assets at risk near South Korea to one capable of precision strike at significant distances from Chinese shores.

While novel and potentially game-changing technologies have understandably attracted the focus of observers within and beyond the region, the bulk of the SRF’s investments have been in modernising and expanding its SRBM arsenal. Over the past two decades, the PLA has built roughly 40 SRBMs a year. Moreover, the lower CEPs of newer SRBMs, such as the DF-15A, relative to older models such as the DF-15, have vastly increased the effective lethality of these munitions insofar as it takes far fewer strikes to achieve an objective such as cratering a runway.

Medium- and long-range ballistic missiles such as the DF-21 have been produced in somewhat smaller numbers by contrast, with China deploying around 450 MRBMs, including the DF-21C. The production of IRBMs and anti-ship ballistic missiles has likely been restricted. Ground-launched cruise missiles (GLCMs), by contrast, appear to have been produced in substantial numbers with the SRF currently in possession of 500–750 DF-10 GLCMs.

The bulk of the SRF’s arsenal, then, is still comprised of SRBMs geared towards crippling airfields, ports and C2 assets in areas such as Taiwan and parts of Japan. That being said, China’s growing force of MRBMs and GLCMs reveals an interest in holding assets across the first island chain at risk. Ballistic missiles are likely not a stand-alone tool but rather an enabler, to be used in conjunction with other assets. For example, a ballistic missile strike which cratered the runway of an airfield could enable follow-on strikes by GLCMs or air-launched attacks against aircraft trapped in their hangars.

By contrast, China’s approach to anti-ship ballistic missiles has been cautious. Despite achieving initial operating capability in 2010, China has built only a handful of DF-21Ds. This might reflect a desire to hold off serial production until a mature far seas reconnaissance strike capability emerges. Like other far seas assets, however, long-range precision strike capabilities reinforce China’s position in the near seas by complicating an opponent’s decision-making. If requisite ISR emerges, strike assets such as the DF-21D and DF-26 will likely be game-changers.

**Shore-Based Ballistic Missiles**

Through the 1990s and early 2000s, the PLA fielded a range of SRBMs and MRBMs, which could target vital logistical nodes such as the US airfield in Kadena and the Port of Sasebo in order to delay a potential American intervention on China’s periphery. However, the limited aim of disabling logistical nodes was always intended to be an initial step towards a regional prompt strike capability that would enable the PRC to hit a full range of targets, including logistical nodes, C2 centres and platforms at sea. The priority wartime mission of the PLA’s ballistic missile

---

230. Ibid., pp. 20–30.
arsenal has been the destruction of fixed assets, particularly in Taiwan. However, a broader regional role has frequently been mooted, with ballistic salvos acting as a critical component of the paralysing first strike that the authors of the SMS envision being conducted across the first island chain should a war escalate.\textsuperscript{233} As such, China has added roughly 40 SRBMs and MRBMs to its arsenal annually over the past three decades, while working to replace older missiles such as the DF-15 and DF-16 with newer equivalents with lower CEPs and longer ranges.\textsuperscript{234} IRBMs, by contrast, comprised a smaller proportion of China’s arsenal, constituting only 1.5% of the PLARF’s forces in 2016.\textsuperscript{235} The bulk of China’s arsenal of ballistic missiles, then, has been built to attack fixed infrastructure along the first island chain in order to disrupt the concentration of forces along this perimeter.\textsuperscript{236}

However, in line with the high/low mix approach, China has dedicated limited funds to projects with a potentially disproportionate payoff. Speculation regarding the development of a PLA ASBM capability was confirmed when the then-Second Artillery Corps unveiled the DF-21D. Chinese papers have described hypothetical engagements between the US Navy and an ASBM version of the DF-21 MRBM, variants of which have been in service with the PLA since the 1990s.\textsuperscript{237} The original variants of this missile were canister-mounted and transported on a mobile erector launcher, but more modern variants are mounted on the highly mobile TEL, and feature an extended nose cap that could deliver a Maneouverable Reentry Vehicle.\textsuperscript{238}

Over the past two decades, the PLA has paid particular attention to the challenges related to detecting, tracking, targeting, and hitting an aircraft carrier with a ballistic missile. Initial research pointed to the use of a diverse redundant multi-domain network in order to enable the effective use of ASBMs. The reconnaissance strike complex that the PLA identified as a necessity would be comprised of satellite reconnaissance, OTH radars, UAVs with optical sensors and relay satellites, along with ship-based radar and data from seabed sensors.\textsuperscript{239} This system of overlapping ISR nodes would need to be accompanied by data fusion centres that can weigh and aggregate data from multiple sensors and provide real-time updates to firing crews. Currently, China’s ISR capabilities are still largely stovepiped. In the authors’ assessment, the PLA seems to be betting heavily on the assumption that its ongoing efforts to centralise control of ISR assets under the SSF and to leverage emergent technologies will help to facilitate rapid data transfer and fusion from the ISR capabilities of various agencies. It is not altogether clear, however, that the PLA is confident in its ability to accomplish this. As a result, the DF-21D and

\textsuperscript{234} Ibid.
\textsuperscript{235} Ibid.
\textsuperscript{237} Joe, ‘5 PLA Navy Projects to Watch in the Next Five Years’.
DF-26 constitute a relatively small proportion of the SRF’s arsenal, numbering about 20–30 such missiles, despite being operational for a decade.\textsuperscript{240} Instead, it is land-attack missiles that constitute the bulk of the force.

That being said, the development of a limited number of ASBMs creates the technical competence for serial production should China’s reconnaissance strike complex mature. Thus, the PLA has now begun to explore the possibility of maritime strike at further ranges. Ballistic missiles, such as the DF-26 which has both a land-attack and anti-ship variant, extend the reach of China’s shore-based arsenal well into the second island chain and the Indian Ocean. They are joined by a growing arsenal of hypersonic DF-17s, which could in theory allow the PLA to accurately target ports, C2 nodes and critical assets in these regions.

Much like the smaller high-end fleet it has built to augment its larger near seas force, the PLA appears to be building an ASBM arsenal that can at present serve a complicating role in an opponent’s efforts and can mature into a more potent threat should certain prerequisite goals be accomplished.

Cruise Missiles

In conjunction with its more visible ballistic missile programme, the SRF spent much of the 1990s developing a less visible but equally critical arsenal of cruise missiles. The PLARF maintains a substantial number of CJ-10 land attack cruise missiles with an operational radius of 1,500 km. LACMs are seen as critical to exploiting the initial damage done to ports and airfields by SRBM and MRBM salvos, inasmuch as their greater accuracy enables them to target specific areas of a facility such as aircraft hangars. Thus, for example, Chinese writers envision SRBMs cratering the runways on an airbase and confining aircraft to their hangars after which LACMs deliver a killing blow to the aircraft themselves.\textsuperscript{241} The CJ-10 is also likely to be a critical asset with which to target C2 nodes given the relative accuracy of cruise missiles as compared to ballistic missiles. Notably, however, the PLARF has not developed a substantial force of ground-launched ASCMs. These missiles are launched either from the air or from ships, given that they are targeting distant assets. The PLARF will therefore need to coordinate its SRBMs and LACMs with the LACMs carried by the PLAAF’s H-6 bombers while simultaneously coordinating its ASBMs with ASCM salvos fired from both sea and air platforms. This will be an organisational feat of some magnitude, and not one that China has demonstrated the operational ability to achieve at present.\textsuperscript{242}

The PLA continues to increase its maritime strike capability through domestic ASCM research and development programmes, as well as through the continued purchase of complex, sophisticated

\textsuperscript{240} Cordesman, ‘The PLA Rocket Force’, p. 40; Erickson, \textit{China’s ASBM Development}.


foreign ASCMs and launch platforms. Missile designs are focused on increasing the weapons’ range and use flexibility, as well as on improving its ability to penetrate naval defensive systems. ASCMs are deployed on diverse launch platforms: surface combatants; submarines; aircraft; and coastal defence sites. The PLAN has also recently purchased the SS-N-22 Sunburn and the SS-N-27 Sizzler from Russia. It has also developed the YJ-62 and the YJ-83 domestically.\textsuperscript{243}

Future ASCMs are likely to be aimed at improving the seeking capacities such as the use of wave seekers and the potential employment of radar seekers which would enable improved countermeasure discrimination. The ongoing improvement to the ASCMs, which would acquire new design features, among them supersonic speed evasive manoeuvres, and advanced terminal seekers, will constitute a significant increase in the PLA’s missile capabilities.\textsuperscript{244}

\textsuperscript{243} Fannell and Cheney-Peters, ‘Defending Against a Chinese Navy of 500 Ships’.

\textsuperscript{244} Mike Yeo, ‘No Slowdown for China’s Navy Aspirations’, \textit{Defense News}, 23 January 2018.
Conclusions: Summarising China’s Approach to the Sea and its Long-Term Ramifications

IN A NOW widely read article, the Center for Strategic and Budgetary Analysis’s Andrew Krepinevich made the case for what he dubbed Archipelagic defence: the notion that the geography of China’s periphery rendered a synthesis of land- and sea-based capabilities a necessity. Within this rubric, offshore air and missile assets in conjunction with littoral combat forces represented a first line of defence while capital ships should provide strategic depth, intercepting vessels that broke out of the first island chain in a role that effectively amounted to sea denial.245 The authors argue that in light of China’s approach to strategy, this might be dubbed one of Archipelagic offence, effectively viewing command as being a matter of synthesising shore- and sea-based assets, whereas capital ships are viewed as a means of creating strategic depth and containing a conflict.

This approach, accompanied as it is by a novel tactical framework, constitutes grounds for rethinking certain core assumptions about the way the PLAN expects to fight a war near and far. First, the primary threat that the PLAN poses to Western forces is their ability to introduce enough uncertainty into policymakers’ decision-making cycles for limited local revisions to take place within Southeast Asia and Taiwan. The deterrent aim, then, requires the PLA not to seek a major war, which it explicitly hopes to avoid, but to deter third-party intervention. If this fails, then the PLA would aim to disrupt and slow it by signalling and deployments short of war, such as the aforementioned firing of ballistic missiles into empty seas or the publicised deployment of surface action groups beyond the first island chain.

A contradiction exists at the heart of Chinese strategy, however. While war limitation is the centrepiece of its strategic approach, China’s attitude to warfighting – if it decides a local conflict is about to escalate – emphasises pre-emption on a massive scale. As such, rather than expecting to face successive layers of A2AD aiming to keep them out of the Western Pacific, Western and regional powers should expect immediate and early targeting of both their pre-positioned assets and any ships that enter the region by a combination of surface, subsurface and shore-based assets, based not on risk escalation or forcing a withdrawal but on inflicting a Mahanian decisive battle, albeit with geographically dispersed assets. Outside this zone, the expectation is that the PLAN will operate more boldly than has been previously assumed, but with the fairly modest goal of being a spoiler as opposed to seizing command.

This need not be a permanent state of affairs, however. A central tenet of Archipelagic offence is that command of the sea depends on advance on the land. As such, should patterns of seabed sensor integration with shore-based capabilities succeed in the South China Sea, there is no reason that the pattern could not be replicated in the Indian Ocean region, particularly should China’s leased ports in Myanmar become available for the role, along with the facilities at Gwadar which it funded. In conjunction with a more resilient satellite network, radar and sonar coverage from ports dotted around the Indian Ocean region could in principle extend the reach of shore-based assets and littoral warfare tools, such as SSKs, into the Indian Ocean region. This is a role that Taiwan could also play with regards to the second island chain should the PRC reclaim it. As such, the Gorshkov model represents a transitional step to an altogether more ambitious one of conducting joint operations at distance. This pattern of Archipelagic offence would bring to mind a wider continental approach to maritime strategy, which saw countries as diverse as Sparta, Rome, the Ottoman Empire and the Soviet Union attempt to exert seapower by controlling surrounding landmasses.246

Critically, however, to achieve this two-ocean vision, China needs to dominate the south-central portion of the first island chain. Within this critical area, the PLAN needs to not just deny but command the inner crescent of its defensive zone in order to transform its maritime geography through local wars. Given its weaknesses in domains such as ASW and the burgeoning A2AD capabilities of nearby littoral states, this can arguably be made more difficult without the costly task of theatre entry. Equipping littoral competitors of the PLA with land-based A2AD capabilities and focusing on leveraging their comparative advantages in the undersea domain might be more useful than trying to achieve theatre entry for heavy carriers. Moreover, developing local light littoral combat fleets capable of competing with the low end of the PLAN’s high/low mix in limited wars will be critical to deterrence by denial. In wartime competition, then, an active denial approach aimed at using shore-based missiles and attack submarines to ensure the PLAN cannot use the South China Sea as a maritime bastion would do more to undercut the thrust of its expansionism than attempts at projecting high-value assets into the region.

In peacetime, given its use of territorial disputes as means to an end, challenging China’s territorial claims does little to obviate its attempts at Finlandising the region which are based on the coercive effect that igniting these claims has on target states as opposed to success or failure in securing any specific claim. Rather than exclusively challenging the legality of specific claims through activities such as Freedom of Navigation Operations (FONOPs), the US and its allies could benefit from a strategy aimed at cost imposition, be it in the form of non-kinetic coercive acts, such as EMS operations, or making it difficult for Chinese vessels to access occupied reefs and islets.247 The assumption underpinning FONOPs – that China’s primary aim is territorial

246. Erickson, Goldstein and Lorde (eds), China Goes to Sea: Maritime Transformation in Historical Perspective.
revisionism as a strategic end in and of itself – ignores the second-order objectives to which territorial revisionism is but a means.

The PLAN’s approach to sea denial may well envision placing high-value assets such as carriers and DDGs in high-risk positions beyond the edge of the first island chain to enact a forward edge defence. The risk posed to these assets, and the potential loss of prestige should they be destroyed, might act as a self-deterrent. Holding these assets at risk with air and missile forces based on the second island chain might well reinforce deterrence within the first.

States looking to constrain or manage China’s maritime strategy might look to emulate aspects of it. This might mean building a deterrent force of numerous light vessels and submarines backed by shore-based firepower in East Asia to match the PLA’s maritime operating system while refocusing heavier power projection assets in the Indian Ocean and Western Pacific to compete with the PLAN’s limited blue water capabilities in peacetime and hold it at risk at the outer edge of its defence perimeter.
About the Authors

Sidharth Kaushal is the Research Fellow for Seapower in the Military Sciences Department at RUSI. His research covers the impact of technology on maritime doctrine in the 21st century and the role of seapower in a state’s grand strategy. Sidharth holds a doctorate in International Relations from the London School of Economics, where his research examined the ways in which strategic culture shapes the contours of a state’s grand strategy.

Magdalena Markiewicz works as a Project Officer in the Military Sciences Department at RUSI. She holds a Master’s degree from the London School of Economics, a BA in International Negotiations from the Warsaw Collegium Civitas and a BA in Chinese Language from the Capital University of Economics and Business in Beijing. She is fluent in Mandarin Chinese. The focus of her research revolves around Chinese security, Chinese relations with the EU and Chinese military reforms.