Key Trends and Drivers in Military Modernization in the Indo-Pacific: Implications for Australia and Responses[1]

Bates Gill, Yves-Heng Lim, Antoine Levesques, Adam Lockyer, Fred Smith, Rahul Roy-Chaudhury, Viraj Solanki and Andrew T. H. Tan,[2]

Word count: 26,188 words (excluding abstract, executive summary, table of contents, reference list and biographies).

Abstract

This project addresses the priority Defence policy topic of Accelerating Regional Military Modernization (and Asymmetric Advantages). It assesses the trends, attributes and drivers of accelerating military modernization in the Indo-Pacific, in order to understand and clearly delineate the challenges facing Australia. The report then proceeds to examine the roles of the key actors in this phenomenon, namely, China, the United States and India. Finally, the project puts forward and assesses potential Australian responses in the face of the region's accelerating military modernization dynamic.

[1] This activity was supported by the Australian Government through a grant by the Australian Department of Defence. The views expressed herein are those of the authors and are not necessarily those of the Australian Government or the Australian Department of Defence.
[2] The authors gratefully acknowledge the invaluable contribution of the following research assistants: **Nell Bennett, Dr Jiye Kim, Stella Celine Kim, Dr Minran Liu.**

Executive Summary

Due to rapid economic growth and increasing military expenditure led by China and India, the twenty-first century will be the century of the Indo-Pacific, reshaping the strategic landscape and maritime dynamics of the region. Military expenditure in the Indo-Pacific has increased spectacularly over the last three decades, more than trebling in real terms from 1990 to 2020.

Arms race dynamics appear to be at work, attributable partly to accelerated military modernization by Japan, India and a number of Southeast Asian nations, which in turn has largely been a response to the power shifts created by the transformation of the Chinese military. There is also an emerging question over whether any nation will be able to control the commons. China's anti-access/area denial (A2/AD) capabilities greatly complicate the US' ability to assert control over the regional commons. However, other regional actors have arguably started to counter, and may be able to deny, China's control of these same commons.

A complex set of factors explains the arms modernization phenomenon in the region. They include geostrategic factors, such as the rise of China, the intensification of the US-China strategic rivalry due to China's increasingly assertive challenge to US dominance in the region, the on-going role of Russian arms sales, and the presence of significant inter-state tensions with the increased potential for open war particularly over territorial disputes. In addition, there are also non-geostrategic factors at work, such as the region's overall high economic growth, technological change and advancement (an important independent variable), the enhanced importance of maritime security as a result of globalisation and the global interlinked economy, the impact of domestic politics on foreign policy behaviour, the role of symbolism and prestige in arms acquisitions, and the under-appreciated role of corruption as a driver in arms procurement.

Looking ahead, the most important factor driving the accelerated military modernization of the Indo-Pacific region will be China's growing military power and its increased willingness to wield and deploy that power. This creates a classic 'security dilemma', in which the measures one country takes to improve its security is perceived by others as a threat to their own. This action-reaction dynamic lies at the heart of the strategic relationship between the

United States and China and drives the military modernisation efforts of the two powers. In addition, many of China's closest neighbours are also either allies or seeking closer defence ties with the US, which further drives the regional defence modernisation dynamic.

This report also considers the question of India as a counterweight to China. India's external balancing through increased defence and strategic ties with the US, Australia and Japan as well as an active role in the 'Quad' grouping is expected to grow despite India's refusal to condemn Russia's invasion of Ukraine. However, the nature and extent of these ties will be constrained due to India's geographic contiguity and trade relations with China and its desire to avoid an escalation of conflict with a more powerful neighbour. In addition, a reduction in the Indian navy's planned force levels, ongoing delays in warship construction and a continuing inability to maximise its geographical/island-based leverages for power projection could erode its advantages in the Indian Ocean vis-à-vis the Chinese navy by the end of the decade.

Nonetheless, Australia can still leverage India to increase its strategic options by expanding coordinated maritime air surveillance/maritime dominance awareness capabilities in the eastern Indian Ocean, deepening their military interactions, cooperating more closely diplomatically in relation to the small island states in the Indian Ocean, sharing naval intelligence documenting Chinese military surface and underwater activities across the Indian Ocean region, and taking steps to reassure India over AUKUS.

The report concluded with an assessment of the implications of the regional arms modernization phenomenon for Australian defence strategy. The report argues that procurement time must be shortened and the arms procurement process made more agile and capable of responding quickly to a changing regional environment.

In addition, while Australia is now vulnerable to long-range attacks and other forms of coercion, this has not entirely negated Australia's geographic advantage. As no state in the Indo-Pacific possesses the capabilities to launch a major conventional attack on the Australian mainland without a forward operating base, it is essential that Australia prevent any potential rival from establishing such a presence in Southeast Asia or the South Pacific. Australia's traditional focus on projecting expeditionary force beyond its immediate region has resulted in some diminished interest in the South Pacific, leaving a potential power

vacuum in the region. If Australia wants to ensure that no foreign power acquires the ability to threaten its territorial integrity, it needs to expand its influence in its own region, and work with regional partners who share its strategic vulnerabilities to keep the Indo-Pacific from becoming a more dangerous neighbourhood. This however can only happen through serious and sustained diplomatic, economic and military investment.

Table of Contents

Abbreviations

A2/AD	anti-access/area denial
AI	artificial intelligence
AIP	air-independent propulsion
ASEAN	Association of Southeast Asian Nations
ASM	anti-ship missile
ASuW	anti-surface warfare
ASW	anti-submarine warfare
C4ISR	Command, Control, Communications, Computers (C4), Intelligence, Surveillance and Reconnaissance
DPRK	Democratic People's Republic of Korea
IAF	Indian Air Force
ICBM	intercontinental ballistic missile
JMSDF	Japan Maritime Self-Defence Force
LAC	Line of Control
LACM	land-attack cruise missile
LDP	landing dock platform
LHD	landing helicopter dock
PDI	Pacific Deterrence Initiative
PLA	People's Liberation Army
PLAAF	People's Liberation Army Air Force
PLAN	People's Liberation Army Navy
PLANAF	People's Liberation Army Navy Air Force
PRC	People's Republic of China
RAAF	Royal Australian Air Force
RoK	Republic of Korea
RoKAF	Republic of Korea Air Force
SLOC	sea-lines of communication
SSBN	Submersible Ship Ballistic Nuclear
SSK	submarine surface killer
SSN	Submersible Ship Nuclear
UAV	unmanned aerial vehicle
UNCLOS	United Nations Convention on the Law of the Sea

1. Introduction

This report addresses the priority Defence policy topic of *Accelerating Regional Military Modernization (and Asymmetric Advantages)* by first assessing the trends, attributes and drivers of the accelerating military modernization in the Indo-Pacific, in order to better understand the challenges that Australia faces. The report then proceeds to examine the roles of the key actors in this phenomenon, namely, China, the United States and India.

Finally, the project assesses what Australia could do to meet the growing challenges. As Australia is a small middle power with limited military capabilities, the challenges to its future defence and security environments emanating from the accelerating arms modernization in the Indo-Pacific are enormous, requiring realistic and innovative solutions.

2. The Indo-Pacific and the Quasi-Anarchic Regional Order

Due to rapid economic growth and increasing military expenditure led by China and India, the twenty-first century will be the century of the Indo-Pacific, reshaping the strategic landscape and maritime dynamics (Horimoto 2020:140, Markowski et al 2017:474-476, DFAT 2017, Chakraborty 2020:107). Asian countries have become leading arms importers since the end of the Cold War, further shifting the geopolitical focus towards the Indo-Pacific (Bell 2010:48). While countries in East and South Asia have become leading arms importers, most ASEAN states in Southeast Asia have also been enhancing their defense budgets and acquiring new equipment (Shambaugh 2021:8).

The Indo-Pacific is a vast and diverse region. To understand the key drivers of these developments, it is important to note that the 'Indo-Pacific' is not only a geographical construct, but also a political narrative (Denisov et al 2021:73, He and Li 2020:1, Pan 2014:454). The region of the Indo-Pacific literally refers to the junction of the Indian and Pacific Oceans, from the Korean Peninsula to the Persian Gulf and includes the United States, China, Japan, India, South Korea, Australia, ASEAN and other maritime states (He 2018:117, Horimoto 2020:140, Sukma and Perwita 2018:99). Pan (2014:454-455) asserts that the 'Indo-Pacific' is not a natural geographic space but instead a discursive construct with the potential

of far-reaching implications for regional stability, and that it was established mainly to justify the US presence and its regional alliance networks with the goal of hedging against the perceived threat of a China-centric regional order in Asia. Similarly, Denisov et al (2021) views the Indo-Pacific region as the US response to expanding Chinese influence. Other authors argue that India, Australia, the United States and Japan have utilized the strategic narrative of the Indo-Pacific in order to establish their favored approach of a conceptualized regional order (Barthwal-Datta and Chacko 2020:244, He and Li 2020:1). On the other hand, the term 'Indo-Pacific' remains less popular in Asian discourse, and has yet to be mentioned in Chinese documents, which use the term 'Asia-Pacific' (Denisov et al 2021:78, He 2019: 150, He and Li 2020:1). Indeed, China is convinced that the United States' Indo-Pacific strategy is meant to contain China's rise (He and Li 2020:2).

The Asian setting is often described as quasi-anarchical due to the presence of a hierarchical sub-system regarding security concerns, i.e. some states have chosen to renounce their authority in relation to security provision (Sun 2013:12-13). This is seen in the security dependence, in particular, of Japan, South Korea, Taiwan, Australia and to some degree, Singapore, on the United States, creating a hierarchical sub-system, maintained through the large-scale military presence of the United States in the region. Additionally, the increasingly assertive policies of China have impacted the maritime dynamics of the region, leading to proportional responses from India, Indonesia, Singapore, Taiwan, Japan, Australia, and Vietnam, in particular, to balance against China and to ensure uninterrupted freedom of navigation and overflight (Chakraborty 2020:107).

3. Trends and Attributes of Military Modernization in the Indo-Pacific

Military modernization in the Indo-Pacific has proceeded at a rapid pace over the last decades. This section examines the scope and characteristics of this modernization, revisiting questions related to the presence of an arms race dynamic in the region (Ball 1993, 2010, Tan 2013, Lee 2020, Wu 2021). The section proceeds in two steps: it first investigates possible signs of an impending arms race at the level of regional military expenditures, and then examines patterns of modernization of naval and air forces across the region.

3.1 Military Expenditures: Regional Trends

Defence budgets and military expenditures constitute an admittedly imperfect proxy to measure state power. They however play a pivotal role in enabling the modernization of a state's military apparatus and, when observed at the level of a region, their evolution can offer insights into the dynamics at work among different actors and whether an arms race might be in the making. The emergence of an arms race would translate into a sustained growth of regional military expenditures, and into a tit-for-tat pattern where increases made by one actor are countered and matched by other actors in the system.

Military expenditures in the Indo-Pacific region have increased spectacularly over the last three decades. Figures from SIPRI indicate that, measured at the level of the region, military expenditures have more than trebled in real value, surging from around US$150 billion in 1990 to US$517 billion in 2020 (in 2019 USD) (SIPRI 2022). This surge has been so massive that it has tilted the global distribution of military expenditure: while the Indo-Pacific Region was responsible for only a little more than one tenth of global military expenditures at the outset of the post-Cold War period, it is today responsible for more than one quarter of them. Whereas European military expenditures were three times larger than those of the Indo-Pacific region as a whole in 1990, nations in the Indo-Pacific are today spending 50 percent more than European nations on their defence (SIPRI 2022).

In a way, however, this spectacular increase in regional military expenditures is only partly a 'regional' phenomenon. The distribution of the increase among the different actors of the region has been, to say the least, very uneven.

At the top of the pyramid, China is in a category of its own. Beijing's military expenditures have grown eleven-fold in real terms between 1990 and 2020, from US$21 to US$244 billion (constant 2019 USD) (SIPRI 2022). China alone is responsible for 62 percent of the increase in regional military expenditures over the period. As of 2020, from a narrow regional perspective, Beijing has become strongly dominant as China spends roughly as much on its military as all the other nations of the region combined (US$244 billion against US$266 billion).

Well below the apex of the pyramid, a second group of nations can be clustered together under the umbrella notion of 'regional' or 'middle' powers, broadly defined. The group includes India, Japan, the Republic of Korea (RoK) and Australia, which, in 2020, were each accounting for more than five percent of regional military expenditures. The evolution of military expenditures for this small group appears relatively heterogeneous. While the defence budgets of India, the RoK and Australia have increased significantly over the period (by a factor of 2.3 to 3.5), Japan's has remained more or less constant. When compared with the growth rate of Chinese military expenditures, these relatively moderate increases appear inconsistent with the idea of an arms race, something that is even clearer when taking into account the fact that India and the RoK face other immediate threats. Perhaps even more puzzlingly, this moderation tends to suggest that the position of these nations has even fallen short of the traditional balancing response. For these Indo-Pacific middle powers, the military expenditures to GDP ratio range between 1 percent for Japan and 2.9 percent for India. These numbers are essentially similar to what they were a quarter of century ago and, for the RoK, India and Australia, remain well below the levels they reached during part of the Cold War era. From the narrow perspective of military expenditures, efforts to redress a rapidly changing regional distribution of power appear to have been modest at best, and in any case insufficient to impact the transformation of the region.

The more than twenty other nations that constitute the Indo-Pacific region, a group that most notably include Taiwan as well as all the members of ASEAN, represented together less than 15 percent of regional military expenditures in 2020. The military expenditures of this admittedly artificial and heterogenous group have doubled in real terms over the last twenty years, though this average covers widely diverging national situations. The most salient fact remains that the share of these actors in the overall regional balance has shrunk significantly over the last thirty years, suggesting a trend toward a region where military dynamics are increasingly dominated by a handful of larger powers.

Seen from the narrow perspective of military spending, the pattern of military modernization in the Indo-Pacific region does not fit the usual depiction of an arms race. While the growth of military expenditures as a whole has been spectacular, it appears to be the result not of a dynamic competition between different actors but of a one-nation sprint. What is missing from the picture is the interactive element of an arms race: the surge of Chinese military expenditures –the action in a purported arms race– does not appear to have elicited a

counterbalancing reaction of the same scale from the other actors of the region. Nonetheless, recent trends involving naval and air modernization suggest otherwise, particularly going forward.

3.2 Modernization: the Lens of the Commons

Since the turn of the millennium, the nations of the Indo-Pacific region have spent close to US$8 trillion on their respective military apparatus (SIPRI 2022). It is therefore hardly surprising that the military modernization process has been an all-encompassing phenomenon. The limited space available for this section naturally requires some choices. The focus here is placed on the naval and air aspects of this modernization. This choice creates limits to our understanding of some important dynamics. Pakistan's efforts to modernize its military have been, for instance, largely driven by its rivalry with India and this section does not cover the competition in the modernization of ground forces - including the acquisition of close to one thousand Al-Khalid and Al-Zarrar tanks by the Pakistan Army over the last twenty years (IISS 2022a). This choice stems from the assumption that the stability of the region is in large part determined by dynamics in what Barry Posen (2003) called the commons and competition for the command of the sea, air and space. 'East Asia', Robert Kaplan (2014) argues, 'is a seascape', an observation that is also self-evidently valid for the Indo-Pacific region as a whole. And while geography might not be destiny, it most certainly shapes the chessboard on which regional competition takes place and, in turn, the space in which regional military modernization dynamics operate.

3.2.1 Naval Modernization: Trends and Attributes

The last two decades have seen a radical and, in many ways, accelerating transformation of naval forces in the region. The dominant driver, unsurprisingly, has been the ascent of the People's Liberation Army Navy (PLAN). The PLAN entered the post-Cold War period as a large but almost entirely obsolete force and had only made marginal improvements by the end of the millennium (Cole 2001). Twenty years later however, China possesses a potent, modern navy that is mainly composed of platforms on par with their Western counterparts and which observers see as on its way to gaining a size advantage on the US Navy by the end of the decade (Fanell 2019). This modernization has been driven not only by the need for

qualitative improvements that would allow the PLAN to conduct traditional missions efficiently, but also by a transformation and an expansion of its missions.

From a chronological perspective, the PLAN's first priority has been to consolidate its sea denial capabilities in the 'near seas' through the acquisition of a capable submarine fleet. China started renovating its submarine force in the 1990s with the purchase of Kilo submarines from Russia, followed by the introduction of the indigenous Song class in the late 1990s-early 2000s and the more advanced Yuan class after 2006 (O'Rourke 2018). China today operates the largest fleet of diesel-electric submarines with twelve Kilo, twelve Song and eighteen Yuan as well as a few old Ming that are being retired (IISS 2022a). In parallel, the PLAN has benefited from the maturation of the Shang SSN program and currently operates six of the submarines, the second batch of four reportedly incorporating a vertical launch system for the YJ-18 ASM and LACM (Office of the Secretary of Defense 2021). A third generation SSN Type-095 is currently in development.

Over the last twenty years, China has put an increased emphasis on what has been recently officially termed 'open seas defence'. For the authoritative Science of Military Strategy published in 2015 by the National Defense University, the concept is intimately linked to the acquisition of 'aircraft carriers, large destroyers, strategic nuclear submarines, ocean-going supply ships, long-range shipborne aircraft' (Xiao 2015:339). In many ways, this depiction simply described the actual reorientation in China's naval acquisition that had taken place. At the most visible level, China now operates a pair of aircraft carriers - the 67,500-ton Liaoning and the slightly larger Shandong. At the time of writing, China is reportedly about to launch its first 85,000-ton Type-003 aircraft carrier (Funaiole, Bermudez and Hart 2021).

From the turn of 2010s, the PLAN has also acquired large numbers of surface combatants with robust air defence systems and improved anti-submarine capabilities that complements China's traditional strength in ASuW capabilities (O'Rourke 2018, Office of the Secretary of Defense 2021). Since 2000, the PLAN has acquired no less than twenty-seven Luyang and two Luzhou destroyers, in addition to the three Sovremenny destroyers delivered at the beginning of the 2000s. These have more recently been overshadowed by the launch of the 12,000-ton Renhai cruiser, which is comparable to the Japanese Atago, the Korean KDX-3 or the US Ticonderoga (Tate 2017). The PLAN has already commissioned three Renhai and at least five more will complete the first batch (Joe 2018). Thirty-two Jiangkai frigates, as well

as the last two slightly more dated Jiangwei frigates, have also joined the PLAN (IISS 2022a). China has also spectacularly increased its amphibious capabilities with the acquisition of eight 17,000 ton Luzhao LDP and the commissioning of the first two 35,000-ton Yushen LHD.

The modernization of the other naval forces of the region pales in comparison of the radical transformation of the PLAN. This, however, is not to say that regional developments have been insignificant. The navies of the Indo-Pacific region have acquired 55 attack submarines of various types over the last twenty years, leading to an increase by one third of the total number of submarines operated by the navies of the region. The trajectory is likely to continue to be ascendent as Australia will acquire at least eight SSN and India plans for six future Project 75I submarines. Surface forces have also undergone an accelerated process of modernization. Close to 100 new cruisers, destroyers and frigates have been introduced in the navies of the region over the last twenty years. The total number of principal surface combatants has remained remarkably stable as older ships have been retired, but the surface forces of the region operate, on average, more capable ships. The overall regional pattern of acquisition appears to be a mix of multiple dynamics, but there are here some signs that a naval arms race might be at work.

The Japan Maritime Self-Defence Force has undergone a rapid process of growth and modernization over the last two decades. Japan's submarine fleet has expanded by around one third since 2000, reaching twenty-two boats in 2022 (IISS 2022a). The JMSDF have acquired twelve Soryu over the last fifteen years, all equipped with AIP systems that give them extended underwater endurance. The first of the Soryu's successor, the even stealthier Taigei, has been commissioned in early 2022 and a class of at least eight boats is expected (Takahashi 2020). Surface forces have also been largely renewed and slightly expanded currently reaching forty-nine principal surface combatants. The JMSDF has acquired four helicopter carriers over the last twenty years, namely, two Hyuga and two Izumo. In 2018, an historical decision was made by the Japanese government to convert the two Izumo vessels so that they can accommodate Japan's new F-35B, providing Japan with its first aircraft carriers since the Second World War. Since 2010, a remarkable range of destroyers and frigates have joined the JMSDF. Four Atago/Maya Aegis-capable destroyers/cruisers and six Asahi/Akizuki destroyers have joined the four Aegis-capable Kongou and the fifteen other destroyers already operated by the JMSDF. The JMSDF is also in the process of acquiring the

first batch of Mogami frigates, twenty-two of which will be built over the next decade (Yoshihara 2020). This apparent acceleration of the 'revitalization' of the JMSDF is largely led by increasing concerns about Chinese intents and capabilities (Chang 2020).

The RoK Navy appears to be on a similar trajectory. With the commissioning of no less than ten boats since 2005, the RoK's submarine fleet has grown significantly in size reaching eighteen in 2022 (IISS 2022a). The new KSS-III submarine, first unit commissioned in 2021, constitutes a step change in the RoK's submarine capabilities. Much larger than its predecessor, at 3,600 tons, the KSS-III's design includes a vertical launcher system that allows the submarine to fire ballistic missiles (Dominguez and Kim 2021). The surface forces of RoK Navy have followed a parallel trajectory. Over the last twenty years, the number of major surface combatants has grown from nineteen to twenty-six. The RoK has acquired three Aegis-capable KDX-3 destroyers with three more in the pipeline, six multi-purpose KDX-2 destroyers and ten Incheon/Daegu frigates with four more to come, as well as two large Dokdo helicopter carriers. In late 2020, South Korea announced plans for a 40,000-ton aircraft carrier that will likely carry F-35s (Farley 2021). The RoK's naval modernization appears driven by concerns about a degraded security environment, but also by prestige concerns (Perrett 2021).

India's trajectory appears more complex, at the level of both submarine and surface forces. While India had some clear success in developing the sea-based leg of its nuclear deterrence with the launch of the Arihant, it has struggled to expand its conventional submarine fleet. The Indian Navy operates today a total of sixteen diesel electric submarines, consisting of a mix of Scorpene, Kilo and T-209, with a large number of the latter two having reached the thirty-year age mark. The Project 75I program, which will lead to six new submarines, has encountered some delays and changes and will only provide replacement for boats nearing retirement age (Pape 2017). This would mean that India will remain, in the foreseeable future, as far away from its stated objective of a fleet of twenty-four attack submarines as it was twenty years ago.

The surface forces of the Indian Navy have however, changed significantly. The Indian Navy now operates the 45,000-ton Vikramaditya (ex-Kiev) carrier and the indigenously built Vikrant is expected to be commissioned by mid-2022, with further plans for larger carriers. Since 2010, three Kolkota and one, of the four planned, Visakhapatnam destroyers have

joined the three Dehli launched two decades ago, allowing India to start decommissioning its aging Rajput. In the same way, the introduction of ten new frigates (Shivalik, Talwar batch II, and Kamorta) has provided replacements for a number of increasingly obsolete platforms. In spite of the progress, the Indian Navy is likely to fall short of its objective to build a 200-ship navy in the foreseeable future, as it possesses today less than half of the 60 principal surface combatants it has envisioned (Tellis 2020).

Smaller navies have also devoted significant efforts to the building of more potent naval forces. In Southeast Asia, Indonesia operates four Type-209 submarines and has announced plans for the purchase of the Scorpene, Vietnam has purchased six Kilo from Russia and Malaysia acquired a pair of Scorpene and intends to double this number. Singapore is in the process of replacing its four aging submarines with the German Type-218SG. Taken together, these developments tend to confirm Sam Bateman's conclusion that 'a submarine arms race may be developing in the [Southeast Asian] region' (Bateman 2018:16). Surface forces are also modernizing. Singapore has acquired six Formidable frigates, Indonesia two Martadinata frigates, and the Philippines two Jose Rizal frigates built by South Korea's Hyundai. A perhaps more surprising development is the construction by Myanmar of three frigates and the acquisition of two Jianghu frigates from China. In Northeast Asia, Taiwan has plans for eight submarines, but its naval forces have struggled to keep pace with the region after it acquired four Kidd destroyers from the US in 2003. Since then only two Perry-class frigates, which were then almost forty years old, have been added to Taiwan's navy.

In South Asia, the situation is less straightforward as the Pakistani submarine fleet shrunk after the retirement of its old Daphne submarines but it will acquire eight Chinese Yuan submarines before the end of the decade. Surface forces have also undergone some changes. Collaboration between China and Pakistan has gone beyond the simple purchase of Jiangkai frigates as the two countries collaborated to build Pakistan's four Sword frigates. Bangladesh has also benefited from closer ties with China as it received three Jianghu and two Jiangwei frigates that the PLAN had decommissioned over the period.

3.2.2 Air Force Modernization

The modernization of the air forces in the region follows a pattern that is largely similar to the one described above. China is, again, in a category of its own. At the turn of the

millennium, more than 90 percent of the PLA Air Force was composed of obsolete aircraft, most of them J-6/Q-5 and J-7, respectively copies of the venerable MiG-19 and MiG-21 that entered service in the Soviet Air Forces in the late 1950s-early 1960s. The only fourth-generation aircraft operated by the PLAAF was then the sixty-plus Su-27SK that China had acquired from Russia as part of a co-production agreement signed in 1996. Around twenty indigenously-built JH-7, an aircraft that the 'PLAAF has been reluctant to purchase due to concerns about limited performance such as low speed and limited maneuverability' had entered service in the PLAN Air Force (Saunders and Quam 2007:413).

Fast forward twenty years, the PLAAF and PLANAF are barely recognizable. The PLAAF and PLANAF have benefited from the maturation and mass production of 4th and 4.5th generation fighters, with the US Department of Defense estimating that 'more than 800 of 1,800 total fighters' operated by the two services were 4th generation aircraft (Office of the Secretary of Defense 2021:55). The 2022 Military Balance put this figure significantly higher, suggesting that more than 1,200 4th generation aircraft (including J-10, J-11, J-15, J-16, Su-27, Su-30 and Su-35) are currently operated the PLAAF or the PLANAF (IISS 2022a). China's indigenously-designed and -built aircraft appear today to be at least on par with their Western or Russian counterparts (Bronk 2020).

This spectacular progress of China's aerospace industry has noticeable consequences: while the modernization of the PLAAF in the 1990s was driven by the purchase of Russian aircraft, it is now driven by indigenous dynamics with the last 'off the shelf' acquisition of aircraft from Russia dating back to 2015, namely, twenty-four Su-35 (Dominguez 2018). As of 2022, around 525 J-10 and more than 300 J-11/Su27 are in service. Further development based on the J-11 have led to the introduction of the J-16 of which at least 170 have entered service and the carrier-based J-15, 50 of which have been produced. The PLAAF is also operating around fifty J-20 5th-generation aircraft, and while it remains difficult to assess the exact performance of the aircraft, Justin Bronk (2020:43) argues that the new variants of J-20 are progressively 'clos[ing] the technical gap'. China's second 5th-generation aircraft, the FC-31 is still in development with great uncertainties about when the aircraft will enter service. Recent tests have essentially confirmed that the plane will join the J-15 as the second Chinese carrier-borne aircraft (Salisbury 2022).

Finally, China has continuously modernized its fleet of H-6 bombers. A 2019 report by the US Defense Intelligence Agency (2019:33) noted: 'in 2015, the PLAAF began flying the H-6K medium-range bomber, the PLAAF's first aircraft capable of conducting strikes on Guam (with air-launched LACMs like the CJ-20), past the first island chain into the western Pacific.' The PLAAF has also introduced the H-6N variant, which is likely to carry either an air-launched ballistic missile or a hypersonic glide vehicle (Joe 2020). The PLAAF operates today around one hundred H-6K and a few H-6N, while the PLANAF has deployed around eighteen H-6J which carry the YJ-12, a 400km-range supersonic anti-ship missile (Joe 2020). China's ambitions for a long-range supersonic stealth bomber, the H-20, similar to the B-2 was announced in 2016 and is currently in development (Tate 2016, Bronk 2020).

In comparison with the spectacular qualitative leap of the PLAAF, change in the other air forces of the region has been more evolutionary. At the middle power level, the air forces of Australia, Japan and the RoK are undergoing a relatively rapid process of modernization as they transition to a mix of 4th and 5th generation fighters. The F-35 has progressively been introduced in the RAAF, the JASDF and RoKAF since 2018. Australia, Japan and the RoK have respectively committed to the acquisition of 72, 147 (of which 42 are F-35B) and 40 (with plans for 40 more, of which 20 are F-35B) aircraft (Grevatt 2019, Giovanzanti 2022). Japan and the RoK have also made significant investment in national projects with the JASDF acquiring 91 F-2 as replacement for its aging F-1, and the RoK Air Force acquiring 60 indigenously produced FA-50 light fighters. Both Japan and the RoK currently have further plans for indigenously produced next generation aircraft, respectively the F-X program and the 4.5th generation KF-21 (Giovanzanti 2021a, Grevatt 2021).

India has also made significant progress in the modernization of its air force, although from a less advanced baseline. India has procured 272 Su-30MKI since a first agreement with Russia in 1996, most of which are licence-built by Hindustan Aeronautics Limited (HAL). The 262 Su-30MKI currently in service constitute around 40 percent of the IAF, but it appears likely that more will be produced in the near future (Bedi 2020). The IAF also operates around sixty MiG-29 and India's pair of aircraft carriers will embark up to twenty-six MiG-29 each. As of 2022, the IAF had also taken delivery of twenty-six of the thirty-six Rafale ordered from France in 2016. The first sixteen of the planned 120 Tejas, an indigenously produced 4th-generation fighter, have also entered service and will ultimately replace its obsolescent MiG-21, of which 147 remained in service as of 2022 (Bedi 2015, Tellis 2020). India's fleet of

around fifty Mirage-2000 has benefited from massive upgrades that ‘is intended to extend the fighters' service life by 20–25 years’ (Rahul 2021). However, while the 115 Jaguar have reportedly benefited from some upgrades, New Delhi has balked at the US$2.4 billion price tag for the purchase of new engines and the Jaguar are likely to start being retired in the next few years (Kadidal 2022). India is currently developing a fifth-generation Advanced Medium Combat Aircraft that will ultimately serve as a replacement for the Jaguar, but the project is still in its initial stages and production is unlikely to start before 2030 at the earliest (Kadidal 2022).

In the rest of the Indo-Pacific, change has followed the same evolutionary pattern, though there are some signs that the pace of change might be accelerating. In Northeast Asia, the DPRK air force has been at a standstill for more than two decades (Defense Intelligence Agency 2021). Taiwan offers a mixed picture. On the one hand, the island’s ‘Mirage 2000-5 and F-5E/F fighters has suffered from aging issues that are compounded by a shortage of spare components’, while rumours have been recurrent about the possible mothballing or early retirement of the Mirage due to high operating costs (Stokes, Yang and Lee 2020:24). On the other hand, Taiwan’s 127 indigenous FCK-1 have undergone a mid-life upgrade between 2009 and 2017. Its 140 F-16 are being upgraded under a US$3.7 billion program (Giovanzanti 2021b). After fifteen years of waiting, Washington also approved the sale of 66 additional F-16 to Taiwan in 2019.

In Southeast Asia, Indonesia has progressively replaced its old Hawk and F-5 and operates today a mix of around thirty F-16, eleven Su-30 and five Su-27 (IISS 2022a). Under a US$22 billion plan, the Indonesian air force will however radically transform as it will acquire forty-two Rafale and thirty-six F-15 over the next decade (Giovanzanti 2022). Singapore now operates a fleet of 100 F-16 and F-15. In 2019, Singapore elected the F-35 as the replacement for its 60 F-16 and, as a first step, will acquire four F-35 for evaluation purposes with an option for eight more (Layton 2019). In other Southeast Asian nations, modernization efforts are more modest. Vietnam operates thirty-five Su-30 as well as a dozen of Su-27, but rumours regarding further acquisition have, to date, not materialized. The Royal Thai Air Force operates eleven Gripen and around one third of its fleet of fifty F-16 have been upgraded, while some of its F-5s have been upgraded and will continue to be in service until the end of the decade, before they are replaced by more modern aircraft. Malaysia has plans to streamline its air force, but projects to acquire the future replacement of its eight F-18 and

eighteen Su-30, which are plagued with significant readiness issues, have been postponed to the next decade (Giovanzanti 2022). Finally, the Philippines did acquire twelve Korean FA-50 light fighter aircraft in the mid-2010s, but further plans to purchase twelve F-16 have been derailed by budgetary constraints and Manilla might ultimately opt for the Gripen (Giovanzanti 2022).

In South Asia, Bangladesh and Sri Lanka's air force have atrophied significantly over the last two decades. In contrast, Pakistan benefited from the largesse of the United States after 9/11 and then from increased cooperation with China. Having received forty F-16 in the 1980s, the Pakistani Air Force took delivery of thirty-two additional aircraft under the 'Peace Drive' deal after 9/11 and purchased thirteen second-hand F-16s from Jordan in 2013 (Roblin 2021). This has left Pakistan with a fleet of seventy-five F-16 as at 2022 (IISS 2022a). The Pakistan Air Force also operates 125 JF-17, the result of cooperation between Chengdu Aircraft Industry Group and Pakistan Aeronautical Complex, and should take delivery of at least 60 more aircraft. The first batch of the thirty-six J-10 purchased from China have also been delivered to Pakistan (Jennings 2022). These acquisitions will allow Pakistan to retire its dwindling fleet of aging Mirage and J-7 over the next few years.

3.3 Concluding Analysis

Considered as a whole, the Indo-Pacific region has undergone a military modernization process on a significant scale over the last twenty years. The changes that the navies and air forces of the region have experienced raise a number of questions about the future of the Indo-Pacific. The first question relates to the presence of an arms race. There are signs that arms race dynamics might be at work. Part of the acceleration of the modernization process for Japan, India and a number of Southeast Asian nations have been largely a response to the power shifts created by the transformation of the Chinese military. A second question is what balance will emerge in the region. Some optimistic observers have argued that a regional balance of power will take shape as China's ambitions will be kept in check by its neighbours (Beckley 2017). There are, however, reasons to adopt a more sceptical view, as China's PLAN and PLAAF continue to grow a much higher pace than their regional counterparts, with few signs that a coordinated counterbalancing effort is taking shape. Finally, there is an emerging question over whether any nation will be able to control the commons. China's A2/AD capabilities make it increasingly difficult for the US to ascertain control over the

regional commons, but other regional actors have arguably started turning the table on China and might further increase their ability to deny China control of these same commons.

4. Key Drivers of Military Modernization in the Indo-Pacific

4.1 Geostrategic Factors

4.1.1 The Rise of China

The notion of 'China's rise' is generally attributed to the narrative developed under Xi Jinping following the road map of 'Peaceful Development' and the 'Chinese Dream of national rejuvenation', as well as its Centenary Objectives of becoming a relatively prosperous society and an international leader in innovation (Xi 2017, State Council 2015, Erickson 2019:75). China's assertive foreign policy behaviour in the South and East China Seas, the increasingly urgent need to resolve the 'Taiwan question' and the Belt and Road Initiative are perceived as ways of revitalising Chinese foreign policy (Feng 2016:151, Erickson 2019:89, Hu 2019:10). In order to achieve all of these however, a strong 'world class' military is considered necessary (Erickson 2019:75).

For China, the Indo-Pacific is essential for protecting its influence and maritime interests (Liu and Jamali 2021:25). Moreover, in tandem with China's rise as a global power, Alfred Mahan's argument that sea power is the key to global dominance through trade routes and strategic chokepoints is often reflected in Chinese maritime strategy, given its emphasis on developing a strong navy and the establishment of overseas bases (Sarkar 2020:114). According to de Castro, one of China's key long-term goals is to showcase its naval power in the far seas of the outer periphery of the first-island-chain as well as in the northern Pacific (De Castro 2017:208).[3] This will support China's ambitions as a regional and global power.

[3] The 'first island chain' refers to the line of major archipelagos immediately east of the Asian mainland, extending from the Kamchatka Peninsula in the north to the Malaysian Peninsula in the south, and encompassing the Yellow Sea, East China Sea, Taiwan Strait, and South China Sea. These archipelagic features include the Kuril Islands, the main Japanese islands, the Ryukyu Islands, Taiwan, the northern and western Philippines, Borneo, and the Indonesian Riau Islands. The 'second island chain' refers to a line roughly extending from the Japanese home islands to the Mariana Islands, including the U.S. territory of Guam (home to large U.S. naval and air force bases), and continuing southward to Papua New Guinea.

As the largest importer of petroleum products in the world and with over 80% of its oil imports coming from the Middle East and Africa having to traverse the sensitive bottlenecks of the Straits of Malacca and Hormuz, the Indian Ocean is strategically important to China (Upadhyaya 2017:64, Robertson et al 2020: 295, Sukma and Perwita 2018:90). This has led to the establishment of strong economic ties with its littoral states, including the construction and development of ports, and potential land transport lines (Upadhyaya 2017:79, Robertson et. al. 2020:295). In addition, the strategic location of the South China Sea crossing through China's sea lines of communication (SLOCs), on top of its energy reserves and marine resources, has also made it important to China (Garcia 2019:56, Shambaugh 2018:89).

Importantly, Taiwan signifies national prestige and territorial integrity for China (Dibb 2019: 17). The unification of Taiwan with the mainland is regarded as the top national priority (Erickson 2019:75). China's fear that the US could counter its efforts at reclaiming Taiwan has driven it to increase its capacity for sea denial and control especially inside the first island chain, while improving its power projection in the maritime air realm in the second island chain through the expansion of its ballistic and cruise missile arsenal as well as the development of aircraft carriers (Scobell 2021:80). The goal would be to accomplish a swift and decisive victory against Taiwan if and when the time comes (Karim 2014:193). Taiwan is therefore one of the most volatile flashpoints in the region (Moon et al 2021:293, Schreer and Tan 2020:1-5).

While China claims its military modernization is completely defensive, it has, in tandem with its increasingly assertive foreign policy, had a snowball effect on other states in the Indo-Pacific, which have begun to develop their armed forces as a response (Karim 2014: 205). The deteriorating regional security environment and threats to freedom of navigation have resulted in countries such as India, Indonesia, Vietnam, Taiwan, Japan, Australia, South Korea and Singapore increasing their efforts at military modernization (Chakraborty 2020:107, Liu and Jamali 2021:6). This reflects underlying regional mistrust in China's 'peaceful rise' (Sukma and Perwita 2018:94).

4.1.2. The US-China Rivalry

China's rise and its challenge to the US in Asia has made the US increasingly concerned about China as a threat (Scobell 2021:78, Davis 2020:80). The emergence of great power

rivalry between the US and China is visible through their comprehensive competition (Shambaugh 2021:1). The COVID19 global pandemic in 2020 has turbo-charged tensions between the two great powers, given its outbreak in Wuhan, China, and allegations by the US of a cover-up over a laboratory leak that resulted in the pandemic (CNBC 2021). China also recovered quickly from the initial outbreak, with its economy being the only major economy to grow while the US and the West suffered economic contraction. This has further shifted the global balance of power in China's favor.

The rapid growth of China's military capacities and influence are critical factors shaping US strategic and security partnerships in the Indo-Pacific (Kumar et al 2020:223). The US strategy of a 'Free and Open Indo-Pacific' has led to the region becoming the catalyst of geopolitical power balancing (Basu 2020:165). The rebalancing' strategy of the US has been countered by China's 'one belt, one road' initiative, which demonstrates China's confidence in competing with the United States (Zhang 2020:242). Given the economic and strategic importance of the region to the future of the United States, its interests are shifting more towards the Indo-Pacific, epitomized by the Obama Administration's pivot to Asia in 2011 and the strengthening of its regional alliances, particularly with Japan, South Korea and Australia (White House 2011, DFAT 2017). These US moves however, have led to the deepening of rivalry and the mutual securitization with China (Park 2017:311).

China views the US-Japan alliance as designed to contain its military modernization (Garcia 2019:38-39). The US-led Quadrilateral Initiative (or Quad) between India, US, Japan and Australia has also been perceived by China to be a potential 'Asian NATO' designed to counter China's rise (Sarkar 2020: 110-111, Kumar et al 2020:119). The US has made recent moves to strengthen the Quad. Recent Quad naval exercises include the August 2021 four-day Malabar military exercise near Guam which involved complex surface, sub-surface and air operations as well as live weapon firing drills, joint manoeuvres and tactical exercises (Zhou 2021, Rajagopalan 2021).

On the part of many states in the region, the US presence in the Indo-Pacific is seen as vital to counterbalance China's growing power and influence. Since the end of World War Two, the US has been the major maritime and air power in Asia, dominating the region through its network of alliances and partnerships (Saunders and McGuiness 2020:2). However, the inability of the United States to prevent China's island-building projects in the South China

Sea has led to questions over the trustworthiness of lasting US security pledges in Asia (De Castro 2017: 213, Robertson et al 2020: 293, Kim 2016: 65, Pei 2018: 44). The questions over the ability of the US to maintain its dominant position further add to the unstable and complex power dynamics in the region.

States in the region thus understand the need to shore up the rules-based regional order that has ensured regional stability since 1945 and which is now being challenged by China. The US-China rivalry has therefore also led to accelerated military modernization and expansion programs in a number of countries in the Indo-Pacific, including Australia (Wu 2021:214). The International Institute for Strategic Studies (IISS) has observed, for instance, that in Southeast Asia, Singapore and Vietnam in particular have demonstrated greater urgency than other states in the region in developing their defence capabilities, due to their concerns over the deteriorating regional security environment (IISS 2021:222). While Indonesia has criticised Australia over AUKUS, it has also reacted to the deteriorating regional security environment by actively building up its naval and airpower capabilities (Dibb and Brabin-Smith 2021:9, Strangio 2021, ADBR 2021). In August 2021, both Indonesia and the US also began a strategic dialogue on issues that include defending the freedom of navigation in the South China Sea (Reuters 2021a).

At the time of writing, the COVID 19 global pandemic that began in 2020 has led to evidently heightened tensions between China and the United States. Their struggle for power in the Indo-Pacific has been complicated by the economic impacts of the pandemic, but it is likely that should China emerge stronger after pandemic, it will enjoy the upper hand as it will have greater economic resources on top of being the power in propinquity. However, it is less clear if the US and its allies in the region would accept such an outcome. China's rise as a military power, US-China tensions, and their impact on the regional military modernization dynamic are discussed in section 5.0 below.

4.1.3. The On-going Role of Russia

Russia has the potential to balance against other powers in the region due to the lack of a colonial presence and therefore provides little concern to most states (Lunev and Shavlay 2018:715). However, for the present, it is Russian arms sales that have had an impact on security relationships in Asia, such as its weapons trade with China which has boosted the

latter's capability to challenge the US and its allies in the Indo-Pacific (Blank 2020:263). Russian arms sales to China have fluctuated in the past two decades, reflecting Moscow's awareness of China's military modernization and its practice of copying military technology, resulting in competition from China's arms industry (Kaczmarski 2016:423).

While there is an emerging Sino-Russian military relationship, they do not coordinate their responses regarding their territorial disputes with Japan, and Russia has followed an independent security policy in the region (Kushin and Lukin 2018:621). Russia is also attempting to expand its influence through arms sales to other countries in the region, further undermining the prevailing US alliances in the Indo-Pacific (Asare 2020:8). Indeed, India, together with Vietnam, are the region's largest imports of Russian arms (Kuczyński 2020, Kushin and Lukin 2018:621, Watts et al 2016:436). Russia's invasion of Ukraine in February 2022 also had a significant impact on the region, as it took place after the 'no limits' strategic cooperation pact between Russia and China (President of Russia 2022). It further raised fears in the region over the possibility that China too would use force to revise the current regional order on account of its territorial claims over Taiwan, the East and South China Seas and along its border with India.

4.1.4 Interstate Tensions

The possibility of interstate conflict has been the source of increasing military expenditure in the Indo-Pacific (Tan 2020:22). Many of these potential interstate conflicts arise from land border or maritime disputes, for instance, along the China-India land border, and in the South and East China Seas. Maritime disputes in particular have led to more challenges to sovereignty over seas and airspace, bringing the freedom of navigation into question (DFAT 2017).

Of the world's top four importers of conventional arms from 2011-2020, three are states located in the Indo-Pacific: India ranking first with a spending of US$33.1 billion, China ranking third with US$12.9 billion and Australia ranking fourth with US$12.1 billion (SIPRI n.d.). India's rise as an economic and military power has further contributed to the region becoming a hotspot in the rivalry between India and China (Sarkar 2020:119, Liu and Jamali 2021:30). As a result of the on-going land border conflict with China, over which both

countries had fought a war in 1962, India perceives its greatest strategic threat to emanate from China (Weisko 2019:198, Dibb and Brabin-Smith 2021:9).

Such threat perceptions appeared justified when 20 Indian soldiers were killed in 2020 in the most serious clash with China in 40 years along the disputed land border between the two countries (BBC 2020). China is thus seen as India's principal security referent, even as tensions with Pakistan, with which India has fought three wars since independence, continues to be salient amidst the on-going nuclear stand-off between the two countries. China has also emerged as the key arms supplier to Pakistan, as the latter tries to redress its conventional arms inferiority vis-à-vis its key security referent, India. The growing Pakistan-China strategic and military cooperation however, has further alarmed India.

India has been increasing its maritime cooperation with the US and Japan to counterbalance China's presence in the Indian Ocean, becoming a more active member of the Quad in recent years. India has also taken steps to increase military cooperation with ASEAN states such as Singapore, Vietnam, Myanmar, Malaysia and Indonesia (Garver 2016:754, Liu and Jamali 2021:28, Kumar et al 2020:225). In addition, India is attempting to strengthen its leadership role and better counter-balance China in the Indian Ocean through naval cooperation based on capacity building with countries such as Sri Lanka and the Maldives (Upadhyaya 2017). India has also begun naval operations in the South China Sea to counteract China's expansion towards the Indian Ocean (Weisko 2019:199).

Japan is another key state player in the Indo-Pacific, on account of its high levels of military readiness and advanced military technology (Babones 2021). Apart from being the subject of nationalistic anti-Japanese sentiments in China on account of the Japanese invasion of China prior to 1945, Japan has ongoing territorial disputes with China regarding the Senkaku/Diaoyu islands in the East China Sea, marked by Chinese air and naval intrusions into the potentially oil and gas rich area (Garcia 2019:115, Kim 2016:65). China's assertiveness in the region and the power transition in East Asia after the Cold War have given impetus to Japan's contemporary military modernization (Garcia 2019:110, De Castro 2017:206). Japan has thus revised its military strategy towards a more assertive build-up of its military capabilities, including improving its ability to defend its more remote islands (Park 2017:309).

Japan's relations with China exist in a position of mutual securitization, which reinforce military modernizations on both sides (Garcia 2019:42). Japan has been receiving increasing US support to reinterpret its 'collective right to self-defense' including permitting Japanese troops to be deployed abroad (Kim 2016:68). Japan's counterbalancing strategy also includes close security, political and economic relations with other littoral ASEAN states such as Singapore, Indonesia, the Philippines and Vietnam (Karim 2014, De Castro 2017:214). Japan has also enhanced multilayered security cooperation with compatible states such as South Korea and Australia (De Castro 2017: 216). It is also an active member of the Quad, together with the US, Australia and India.

In late 2021, in response to the deteriorating regional security environment as a result of China's continued aggressive moves, such as repeated incursions into Taiwan's airspace, Japan announced that it would eventually double its defence spending to 2% GDP (Reuters 2021b). In February 2022, following Russia's invasion of Ukraine, former Prime Minister Shinzo Abe also broached the previously taboo subject of stationing US nuclear weapons in Japan (Asahi Shimbun 2022).

Another flashpoint is the Korean peninsula, where North Korea, which has been supported by China, has posed an existential threat to South Korea on account of its vast conventional forces, massive artillery forces aimed at its capital, Seoul, and its development of nuclear weapons, including ballistic missiles that could directly threaten the United States. Given the existence of the US-South Korea defence treaty, a conflict on the Korean peninsula would inevitably involve both China and the US.

South Korea possesses major military capabilities and a growing local defence industry, driven largely by the existential threat from a nuclear-armed North Korea (Babones 2021). However, South Korea's emerging partnership with China further complicates the East Asian strategic environment, as epitomized by its cautious approach in joining the US-led advanced regional anti-ballistic missile defence system known as Terminal High-Altitude Area Defence (Kim 2016:66). While it continues to rely on the US alliance in the face of a nuclear-armed North Korea, it is developing greater defence self-reliance through a number of local defence projects such as a light aircraft carrier, nuclear-powered submarines, the KF-21 Boramae stealth combat aircraft, new missile systems, and satellites (Arms Control Association 2021). Given the deteriorating security environment in the region as a result of aggressive moves by

China and North Korea, public opinion in South Korea has shifted in favor of acquiring nuclear weapons (Northeast Asia Security Institute 2022).

Following revelations of substantial Chinese influencing operations, Australia blocked Huawei from Australia's 5G network. After the outbreak of the COVID19 global pandemic in 2020, Australia also called for an investigation into its cause and origin. China has responded with a range of economic sanctions against Australia (ABC 2019, Hartcher 2021, Crossley and Needham 2021). It is this context of deteriorating relations with China and the perceived challenges posed by China to the existing regional security architecture that has underpinned Australia's determination to improve its defence capabilities with US support and an additional US$190 billion over the next decade. This includes heavy investments in nuclear-powered submarines, amphibious warfare vessels, new surface warships, F35 stealth fighters from the US, and the joint development with the US of hypersonic missiles (ABC 2021, News.com.au 2021, McGuirk 2020, Brimelow 2021, Department of Defence 2016:45).

In 2021, the US, Britain and Australia also announced the new AUKUS (Australia, UK and the US) security partnership, under which the US and Britain would help Australia establish a nuclear-powered submarine fleet and the US would place more troops and aircraft including bombers in Australia (ABC 2021). China's response has been vitriolic, including suggestions in its media that Australia would become a 'potential target for a nuclear strike' in a conflict (Global Times 2021). In 2022, China also concluded a security agreement with the Solomon Islands, as part of its attempts at establishing a presence in the South Pacific, Australia's strategic backyard. The agreement could potentially pave the way for Chinese bases in the Solomon Islands, resulting in Australia coming within range of Chinese naval forces (ABC 2022).

Finally, as a whole, the ASEAN states in Southeast Asia have been involved in the on-going process of arms modernization. A key driver is the problematic operational environment of the South China Sea which requires a consistent military presence to defend territorial claims, in the context of maritime territorial disputes involving China, Vietnam, Philippines, Indonesia, Taiwan, Malaysia and Brunei (Wu 2021:219). Vietnam, Philippines, Indonesia, in particular, are making efforts to improve their maritime deterrent capabilities. After a number of incidences over the waters around the Natuna islands which China has laid claims to, Indonesia has pushed ahead with significant investments in new weapons systems, such as

the new KF-21 stealth aircraft jointly developed with South Korea, Rafale combat aircraft from France, new submarines from South Korea and new frigates from Italy and Japan (Dibb and Brabin-Smith 2021:9, Strangio 2021, ADBR 2021).

Vietnam's relations with China have also been problematic given that both countries had been in conflict in the Sino-Vietnamese war in 1979, with both countries also clashing over the Spratly and Paracel Islands. Vietnam has relied primarily on Russia for arms, such as Kilo-class submarines and naval warships, and has also received assistance from India, which has provided training for Vietnam's Su-30 combat pilots (Watts et al 2016:438).

However it is Singapore which has the largest defence budget in Southeast Asia, consistently spending of 3-4% of GDP on defence. In 2020, Singapore spent US$10.85 billion on defence, more than its much larger neighbor, Indonesia, which spent US$9.4 billion, the second largest defence budget in the region (SIPRI n.d.). This is an indication of Singapore's threat perceptions revolving around the ethnic Chinese-dominated city-state's small size in the midst of much larger Muslim majority neighbors with which it has had a history of tensions and conflict (Tan 2004:43-46). More recently, Singapore has, like Australia, become more apprehensive over regional strategic developments as a result of China's rise, and has responded by deepening its military and security cooperation with the US (Lee 2016, Straits Times 2019). Singapore has or is in the process of procuring new weapons systems, such as Hunter armored infantry fighting vehicles, Aster 30 air defence missile systems, F35 combat aircraft, H225M medium-lift and CH-47F heavy-lift helicopters, German-built Type 218SG submarines and new amphibious warfare vessels (Pioneer 2019, Straits Times 2020).

4.2 Non-Geostrategic Factors

4.2.1 Economic Growth

Economic growth is closely connected to military modernization as it is essential for establishing a modern military, with continued GDP growth generally regarded as a key variable (Karim 2014:192, Markowski et al 2017: 476, Ball 1993:81). Although the military burden, i.e. military spending relative to GDP, has not increased, economic growth allows for the further development of military capabilities (Robertson et al 2020:290).

China is one of the fastest growing economies in the world with real annual GDP growth averaging 9.5% from 1979 to 2018, becoming, on purchasing power parity (PPP) basis, the world's largest economy, manufacturer, merchandise trader, and holder of foreign exchange reserves (EveryCRSReport.com 2019). India has also shown impressive economic growth and is projected to become one of the top three economic powers within the next decade (IBEF 2021, ADB 2021). China and India's rapid economic growth in recent decades has provided the funding for their respective military modernization initiatives. This explains the fact that in terms of defence spending in 2021, China is ranked second in the world at US$207.3 billion and India fourth at US$65.1 billion (IISS 2022a:9).

Some Asian states have also developed rapidly, enabling them to generously fund military modernization. For instance, Singapore is today one of the wealthiest countries in the world, with a per capita income (PPP adjusted) of US$98,526 in 2020, the second highest in the world (World Bank n.d.). This underpins its defence budget of US$10,856 million in 2020, the highest in Southeast Asia (SIPRI n.d.). Not surprisingly, Singapore has, despite its small population of 5.8 million in 2020, the most advanced armed forces in Southeast Asia.

As a whole, Asia also overtook Europe in defence spending in 2012 (Reuters 2013). In 2019, the World Economic Forum predicted that Asia's GDP would soon overtake the GDP of the rest of the world combined, with the region contributing 60% of global growth by 2030 (World Economic Forum 2019). As the Indo-Pacific is becoming the most pivotal region in the world in economic terms, it is not surprising that it will also lead the world in military modernization.

4.2.2 Technological Change and Advancement

Technological change has enabled countries to develop their military capabilities (Robertson et al 2020:290). As Barry Buzan observed, the anarchic international order creates the fear of rivals acquiring a military technological advantage, thus causing an endless process of new weapons development even in the absence of other factors or causes (Buzan 1987:109). Moreover, 'by diffusing the products of qualitative advance, the leading-edge states inexorably raise the standard of military power in the lower rank states' (Buzan 1987:31). The technological imperative is thus an important independent variable when analyzing the causes of military spending and acquisition (Tan 2020:19).

As Ball observed in 1993 and 2010, the need to keep up with technological progress has been an on-going driver of military modernization in Asia (Ball 1993, 2010). More recently, Davis has identified three realms of technological change in the military that will determine the future of warfare: the new domains of space and cyberspace, the combination of AI and autonomous systems adding a new method of attack and defence, and the introduction of high-speed platforms and systems (Davis 2020:83). This has set the stage for technological competition between the US and China, epitomized by the US Strategic Competition Act of 2021, which is aimed at countering China's own heavy investment in new areas of technology, including in military technology (Congress.gov 2021).

4.2.3 Enhanced Importance of Maritime Security

Globalisation has led to the enhanced importance of sea-borne trade, with 90% of trade today being sea-borne (OECD n.d.). Moreover, the UN Law of the Sea Convention in 1982 granted littoral states vast maritime territories in the form of 370 km. Exclusive Economic Zones (UN 1982). The need to guard valuable maritime resources and patrol long sea-lines of communications have resulted in significant naval military modernization programs throughout the Indo-Pacific, with many littoral states investing heavily in missile-armed surface warships, maritime reconnaissance aircraft, UAVs, submarines, amphibious warfare vessels and even aircraft carriers.

The significance of maritime security in the Indo-Pacific is highlighted by the spread of maritime strategic competition in East Asia to the Indian Ocean (Ball 2010:44). In addition, there exists a fundamental difference regarding maritime governance on the part of the US and its allies, and China. The principle of the 'freedom of the seas' which the US and its allies in the region adhere to, is articulated in the United Nations Convention on Law of the Sea (UNCLOS) (Scobell 2021:82). The US interpretation is that military vessels can operate freely in international waters anywhere outside the set 12 nautical miles that limit a country's territorial waters (Scobell 2021:82).

However, the existing rule of law established by UNCLOS on defining maritime territory is not in line with China's sovereignty claims in the South China Sea (Wu 2021:213). Indeed, China rejected the findings of the Permanent Court of Arbitration in 2016 which ruled against

its claims in the area. As sea-power is the essential and decisive factor regarding maritime security, increased concerns over maritime security has led to the acceleration of an interactive and competitive process of naval arms acquisitions in the Indo-Pacific (Ball 2010:42-44, Sukma and Perwita 2018:96).

4.2.4 Domestic Politics and Security

Many states in Asia have experienced political transformation processes and revolutions after 1945, causing domestic security to be a widespread concern due to periods of political instability (Ayson 2015:151). The problematic process of building a legitimate nation-state out of artificially constructed colonial possessions following independence has created the potential for many internal conflicts. In such contexts, the military is often regarded as the only institution capable of responding to domestic security problems, enabling it to exercise substantial political influence, particularly where non-military institutions are not quite developed (Ayson 2015:153).

Domestic politics can therefore be a key determinant of foreign policy behavior, influencing administrative and decision-making institutions that result in state actions as responses to domestic catalysts (Schweller 2017:16). Thus, in the case of Australia, 'defence industry policy has historically been captured by domestic industry and employment policy objectives, imposing resource costs that stretch the defence budget more thinly, undermining national security' (Kirchner 2021:24). In Indonesia and the Philippines, internal security challenges have been key factors in their military modernization though they have also begun to respond to external threats in more recent times (Markowski et al 2017:476, Tan 2020a:33).

In the case of Indonesia, for instance, its security perspectives have been heavily influenced by its vast geographic spread, immense diversity, and the tumultuous history accompanying its independence and its aftermath. This is reflected in the motto *Bhinneka Tunggal Ika* or Unity in Diversity, as well as the strategic doctrine of *Wawasan Nusantara* or Archipelagic Outlook, the objective of which is to ensure the geographic unity of the vast archipelago as well as the unity of its vastly diverse population (Anwar 1996:4-6).

Since 1998, successive Indonesian governments have paid increasingly greater attention to addressing the weaknesses as well as potential of Indonesia's archipelagic nature. According

to Anwar, ‘strengthening the Indonesian navy, ensuring better control over Indonesia’s outermost islands, finalising maritime boundaries, improving law enforcement at sea to ensure the security and safety of navigation, husbanding the country’s rich marine resources and improving sea transportation to reduce the isolation of the eastern islands’ have since become national priorities (Anwar 2018). This is reflected in the adoption in 2005 of the Minimum Essential Force (MEF) military modernization plan aimed primarily at developing a navy that could patrol the entire extent of the Indonesian archipelago by 2024 (Schreer 2013:10).

4.2.5 Symbolism and Prestige

Symbols add value to a state’s status and prestige, and are known to motivate state behavior (Kinsella and Chima 2001:354). According to Thayer (2018:429), arms procurement occurs for a various reasons, including gaining prestige. Advanced weapons systems serve as powerful symbols of prestige and can add to a state’s power projection, with examples present with the Chinese and US militaries (Ball 1993:91). Military procurement of status symbol weapons systems further confirms the belief in modern weaponry as a characteristic of modern nations (Suchman and Eyre 1992:151).

German naval policy during the Kaiserreich (i.e. the German Empire from 1871 to 1918) and the Indian development of nuclear weapons are two examples of states attempting to influence their status due to their belief of not being respected enough on the global stage, leading to expensive armament programs (Fikenscher et al. 2015:99). Furthermore, China’s quest for nuclear arms is also commonly associated with its wish to claim prestige and not just for enhanced security (Haynes 2020:49). A Chinese general has also stated that ‘all of the great nations in the world own aircraft carriers – they are symbols of a great nation’ (BBC 2011).

Several examples highlight the symbolism behind arms procurement and development. For instance, China is eager to demonstrate that its economic growth also means military strength. In the case of Russia, it aims to show that it is not as weak as it once was, while India intends to prove it has achieved major power status. On the part of the US, it intends to quash doubts about its ability to uphold its security commitments (Montgomery 2020:310). North Korea’s provocative nuclear detonations and long-range missile launches send a clear

message that it could strike the US and therefore needs to be taken seriously (Montgomery 2020:310). Similarly, Australia's announcement that it would acquire nuclear-powered submarines in 2021, on top of the establishment of AUKUS, sends a strong signal of Australia's resolve in the face of China's coercion and also enables Australia to punch above its weight as a middle power. These examples demonstrate the importance that symbolism can play in foreign security and defence policies.

4.2.6 Corruption

Similar to symbolism and prestige, corruption has been less appreciated as an important factor driving military modernization in the Indo-Pacific. Corruption in Asia is widely known to be endemic. In the corruption index from 2009 compiled by Transparency International, Singapore, Japan, Taiwan and South Korea rank within the top 40, while Indonesia, Vietnam, the Philippines, Cambodia and Myanmar rank between 111-178 (Dick 2011:188). Corruption itself can be defined as the abuse of official position for private or personal gain (Dick 2011:186). Due to commonly missing basic governance standards in the defence sector, corruption in the procurement of weapons is easily enabled (Transparency International 2021). Arms procurement processes are also highly vulnerable to corruption due to the lack of transparency (Perlo-Freeman 2016). Thus, the defense sector is regularly rated as one of the most corrupt regarding the management of public resource industries (Tagarev 2010:76).

Ball has observed that the involvement of the military in economic and commercial activities in Asia has led to instances where military greed and impropriety have influenced weapons acquisition programs (Ball 1993:92). Tan has identified corruption as a key driver of the international arms trade due to the secrecy of arms deals as well as the value and intricacy of arms contracts (Tan 2020:32). As Dick also observed, 'it is part of the way things are done' (Dick 2011:197, Gong and Scott 2016:2). The presence of deep corruption in arms acquisitions in the region was prominently illustrated by the widespread publicity in 2009 surrounding the acquisition of French-built Scorpene submarines by Malaysia. This involved the sensational murder of the Mongolian translator involved as well as the alleged complicity of top levels of the government (Dubus 2009).

China has also begun a crack-down on military corruption since the realization of the scale of corruption within the PLA with corruption occurring in all aspects of military spending

(Perlo-Freeman 2016). China's anti-corruption drive since 2012 has led to the dismissal and conviction of many military officers, including top generals, with two PLA departments being especially subject to corruption in the past, namely, the former General Logistics Department (GLD), responsible for finances, construction, fuel, health, and real estate, and the former General Armaments Department (GAD), responsible for procurement (World Peace Foundation n.d.).

5. China's Rise and China-US Tensions

One of the most important factors shaping the security dynamics of the Indo-Pacific region - including the region's rapidly accelerating military modernisation process - is the spectacular ascent of the People's Republic of China (PRC or China) as a regional and increasingly global military power. In an action-reaction dynamic, advances in the military capabilities of the People's Liberation Army (PLA) over the past two decades are both a catalyst for and response to a weapons procurement dynamic in the Indo-Pacific which forms the crux of the ongoing military build-up which increasingly defines Indo-Pacific security. This dynamic is most acute between the United States and China, but also involves the reaction of major powers in the region such as the India, Japan, and Australia. Advances in military technology combined with the distinct geographic features of the Indo-Pacific region result in an arms procurement dynamic between the United States and its major regional allies on the one hand and China on the other which prioritises air and maritime power projection, precision stand-off weapons such as hypersonic, ballistic and cruise missiles, and enabling technologies in the realms of cyber, space, and artificial intelligence.

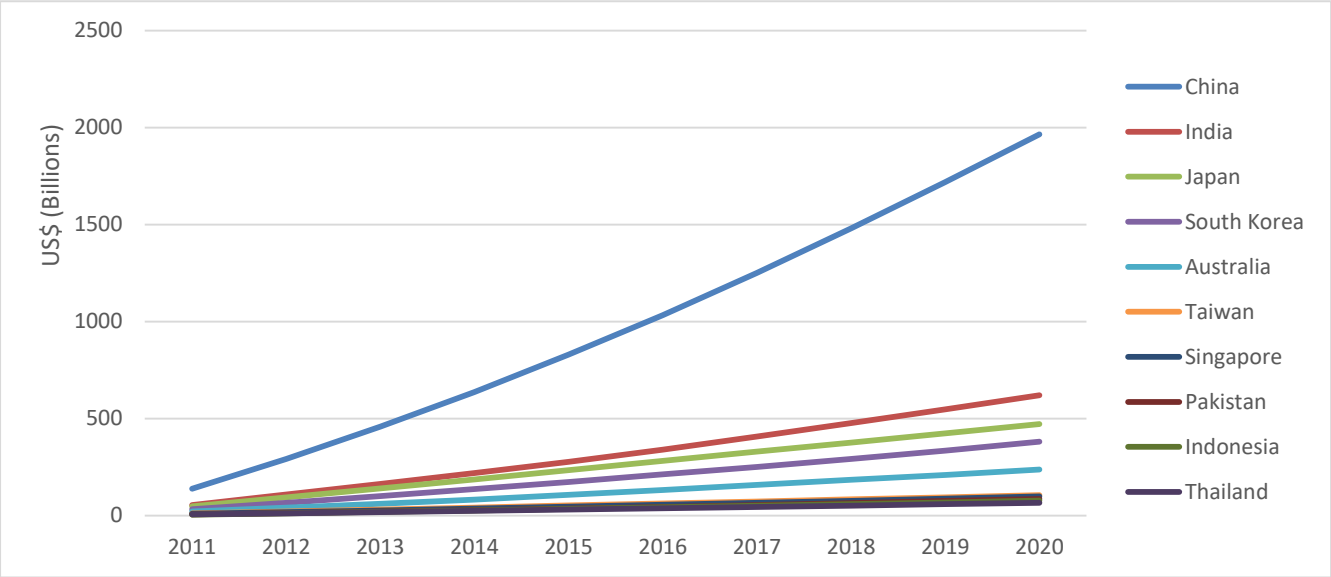
To consider these developments in more detail, this section will first examine China's military build-up along three dimensions: military spending, arms procurement and the PLA's sweeping reform and reorganisation initiatives since 2016. Next, this section will outline how the PRC build-up in turn affects the regional security situation, particularly with regard to U.S.-China tensions and competitive arms racing between the two powers. This section concludes by discussing additional critical developments in China's ongoing military modernisation process which will likely fuel continued contestation between the United States, its allies and security partners on the hand and China on the other.

5.1 China's Military Build-Up

China has focused on leveraging its rapid economic rise to sustain robust military modernisation and the development of substantial power-projection capabilities. The net result is that Chinese military modernization is advancing quickly, showcased through the rapid development of its blue water navy, anti-ship ballistic missiles, the expansion of its nuclear arsenal, and plans for military innovation focusing on future military technologies such as directed energy systems, hypersonic missiles, AI (artificial intelligence), war-fighting robotics and anti-satellite capabilities (O'Hanlon 2019:27, Sakai 2019:317).

China's dramatic rise as a military power is sustained in large measure by its rapidly expanding military spending. China has dramatically increased its military spending over the past three decades and now has the world's second largest defence budget after the United States at an estimated US$288 billion for 2022 (Grevatt and MacDonald 2022). Critically, China spends far more on its military than any of its immediate neighbours in Asia. Indeed, in 2020, PRC military spending was three times larger than India's (which has the second largest defence budget in Asia). Moreover, when considering the top 10 military spenders in Asia, PRC military expenditure alone was greater than the combined defence budgets of the next nine countries (SIPRI 2021). When considered cumulatively over time, the widening gap between Chinese military spending and that of its Asian neighbours becomes even more apparent. Between 2011 and 2020, for example, the PRC spent a total of some US$2 trillion on its military, about 3.5 times as much as India and 4 times as much as Japan over that ten-year period (SIPRI 2022; see Figure5.1).

Figure 5.1: Cumulative Military Spending in Asia, 2011-2020



Source: SIPRI Military Expenditure Database, accessed February 2022.

Notes: Yearly figures calculated in constant 2019 US dollars, except for 2020 data which is expressed in current 2020 US dollars. The ten countries listed were the top ten military spenders in Asia in 2020.

A second key feature of China's military modernisation process has been its steady accumulation of advanced weaponry from both foreign and domestic sources. China has been a major importer of advanced weaponry since the early-1990s, mostly from Russia (Gill and Kim 1995). A small sampling of these systems would include hundreds of Su-27, Su-30, and Su-35 fighter jets, scores of advanced turbofan engines to power Chinese-built fighters, bombers and transport aircraft, highly-capable S-300 and S-400 surface-to-air missile batteries, hundreds of anti-ship missiles, four Sovremmeny-class destroyers, and 12 Kilo-class submarines (SIPRI 2022).

Through these and other arms imports, China has not only deployed state-of-the-art conventional weaponry across a range of air, land, maritime, and space systems, it was also able to gain access to key technologies and platforms, primarily from Russia, enabling it to modernise its own arms production capacity. By 2020, China's imports of foreign weapons had fallen to its lowest level since the late-1990s (SIPRI 2022) while its indigenous arms production capability increased. According to research published in 2020, the PRC's major arms manufacturers in 2017 generated revenues of approximately US$54 billion from domestic and foreign arms sales. Several of China's weapons producers rank among the top

20 defence firms in the world and the country has become the second-largest producer of weapons behind the United States (Tian and Su 2020). As a result, many of the PRC's most advanced weaponry today is produced at home, particularly in critical systems which allow the PLA to project power more effectively, such as naval vessels, combat aircraft, ballistic and cruise missiles, and more sophisticated space- and cyber-related enabling technologies for command, control, computing, communications, intelligence, surveillance, and reconnaissance (C4ISR).

These developments have helped China reduce its dependency on foreign arms imports while increasing the attractiveness of its own arms exports, including to markets in Asia. Among its Asian clients, China is the largest source of weapons for Bangladesh, Cambodia, Myanmar and Pakistan (SIPRI 2022). More broadly, China has consistently ranked among the top 10 arms exporters in the world since the 1980s. However, in 2012 and again in 2013, China rose to become the third-largest weapons exporting nation (behind the United States and Russia) for the first time and has since remained among the top five. Over the 20 years from 2000 to 2019, the PRC supplied a wide range of weaponry to 75 recipients worldwide, mostly to developing world countries in Asia, Africa, and the Middle East. Since 2013, about 78 percent of Chinese exports by value went to seven countries (in rank order): Pakistan, Bangladesh, Algeria, Myanmar, Thailand, Venezuela, and Indonesia. Chinese arms exports have become increasingly sophisticated and today include such aircraft as fighter jets, combat helicopters, and jet trainers, frigates, submarines, patrol craft and other naval vessels, anti-ship and surface-to-air missiles, armed drones, and a range of land systems such as tanks, rocket-launchers, infantry fighting vehicles and armoured personnel carriers. In a sign of deepening military-technical cooperation with certain partners, some PRC export deals include the assembly or production of Chinese systems in the recipient country, such as submarines and the JF-17 Thunder fighter jet built in Pakistan, JF-17 Thunder fighters assembled in Myanmar, and T-59 tanks assembled in Sudan (SIPRI 2022). China invests the profits, and gains valuable functional and performance intelligence, from these sales which can in turn be used to improve its domestic weapons development and military modernisation.

China's large-scale procurement of foreign- and domestically-produced armaments has resulted in a far more modern and powerful military. According to the US Department of Defense, the PRC boasts the largest navy in the world, with over 350 ships and submarines

(compared to about 295 ships in the U.S. Navy), including more than 145 major surface combatants (Office of the Secretary of Defense 2021:48). China now deploys two aircraft carriers with more on their way: its first, named the *Liaoning,* which is based on the hull of a former Soviet *Kuznetsov*-class aircraft carrier, became fully operational in 2018; the second, named the *Shandong,* the first carrier which China produced entirely domestically, entered service in 2019; a third, which will be the largest and most modern Chinese carrier to date and will include a catapult system for launching aircraft from its deck, is expected to begin sea trials in 2022 (Funaiole, Bermudez and Hart 2021) and to enter into service in 2024 (Office of the Secretary of Defense 2021:48).

The military aircraft of the PLA Air Force and the PLA Navy total more than 2,800, including more than 2,250 combat aircraft—fighters, attack aircraft, bombers, and tactical aircraft. These numbers add up to give China the largest fleet of military aircraft in Asia and the third largest globally. Of the PLA's 1,800 fighters, more than 800 are considered fourth-generation jets, a fleet which will be a 'majority fourth-generation force within the next several years' (Office of the Secretary of Defense 2021:55). Development and limited deployment continues of fifth-generation stealth fighter aircraft.

Moreover, the PLA deploys more than 2,350 land-based ballistic and cruise missiles, one of the largest and most diverse missile forces in the world (Office of the Secretary of Defense 2021:163). In 2019, the PRC 'launched more ballistic missiles for testing and training that the rest of the world combined' and in 2020 'launched more than 250 ballistic missiles exceeding its launch numbers for 2018 and 2019' (Office of the Secretary of Defense 2020:56, Office of the Secretary of Defense 2021:94). Work also continues in the development and deployment of Chinese hypersonic weapons, with the PLA displaying the DF-17 missile - designed to carry hypersonic vehicles - at the PRC's 70th anniversary parade in October 2019 and is in the midst of testing the Xingkong-2 hypersonic flight vehicle (Office of the Secretary of Defense 2021:60, Yang 2019).

Moreover, China has accelerated the development of its nuclear forces, including the deployment of more nuclear-capable missiles, bypassing France to become the third-largest nuclear-armed country in 2020 (Kristensen and Korda 2020). In addition, over the course of 2020-2021, the PRC constructed some 300 new intercontinental-range ballistic missile (ICBM) silos in China's far western provinces of Xinjiang and Gansu which, if all armed

with nuclear-tipped missiles, would be the largest single increase in the country's nuclear arsenal since it first detonated an atomic bomb in 1964 (Kristensen and Korda 2021). In another important development, in 2021, the PRC test-launched a nuclear-capable hypersonic vehicle that travelled around the globe in low space orbit prior to descending toward its target. According to reports, this was the first time any power had displayed such a capability so openly, suggesting China is well advanced in developing hypersonic weapons that would be able to defeat current missile defence systems (Sanger and Broad 2021).

In addition, the PLA has increasingly invested in capabilities to improve its performance in the area of 'informationised warfare' by achieving dominance in both the space and cyber domains, which it views as critical to future strategic competition (State Council 2015:6). The PLA Strategic Support Force, established at the end of 2015, will be an especially critical actor in this regard with a mission to provide integrated strategic information support through space- and network-based capabilities, including communications, navigation and positioning, intelligence, surveillance and reconnaissance, and the protection of military information infrastructure while also conducting strategic information operations in the space, cyber, electromagnetic, and psychological warfare spheres. Moreover, renewed efforts at home and abroad in pursuit of 'military-civilian fusion' (军民融合)—which aim to gain synergies from the integration of relevant civilian, and military-use technologies, may also advance China's ongoing military modernization process (Stone and Wood 2020).

In addition to military spending and arms procurement, a third important element in China's military modernization effort concerns the sweeping reform and reorganization of the PLA set in motion under Xi Jinping (Gill, Ni and Blakso 2020). These important changes were signaled in November 2013, about a year after Xi took the reins of power, with the official decision to 'optimize the size and structure of the army' and improve the 'joint operation command authority under the Central Military Commission and theatre joint operation command system' (China Daily 2013). Formally launched in late-2015, the reform and reorganization effort is arguably the most extensive and potentially transformative in the PLA's history and is intended to overcome longstanding problems within the PRC military.

These changes have already had far-reaching effects on the PLA's organization, personnel numbers, force posture, command and control structures, and internal politics. Importantly,

these reforms aim to have a significant qualitative impact, transforming the PLA from an untested, degraded and stove-piped military to a military capable of conducting effective joint operations to fight and win intensive conflicts against technologically sophisticated adversaries, such as the United States and its allies, and to do so at increasing distances from China's immediate periphery. In the words of China's defence white paper in 2015, the PLA would focus on 'integrated combat forces' that will be 'employed to prevail in system-vs-system operations featuring information dominance, precision strikes and joint operations.' Importantly, the white paper also declared that the PLA would shift from its traditional posture of 'offshore waters defence' (近海防御) to a combination of offshore waters defence and 'open seas protection' (远海护卫)(State Council 2015: 11, 14). As shown in Figure 4.2, the reorganization resulted in a significant downsizing of the PLA, though it remains the world's largest military and continues to be dominated by its land forces as opposed to naval, air, missile, and cyber forces.

Figure 5.2 Estimated Personnel in the PRC Armed Forces, 2016 and 2020

PLA Active Duty	**Estimated Personnel 2016 (% Active Force)**	**Estimated Personnel 2020 (% Active Force)**
Total	2,333,000 (including uniformed Civil Cadre)	2,000,000 (including uniformed Civil Cadre)
Army	1,600,000 (69%)	975,000 (<50%)
Navy (includes Marines)	235,000 (10%)	250,000 (12.5%)
(Marines, counted as Navy)	(10,000-12,000)	(40,000) (2%)
Air Force (includes Airborne)	398,000 (17%)	395,000 (19.75%)
Second Artillery/Rocket Force	100,000+ (5%)	120,000 (6%)
Strategic Support Force	Not applicable	175,000 (8.75%)
Joint Logistics Support Force	Not applicable	85,000 (4.25%)
Reserves (预备役部队)	510,000	510,000? (no recent reporting)
Contract Civilian Personnel	20,000	40,000? (undergoing expansion)
PAP	660,000 (Coast Guard not included)	500,000? (includes Coast Guard, but total number not

		released after 2018 reform)
Total: PLA Active, Reserves, Civilians, and PAP	3,523,000 (or 3,490,000 based on PRC numbers for PLA)	3,050,000?
Militia (includes unknown number of uniformed PAFD Local Civilian Cadre)	8,000,000	8,000,000? (2008 number, no recent reporting)

Source: *The Military Balance 2016* and author estimates for 2020. A version of this figure also appears in Bates Gill, *Daring to Struggle: China's Global Ambitions Under Xi Jinping* (Oxford University Press, 2022), p. 119.
Note: According to the 2019 white paper, *China's National Defense in the New Era*, the total number of active duty PLA personnel before the 2016 reforms was 2,300,000.

As the PLA's commander-in-chief, paramount leader Xi Jinping made clear his expectations in his keynote speech before the 19th Chinese Communist Party Congress in October 2017:

> A military is built to fight. Our military must regard combat capability as the criterion to meet in all its work and focus on how to win when it is called on. We will take solid steps to ensure military preparedness for all strategic directions, and make progress in combat readiness in both traditional and new security fields. We will develop new combat forces and support forces, conduct military training under combat conditions, strengthen the application of military strength, speed up development of intelligent military, and improve combat capabilities for joint operations based on the network information system and the ability to fight under multi-dimensional conditions. This will enable us to effectively shape our military posture, manage crises, and deter and win wars' (Xi 2017).

In that same speech, Xi Jinping declared a 'three-step development strategy' (三步走的发展战略) to define his expectations for the PLA. The first step, which was reached in 2020, was that mechanization would be 'basically achieved', information technology capabilities would have 'come a long way', and strategic capabilities would have seen a 'big improvement.' By 2035, the second step should be achieved: the comprehensive modernisation of military theory, organization, personnel, and weaponry. By the mid-21st century, in time for the 100th

anniversary of the PRC in 2049, the third step would see the PLA fully transformed into a 'world-class military' (把人民军队全面建成世界一流军队) (Xi 2017, Fravel 2020).

China's military build-up reflects these aims and focuses on particular capabilities. The build-up underscores the growing importance of maritime domains; stronger capabilities in nuclear, aerospace, and information domains; the need to project power farther away from China's borders to safeguard the country's expanding international interests; and improvements in joint operations and informationised warfighting. The Pentagon acknowledges that the PLA has made significant advances in these and other areas in recent decades, progressing from a military whose forces were 'mostly obsolete' and 'lacked the joint organizations and training needed' to force today that has 'marshaled the resources, technology, and political will . . . to strengthen and modernize the PLA in nearly every respect' and is even ahead of the United States in certain areas (Office of the Secretary of Defense 2020:i). Figure 5.3 provides details on selected PLA weapons systems as of 2020.

Figure 5.3: Selected PLA Weaponry, 2020

Weapon platform	Amount	Comments
Fighters		
• J-7 variants	512	incl. J-7 E & G
• J-8 variants	124	incl. J-8B, F & H
• J-11	95	
• Su-27 variants	52	incl. Su-27SK & UBK
Fighter Ground Attack	approx. 202	incl. J-11B & BS
• J-11 variants	468	incl. J-10A, C & S
• J-10 variants	120	
• JH-7 variants	97	
• Su-30	20	
• J-15	approx. 100	
• J-16	approx. 22	
• J-20	24	
• Su-35		

Bombers	211	incl. H-6 A, G, H, & K
• H-6 variants		
AEW&C	25	incl. KJ-200, 500 & 2000
• KJ series	4	
• Y-8		
Tankers	15	
• H-6	3	incl. H-6DU & U
• Il-78		
Submarines	6	
• SSBN	6	
• SSN	46	
• SSK		
Surface combatants	2	
• Aircraft carriers	1	
• Cruisers	31	
• Destroyers	46	
• Frigates		
	150 (100)	
Missiles*	300 (200)	range: >5,500 kms
• ICBM	600 (250)	range: 3,000-5,500 kms
• IRBM	1000 (250)	range: 1,000-3,000 kms
• MRBM	300 (100)	range: 300-1,000 kms
• SRBM		range: >1,500 kms
• GLCM		

Sources: Institute for International Strategic Studies, *The Military Balance 2020;* missile data drawn from Office of the Secretary of Defense, *Military and Security Developments Involving the People's Republic of China: Annual Report to Congress* (Washington, D.C.: Department of Defense, August 2021), Appendix I.

Key: AEW&C: airborne early warning and control aircraft; SSBN: nuclear powered ballistic missile submarine; SSN: nuclear powered attack submarine; SSK: attack submarine; ICBM: intercontinental ballistic missile; IRBM: intermediate-range ballistic missile; MRBM: medium-range ballistic missile; SRBM: short-range ballistic missile; GLCM: ground-launched cruise missile; kms: kilometres.

* Data for surface-to-surface missiles; columns show number of missiles with number of launchers shown in ( ).

5.2 Increasing U.S.-China Tensions and Emerging Arms Race

China's ongoing military modernisation program represents one side of an accelerating arms competition in the Indo-Pacific region. From Beijing's perspective, its military modernisation is necessary to counterbalance the challenges it sees around its borders, and especially in the maritime sphere to its east and southeast. It is here that Chinese leaders and strategists seek the military capabilities to deter, coerce and, if necessary, defeat potential adversaries, especially in highly sensitive and increasingly contested areas around China's maritime periphery and beyond. The most contested areas primarily include regions within the 'first island chain' and 'second island chain' where China has several ongoing and unsettled sovereignty and territorial disputes with many of its neighbours such as Japan, Taiwan, Malaysia, the Philippines, and Vietnam. Some of these neighbours are treaty allies of the United States (Japan, the Philippines) or close security partners with Washington (Taiwan). Hence the development and deployment of certain PRC military capabilities is expressly concerned with the need to deter and, if need be, defeat the United States within the first and second island chains.

These emerging 'anti-access/area denial' (A2/AD) capabilities include land- and sea-based missiles and air power, antisubmarine and antiship warfare platforms, a growing cyberwarfare capacity, and a nascent but increasingly capable amphibious and expeditionary force. For example, in the PRC military theatres opposite Taiwan, the PRC deploys some 600 fighter jets, 250 bombers and ground-attack aircraft, 100 major surface combatants (including destroyers, frigates, corvettes and one aircraft carrier), and nearly 40 submarines. These forces are augmented by well more than 1,000 Chinese medium- and short-range ballistic missiles and ground-launched cruise missiles which range Taiwan and beyond (Office of the Secretary of Defense 2021: Appendix 1).

Moreover, Beijing has shown a growing willingness to openly brandish these capabilities - through the increased size and tempo of military exercises and patrols around Taiwan in an explicit attempt to coerce and deter Taiwan and its supporters such as the United States. In 2021, for example, the PLA conducted sorties over waters southwest of Taiwan with H-6 bombers and other aircraft which simulated an anti-ship missile attack against the *USS Theodore Roosevelt,* a U.S. aircraft carrier which at the time was operating in the vicinity. The PLAN also conducted additional exercises purporting to 'surround' Taiwan and thwart foreign intervention. At the same time as the 1 October PRC national day celebrations that year, the PLA carried out its largest incursions of Taiwan's air defence zone to date with nearly 150 fighters, bombers, and other aircraft over the course of several days (BBC 2021). It appears these efforts may be bearing fruit for Beijing: the Pentagon concludes the PLA is 'developing capabilities to provide options for the PRC to dissuade, deter, or, if ordered, defeat third-party intervention during a large-scale, theater campaign such as a Taiwan contingency' (Office of the Secretary of Defense 2020:72).

In addition to these steps to increase the PLA's hard power capabilities within the first island chain - especially with regard to the South China, East China Sea, and the Taiwan Strait - the Chinese military has also steadily improved its ability to project power beyond those waterways. The PLA Navy and PLA Air Force increasingly conduct training and patrols in the Western Pacific, while the PLA Rocket Force has developed more lethal and accurate ballistic and cruise missiles which can reach thousands of kilometres from the Chinese mainland. The PLA Air Force can deploy a small number of long-range bombers to conduct anti-ship and land attack missions between the first and second island chains. Land-attack and anti-ship variants of the DF-21 and DF-26 ballistic missiles - with ranges of 1,500 kilometres and 4,000 kilometres, respectively - as well as the DH-10 ground-launched cruise missile (1,500 kilometre range) reportedly allow the PLA to launch precision strikes, including against aircraft carriers, from the PRC mainland to reach targets in the Indian and Western Pacific Oceans (Office of the Secretary of Defense 2020:56).

In turn, the United States and key regional allies such as Australia and Japan recognise the threat these capabilities pose to their regional interests, commitments and presence, especially in and around the first and second island chains. For its part, the United States has in response embarked on a regional arms build-up of its own, including through the Pacific Deterrence Initiative (PDI), launched in 2020, which expressly identifies the 'pacing challenge'

presented by the PRC to the United States and its regional allies. According to the Biden administration, the PDI is necessary to develop 'advanced, asymmetric capabilities … designed to operate in an anti-access/area denial environment', requiring investments in 'long-range munitions development and procurement, advanced strike platforms, expanded forward force posture and resiliency [and] targeted security cooperation programs to enhance the capabilities of our allies and partners' among other critical needs (Office of the Undersecretary of Defense 2021:1).

As part of the PDI and other ongoing procurement programs, and with PRC capabilities in mind, the United States has begun to introduce a range of new systems to the Indo-Pacific theatre, including intermediate-range ballistic and cruise missiles—such as a ground-based version of the Tomahawk cruise missile—which can attack PRC targets as well as other offensive and defensive systems such as hypersonic weapons and new missile defence systems (Reif and Bugos 2020). In the coming years, with a price tag of approximately US$30 billion, the PDI will result in the expansion of more robust air and missile defences and a significant increase in dispersed and better-integrated ground-, air-, and naval-based precision strike fires with ranges over 500 kilometres. These deployments are explicitly linked to China's ongoing military modernisation. In the words of the head of the U.S. Indo-Pacific Command:

> The greatest danger for the United States in this competition is the erosion of conventional deterrence. A combat-credible, conventional deterrent posture is necessary to prevent conflict, protect U.S. interests, and to assure our allies and partners. Absent a convincing deterrent, the People's Republic of China (PRC) will be emboldened to take action to undermine the rules- based international order and the values represented in our vision for a Free and Open Indo-Pacific. The combination of the PRC's military modernization program and willingness to intimidate its neighbors through the use, or threatened use of force, undermines peace, security, and prosperity in the region. (Davidson 2021:2)

The action-reaction dynamic between China and the United States (and between China and other neighbours) is a fundamental driver accelerating the modernisation of defence capabilities across the Indo-Pacific.

5.3 Other Critical Developments

Beyond the first and second island chains, two other important developments are also fuelling China's military modernisation and with it a cycle of intensifying concern and competition on the part of the United States. The first is the expanding presence of the PLA in the Indian Ocean and in the Western Pacific. One of the most high-profile examples of the PLA's expanding presence in these areas is the Djibouti Support Base (吉布提保障基地) which opened in 2017. Located in the small nation of Djibouti on the east coast of Africa where the Bab al-Mandab Strait connects the Red Sea and the Gulf of Aden, and operated by the PLA Navy, this facility is China's first and (so far) only overseas military base. It was established to support the PLAN's anti-piracy missions in the Gulf of Aden as well as China's growing contributions to United Nations peacekeeping operations in Africa. It houses approximately 2,000 military personnel, including from the PLA Navy, Marines, Army and special forces (Cabestan 2019).

The establishment of this base, in combination with China's sustained naval presence in the Indian Ocean region, including the PLA Navy's uninterrupted three-ship counter-piracy task force deployment in and around the Gulf of Aden since 2008, is significant for building up the PLA's power projection capabilities in the future. In undertaking these activities, the PLA has gained substantial and valuable experience sustaining its presence a great distance from the Chinese mainland, operating in a strategically important region where Africa and the Middle East converge, providing crews and headquarters staff excellent real-world experience in extended, long-distance operations, at-sea replenishment, communications and tactical operations, and observing and learning from other militaries and navies deployed in the area. Given the PLA Navy's lack of wartime experience, these operations may be the closest thing to combat on the high seas the modern PLAN has undertaken (Erikson and Strange 2013).

China's Djibouti base has also fueled speculation the PLA will establish other foreign bases in the years ahead. Much attention has focused on the port at Ream in Cambodia as a potential site and more recent reports suggest a PRC interest to establish a military foothold in the Solomon Islands (Cheang 2020, ABC 2022). Looking ahead, it is possible the PLA will set up another base abroad, though it is more likely in the near-term the Chinese military

will continue to seek various forms of access rights - for refuelling, maintenance, and logistics purposes - at airports and harbours to support the PLA's expanding presence abroad. But either way, over the coming years, the United States and its allies will be facing an increasing operational presence of a more capable PLA well beyond the first and second island chains.

The second critical development concerns China's deepening strategic and military-to-military relationship with Russia. In addition to being a source of some of China's most advanced weapons, Russia is arguably China's most important strategic partner, including in conducting increasingly sizeable and sophisticated military exercises. The two countries held naval drills in the Mediterranean Sea in 2015 and the Baltic in 2017, and Russia has joined with the PLAN to conduct joint exercises in the East China Sea, Yellow Sea and South China Sea. China also contributed 3,500 troops to the massive Vostok-2018 exercise which involved an additional 300,000 Russian troops in what the Kremlin claimed at the time was its largest military drills ever. With the onset of the COVID-19 pandemic, 2020 and 2021 saw a decline in the PLA's international military exercises owing to the COVID-19 pandemic. However, some nevertheless took place. One of the most significant was 'Caucuses-2020' which brought together some 12,000 soldiers and sailors from China, Russia, Armenia, Belarus, Iran, Myanmar, and Pakistan to conduct land and sea drills in southern Russia. In its first joint military exercises inside the PRC since the COVID-19 outbreak, some 10,000 personnel from China and Russia conducted a five-day set of drills involving land and air forces in the China's northwest autonomous region of Ningxia (Guardian 2018, Global Times 2021, Wolfgang 2020). According to Lyle Goldstein and Vitaly Kozyrev, China's ongoing military-technical relationship with Russia over three decades has been a decisive factor in the modernisation of PRC maritime and air doctrine and power (Goldstein and Kozyrev 2020). In the wake of Russia's invasion of Ukraine, Moscow and Beijing appear set to establish even deeper cooperation across a range of strategic and political-diplomatic initiatives, many of which will contribute to China's continuing military build-up.

Looking ahead, a fundamental source driving the accelerated military modernisation of the Indo-Pacific region will continue to be China's growing military power, Beijing's increased willingness to wield and deploy that power, and that powers steady encroachment on the interests of others in the region. This creates a classic 'security dilemma', in which the measures one country takes to improve its security is perceived by others as a threat to their

own. This action-reaction dynamic lies at the heart of the strategic relationship between the United States and China and drives the military modernisation efforts of the two powers as they warily eye one another. As discussed elsewhere in this study, many of the PRC's closest neighbours - and particularly those which have sovereignty and territorial differences with China - are close allies and security partners with the United States (or are seeking closer defence ties with Washington), which further drives the regional defence modernisation dynamic.

6. India as a Regional Great Power and Tensions with China

6.1 India as a Counterweight to China

6.1.1 India's Bolder Response to China's Aggressiveness

Multiple stand-offs and clashes between Indian and Chinese troops in their contested western Himalayan borderland from spring 2020 have brought ties between Asia's two nuclear-armed giants to their lowest point since the 1962 Sino-Indian war.

On 15 June 2020 at 4,200 metres altitude, 20 Indian soldiers, including a Colonel, along with at least four soldiers from China's People's Liberation Army (PLA), were killed in a mass overnight brawl in a narrow ravine in the Galwan valley. Clashes were also reported in the following weeks between the Indian military and the PLA further south, in Hot Springs-Gogra, Demchok and the Depsang Plains, around Pangong Lake, and further east in Nathu La pass, situated between Bhutan and Nepal.

The Galwan clash involved a brazen attempt by Chinese troops to move into and establish a presence into a contested unoccupied but patrolled locality on the Line of Actual Control (LAC). Armed Indian and PLA troops used primitive hand-held weapons, thereby not violating the bilateral agreement on not using firearms, but with the intention of causing harm. Unforgiving night-time conditions, with men drowning in icy waters, reportedly worsened the attrition on both sides.

The 2020 violence marked a watershed in Sino-Indian relations and was unprecedented in peacetime. The Galwan clash was the most serious incident since 1967 and the resulting

fatalities were the first on the LAC since 1975. The LAC was the result of a political-military modus vivendi reached after 1962 to manage the contested border characterised by both sides' overlapping claim lines (amounting to 38,000 sq. km and 90,000 sq. km of the other's territory for India and China respectively) compounded by on-ground occupation and forward seasonal patrolling by paramilitary forces.

In military terms, the Modi government provided a bolder and more assertive posture towards China's aggression on the border. India's initial military response to the Galwan clash was principally army-led. In late August 2020, army special forces, supported by members of the largely ethnic Tibetan Special Frontier Force (SFF), took control of an elevation south of Pangong Tso lake (Levesques 2020). The move, described after fact as 'pre-emptive' by the army in a statement, took aback the Chinese side. By September 2020, tens of thousands of opposing troops, armed with heavy weaponry and possibly peaking at 70,000 on each side, had arrived in the Ladakh area or its rear. This may have amounted to an increase of at least 25% in the Indian forces tasked with defending the whole border. As on the Chinese side, India's new forces comprised active and reserve military personnel rather than traditional constabulary paramilitary troops. A division of the Indian Army's I Corps, tasked with serving the Pakistan border, was reportedly dual tasked, in effect helping the release of some of its men and equipment to the China border.

India also moved in artillery, tanks, fighter jets and helicopters. India's Leh airfield was reinforced with Russian Sukhoi and MiG-29 fighters and US C-17 and C-130 transport aircraft and Chinook helicopters as the Indian air force 'activated and forward-deployed [its] frontline combat assets' (Gokhale 2021).

India doubled down on its 'pro-active diplomacy with strong ground posturing' as a close Modi adviser put it, or what others in military circles called a 'no blinking, no brinkmanship' stance (Sen 2020). India's strategy, mirroring China, is to maintain strong tactical positions through an unprecedented Indian army-led peacetime deployment across the entire border with China. This is designed to hold existing Indian positions, deter local Chinese salami slicing tactics, possibly stake local 'bargaining chips' in case of future talks and, finally, symbolically respond to Chinese rhetoric reminding India of the 1962 war it lost, by emphasising Indian steadfastness instead.

The delivery of French Rafale multi-role fighters was speeded up and the first of five units of Russian S-400 missile defence launchers acquired. India began looking to form a rocket force, in the context of China's challenge on the border and its own precedent standing one up in 2016. It also carried out a higher tempo of missile tests in development or in the inventory of its armed forces, including in 2021-2022 the first user trial of the 5,000km-range *Agni-5*, that of a 4,000km-range Agni-4, as well as inaugural tests of the nuclear-capable *Agni-P* (or *Prime*) and the conventionally-armed *Pralay* (Levesques 2022).

India also stepped up long-standing plans and efforts to develop dual-use infrastructure to the rear, including new border roads, driven by China's efforts to entrench militarisation and to populate and develop border regions on its side of the LAC. India's defence minister Rajnath Singh inaugurated new tunnels, bridges and roads at an unprecedented pace.

But, there are critical risks and challenges to such a military-diplomatic posture. In March 2022 the US Office of the Director of National Intelligence for the first time stated that 'expanded military postures by both India and China along the disputed border elevates the risk of armed confrontation between two nuclear powers that might involve direct threats to US persons and interests and calls for US intervention. Previous standoffs have demonstrated that persistent low-level friction on the Line of Actual Control (LAC) has the potential to escalate swiftly' (Office of the Director of National Intelligence 2022:29).

The sustainability of India's extra efforts over time is hard to assess but almost certainly poses a challenge for India's budgetary effort allocated to defence. The country faces a deteriorating macro-economic situation due to lost growth during the Covid-19 pandemic, energy and other commodity import-related inflation compounded by the war in Ukraine, and the exposure of corporate debt and foreign investment inflows to rising interest rates on US dollar transactions. The Ukraine war and Western sanctions against Russia also threaten India's supply of Russian and Ukrainian-supplied arms and spares.

Since late 2020 to date, there have been no reports of clashes in Ladakh or elsewhere on the border, although small unconfirmed 'face offs' between troops were reported over the summer of 2021. This calm may be partly attributed to successive rounds of irregular ongoing separate commander and diplomat-led talks. Yet even if these have, to date, prevented further escalation, they have only allowed for 'disengagement' across what China

characterised in March 2022 as ‘most parts of the border areas’ in the western sector; but ‘de-escalation’ across the region has not ensued. Nor have talks addressed China’s infrastructure build-up immediately on the LAC. A visit to New Delhi by Chinese Foreign Minister Wang Yi in March, the first since the Galwan clash, did not result in an improvement to the situation on the ground. A 1 June 2022 meeting of the diplomats-led Working Mechanism for Consultation and Coordination on India-China Border Affairs (WMCC) was unofficially reported by China.

General Bipin Rawat, as army chief, publicly stated in July 2018 that India should in effect prepare for a ‘two front’ conflict with China and Pakistan. As Chief of Defence Staff (CDS), he stated in June and November 2021 that ‘China is a bigger security threat for India than Pakistan’, and that India was prepared to deal with ‘any misadventure’ on the ‘land borders or the high seas’. Rawat added that there was ‘no doubt’ that China was ‘enemy number 1’ for India, as ‘the threat on the northern borders is much bigger’ (The Times of India 2021, WION 2021).

6.1.2 India as a Diplomatic Counterweight to China

India’s Foreign Minister Dr S. Jaishankar concurred with this view, stating that the two sides had gone through a ‘particularly bad patch’ in their relationship, because China had taken a set of actions ‘in violation of agreements, for which they still do not have a credible explanation’ (Bloomberg 2021). India’s view is that ties will continue to be deeply affected if there is no peace on the border. India’s security establishment remains primarily concerned by China’s aggressiveness on the border dispute and its growing trade and defence relationships with India’s South Asian and maritime neighbours in the Indian Ocean.

The Galwan clash resulted in a change in India’s relations with China and an increased willingness in the Indian government to play a role as a counterweight to China. But, this remains caveated, even as its actual ability to play such a role remains limited.

To overcome its limitations in countering China, India’s Narendra Modi government has engaged in external balancing through issue-based partnerships, including deepened bilateral

defence and security ties with the US, Australia and Japan as well as participation in the 'Quad' dialogue.

With the US' widening rift with China and India's increasing concern over China's growing regional influence, a strategic convergence has developed between India and the US to counter China's aggressive role on India's land border and its influence in the Indo-Pacific region. This is most apparent in bilateral India-US defence and security cooperation.

In January 2015, India and the US agreed for the first time on a joint strategic vision for the Asia-Pacific and the Indian Ocean region, which explicitly mentioned the South China Sea. In January 2021, the US Indo-Pacific strategy, namely the 2018 US Strategic Framework for the Indo-Pacific, described the previous Donald Trump administration's policy towards India since 2017 as seeking to ensure that 'India's preferred partner on security issues is the US', and that the 'two cooperate to counter Chinese influence', with the US offering 'support to India through diplomatic, military, and intelligence channels'. The 2022 US Indo-Pacific strategy added that the US 'recognize[d] that India is a like-minded partner and leader in South Asia and the Indian Ocean' (White House 2022a:16). The US' assistance to India was demonstrated in response to the Galwan clash. Lisa Curtis, former Senior Director for South and Central Asia at the US National Security Council during the Trump Administration, stated publicly on 27 April 2022, that the 'US backed India fully both morally and materially, provided information, expedited delivery of military equipment…and were very supportive in terms of public statements, coordinating very closely with India'. This included supplying two MQ-9A *Reaper* armed uninhabited aerial vehicles (UAVs) and cold-weather clothing to India (Observer Research Foundation 2022:46:00-46:54).

Between 2008 and 2021, India ordered seven different major US military platforms, including attack helicopters and anti-submarine warfare (ASW) aircraft. The US is India's second-largest source of arms, after Russia, with US-India defence trade increasing significantly from US$200 million in 2000 to over US$20 billion in 2021. The US constitutes 11% of India's share of defence procurement since 2010. India and the US have also established a '2+2' India–US foreign and defence ministers' dialogue (Roy-Chaudhury and Solanki 2021a:177). Modi also met US President Joe Biden in Washington in September 2021 on the sidelines of the first in-person 'Quad' leaders' summit and in Tokyo on the

sidelines of the second in-person 'Quad' leaders' summit in May 2022, including for the launch of the US-led Indo-Pacific Economic Forum (White House 2022b).

India has also demonstrated its political and diplomatic willingness to strengthen relations with other partners. New Delhi has established '2+2' foreign and defence ministerial dialogues with Japan and Australia, as well as Russia, and has a long-standing strategic dialogue with France, at the National Security Adviser-level. In May 2021, India and the UK agreed to an unprecedented ten-year roadmap for a comprehensive strategic partnership, including boosting defence and security ties as one of its five 'pillars' (Indian MEA 2021; Roy-Chaudhury 2022).

India will remain keen to avoid escalation of conflict due to its geographic contiguity with a larger and more powerful China, which is also its largest trade partner. China's US$16.9 trillion economy is nearly six times larger than India's US$2.95 trillion economy. Prior to the Covid-19 pandemic, India's annual growth rate from 2015 to 2018 was faster than China's. However, the severe effects of the second wave of the pandemic, resulted in a 6.6% economic contraction in India in 2020-21 compared to China's growth of 2.3%. Yet, in 2021-22, China's economic growth was estimated at 8.1%, while India's was estimated at 8.9% (International Monetary Fund 2022). With Russia's invasion of Ukraine, there are new concerns in New Delhi that China could engage in further 'muscle-flexing' along the LAC, with US/NATO attention diverted to Russia in the short-medium term.

6.1.3 India's Naval and Maritime Response

Leveraging India's advantage in naval and maritime air power projection in the eastern Indian Ocean

Since 2008, Chinese warships have regularly operated off the Gulf of Aden in a UN-mandated counter-piracy role. In December 2021, three Chinese ships departed for their 40th escort mission in the Gulf of Aden (Joshi 2019). An average of 8-10 Chinese ships, including 'research vessels', reportedly operate annually in the Indian Ocean. Chinese submarine patrols have also taken place in the eastern Indian Ocean/Andaman Sea since 2012, reportedly averaging 3-4 submarine contacts every three months (Joshi 2019). Its most recent

port visits to Colombo took place twice in 2014 and to Karachi in 2015. In 2017, China opened its first overseas naval 'support facility' in Djibouti; a prospective new facility in Abu Dhabi was halted in 2021 under US pressure. Chinese companies have built and partially operate facilities in Sri Lanka's Hambantota port (built by the China Harbour Engineering Company (CHEC) and Pakistan's Gwadar port (also built by CHEC along with the China Overseas Port Holding Company or COPHC) as well as building a deep-sea port in the Kyaukpyu islands in Myanmar. Despite the absence of naval air power, Chinese surface combatants project power in the region and its submarines seek to challenge Indian naval dominance in the eastern Indian Ocean (Roy-Chaudhury and Solanki 2021b:39-40).

Currently, India's numerical and qualitative advantages in naval and maritime air power in the eastern Indian Ocean serve as a counterweight to China's power projection in the area. But, a reduction in the Indian navy's planned force levels, ongoing delays in warship construction, absence or lack of decision-making and an inability to maximise its geographical/island-based leverages for power projection could erode its advantages vis-à-vis the Chinese navy by the end of the decade. This could be exacerbated further by the presence of a Chinese aircraft carrier in the Indian Ocean for the first time by the middle of the decade, followed by the deployment of a Chinese aircraft carrier task force in the next decade (Private discussion with Indian officials 2022).

The power projection capabilities of the Indian navy's force of 130 ships (including 28 principal combatants), 16 attack submarines and one Arihant-class nuclear-powered ballistic missile submarine (SSBN), along with 235 aircraft, helicopters and drones have recently been augmented by maritime strike and reconnaissance capabilities (Pandit 2020). Its single operational aircraft carrier *Vikramaditya* deploys MiG-29K combat aircraft. The second carrier, the indigenously-built *Vikrant,* is expected to be commissioned on 15 August 2022, India's 75th anniversary of independence, with the navy pushing for a third larger carrier, the *Vishal*. Its 12 P-8I Neptune maritime patrol aircraft account for the second largest force of such aircraft after the US; an additional six aircraft were planned to be acquired, but this was under review as of June 2022, as part of an overall review of India's arms imports. The Indian air force's maritime strike Jaguar aircraft based on the western coast, including in Jamnagar, Gujarat, and Andaman and Nicobar island-based aircraft and ships, add to India's overall firepower at sea, along with a squadron of Sukhoi-30MKI flanker aircraft, based in the south, for a maritime strike role.

The prospective acquisition of 111 Naval Utility Helicopters will be developed with an Indian defence company, with India's Ministry of Defence including naval utility helicopters in its third indigenisation list of April 2022, to be effective from December 2023 (Indian MoD 2022a). Additionally, there is the ongoing induction of 24 Sikorsky MH-60R Seahawk anti-submarine warfare helicopters, with the first batch of three helicopters expected to be inducted in July 2022 (Peri 2022a).

Naval firepower is being increased by the commissioning of four modern Vishakapatnam-class destroyers (the first commissioned in November 2021) and four additional Talwar-class stealth frigates (the first was launched in Russia in October 2021).

However, there exist significant limitations. Cuts in the navy's budget for the past several years has resulted in a decrease of as much as a third in its planned force level from 212 to 170 ships by 2027 (Peri 2021a). The navy's share of defence expenditure also fell significantly from 18% in 2012 to 12% in 2019; but rose to 15% for the 2022-23 budget. This was due to a surge in the navy's modernisation expenditure by 51% in 2020-21 and by 41% in the 2022-23 budget. The navy's capital spend rose from US$3.9 billion in 2019-20 to US$6 billion in 2020-21, although most of this would be spent paying off existing contracts, with minimal scope for new acquisitions.

Considerable delays in modification and construction of warships in India have taken place, including for the carriers *Vikramaditya* and *Vikrant*. It has taken over 12 years from the signing of the contract for six Project 75 Scorpene (Kalvari-class) submarines for the first submarine to be delivered in September 2017; the sixth and final submarine of the class will be delivered by mid-2022 (Kapur 2021:6 and 11). With all but two of the navy's 41 ships and submarines now being built in India under the 'Make in India' programme, such programme delays are likely to continue. An expanded and higher profile naval role, amidst a much higher level of operational tempo, has also affected combat efficiency and led to accidents and fires on board warships, the latter resulting in the sinking of a submarine in dock in Mumbai in August 2013 (Rahman 2013).

Russia's invasion of Ukraine and Western sanctions on Russia have also delayed or disrupted Russian and Ukrainian defence supplies to India, thereby further eroding the navy's combat

efficiency, even as India's political and diplomatic stand of 'neutrality' in the war remains controversial in the West and among the other Quad countries. The navy is dependent on Russia for its SSBN boats and programme; eight of 16 attack submarines; an aircraft carrier; three of ten destroyers; six Talwar-class frigates, with an additional four frigates being built in Russia and India (with Ukrainian turbines), of a total of 17 frigates in service; 43 MiG-29K naval combat aircraft of 137 fixed-wing aircraft; 11 Kamov-31 airborne early warning and control (AEW&C) helicopters and 12 Kamov-28 Helix anti-submarine warfare (ASW) helicopters of a total of 32 ASW helicopters. The navy is also dependent on a squadron of Sukhoi-30MKI flanker aircraft for a maritime strike role (Solanki and Barrie 2022).

In addition, the navy is dependent on Ukraine for the gas turbine engines for its Talwar-class frigates and Kolkata and Visakhapatnam-class destroyers; the first of two Ukrainian engines for two of the Indian-built frigates, originally scheduled for December 2022, is likely to be delayed or cancelled. According to a media report in May 2022, India halted negotiations with Russia for the acquisition of 10 Kamov-31 AEW&C helicopters due to "uncertainties" in arms supplies (Raghuvanshi 2022).

Another significant concern is lack of timely decision-making, affecting fleet strength and capabilities. This is notable in the depletion of India's fast-ageing submarine force. Of India's 16 SSKs, nine have been in service for over 30 years and three are aged between 22 and 29 years (Singh 2021); essentially nearly three-quarters of India's SSKs are over 20 years old (IISS 2022a).

The navy's 30-year submarine plan for 2030 (approved in July 1999) envisaged 24 boats on two production lines, comprising 18 SSKs and subsequently modified to include 6 SSNs (IISS 2022a). Yet, only 6 Kalvari-class SSKs are likely to have been commissioned by then, a quarter of the planned acquisition (Singh 2021). The primary reason for this is that although the Project 75 (India) follow-on programme for SSKs was approved in November 2007, its Request for Proposal (RFP) was issued only 14 years later in July 2021. To date, a government decision on implementation is awaited. In May 2022, it was reported that Russia, Germany as well as France, had pulled out of this competition. This essentially meant that no new Indian-built SSK would enter service before 2034.

This remains the case for the acquisition of nuclear-powered submarines, with India the only navy outside the P5 countries that currently operates an SSBN. Although India has also operated SSNs, its last SSN on lease was returned to Russia in June 2021. Once a decision on a follow-on SSN decision is taken, it will still take more than a decade and a half for the first of these to be commissioned (Kapur 2021:10). India planned to acquire one or two SSNs on lease from Russia from 2025 onwards (having leased an SSN from Russia from 1988-1991 as well as from 2012-21), but it is not clear if this will now take place following sanctions on Russia for its invasion of Ukraine (Roy-Chaudhury and Solanki 2020:173-174). Meanwhile, the second boat of the *Arihant*-class SSBN is undergoing sea trials, with two more under construction.

In effect, the total number of India's attack submarines will increase to a maximum of 18 by 2027, before reducing shortly thereafter due to the decommissioning of the older by then 40+ year old submarines, despite medium refit programmes.

Leveraging India's New Role as a 'Provider of Net Security' in the Indian Ocean

Since 2010, India has begun fulfilling a new and expanded role as a 'provider of net security' to select littoral and island states of the Indian Ocean. This has enabled it to become the 'first responder' for humanitarian and disaster-relief operations in the area.

At its heart lies collaboration in Maritime Domain Awareness (MDA). In December 2018, India launched the Information Fusion Centre for the Indian Ocean Region (IFC-IOR) which currently hosts 10 international liaison officers with a projection of 40 (Mukerji 2021). India has supplied coastal radar surveillance systems to Mauritius, Seychelles, Sri Lanka, Maldives, Myanmar and Bangladesh to enhance maritime security, and carries out EEZ surveillance and hydrographic surveys for island states (Indian MEA 2020a). Training of foreign sailors and naval officers take place regularly in the Indian navy's training establishments.

The largest naval ships in Sri Lanka, Mauritius and Seychelles are Indian-built offshore patrol vessels; India has provided arms and military equipment to Mozambique, Maldives and Comoros, and an old, refurbished submarine to Myanmar in October 2020. India is constructing a new airport (reportedly capable of hosting its P-8I aircraft), with a 3,048 metre

runway, a new port and logistics and communication facilities on the remote North Agalega island of Mauritius. In May 2018, India agreed to 'set up a Joint Task Force to undertake projects for port related infrastructure', including sea ports and container ports and airports, at the strategically-located Indonesian naval port at Sabang, on the tip of Sumatra island and at the mouth of the Malacca Strait (Indian MEA 2018). Sabang is the closest port from the easternmost island of the Andaman and Nicobar Islands. But, little progress has been made. In the larger Indo-Pacific region. India signed a contract in January 2022 to supply the Philippines with three batteries of shore-based *Brahmos* anti-ship missiles, along with training and an integrated logistics support package for the Philippine Marines (Indian MoD 2022b). However, in view of the Russian share of technology and components in the *Brahmos* missile, the supply schedule may be delayed.

The navy's engagements and operational tempo has consequently increased, with the number of exercises increasing significantly in the last few years. It carries out staff talks with over 20 navies and has 'institutionalised' combined bilateral naval exercises with 11 navies, including the US ('Malabar' series since 1992), Japan (since 2012) and Australia (since 2015), as well as select trilateral naval exercises. In November 2020, India agreed to include Australia in the Malabar-series (including Japan), held alternatively in the Bay of Bengal and the western Pacific, making this an exercise with all four navies of states comprising the informal 'Quad' grouping; this similarly took place in 2021. Coordinated naval patrols are carried out with Bangladesh, Indonesia, Myanmar and Thailand. The latest biennial meeting took place in February and March 2022 with over 40 countries sending warships/high-level delegations.. It featured 26 ships, one submarine, 21 aircraft, and one maritime patrol aircraft, and took place, for the first time, off the eastern city of Visakhapatnam, with all previous editions held in the Andaman and Nicobar Islands (Indian MoD 2022c). In addition, India has concluded bilateral logistics, navy to navy and information sharing agreements with several countries, as well as taken up capacity building to assist littoral and island states in augmenting their armed forces.

Strengthened bilateral ties with the US, Japan and Australia remain essential to India's naval and maritime air prowess, including logistics support agreements with all three countries. In 2020, India signed the last of the four key bilateral 'foundational agreements' on defence cooperation with the US (Indian MEA 2020b).

However, at the end of 2020, the navy had shifted its emphasis from being a 'provider of net security' towards becoming the 'preferred security partner' for littoral and island states of the Indian Ocean. This was essentially the result of budget constraints and capacity shortfalls that challenged the implementation of the navy's role as a 'provider of net security'. It also signalled India's more inclusive and minilateral/multilateral approach towards maritime security cooperation amidst the growing presence, influence and impact of China in the Indian Ocean.

Leveraging India's Andaman and Nicobar Islands as 'Force Multipliers'

For long, India has recognised the strategic advantage provided by its Andaman and Nicobar Islands located in proximity to the waterways of the Straits of Malacca-Singapore; its southern-most Great Nicobar island is only approximately 200 kms from the Indonesian island of Weh (also known as Sabang after its largest city).

Yet, it was only in October 2001 that a unified military command was set up in the capital, Port Blair. But, even this had limited military capability with only a few ships and aircraft permanently deployed, amidst environmental and infrastructure support challenges. Much of the focus was on the airbase at Indian Naval Station Baaz in Campbell Bay, located at the southern tip of the Andaman archipelago. A refurbished 1,050-metre airstrip extended to 1,400-metres in 2021 is being further extended to nearly 2,000-metres to enable the navy to operate its P-8I maritime surveillance aircraft from the base (Joshi 2019). The naval air station in Shibpur is also reportedly having its runway extended. As of June 2022, an expected extension of the runway to 3,048 metres, the length required to host larger military planes, had not occurred (Indian MoD 2019).

Following the June 2020 Galwan clash, India's parliamentary defence committee in December 2021 suggested that 'prioritising investment for development of various island territories as provisional aircraft carrier shall be contemplated', to which the Ministry of Defence responded that investment was indeed being prioritised to develop Operational Turn-Around (OTR) ports and extension of existing runways in the islands to support forward deployment of ships and aircraft (Peri 2021b).

6.1.4 Concluding Analysis

In view of India's recent border clashes with China, ties between Asia's two nuclear-armed giants are currently at their lowest point since the 1962 Sino-Indian war. India's view is that ties will continue to be deeply affected if there is no peace on the border. This has increased India's willingness to be a diplomatic counterweight to China through external balancing with like-minded partners, including deeper bilateral defence and security ties with the US, Australia and Japan as well as an active role in the 'Quad' grouping. This strategic convergence is expected to grow as the US' rift with China widens, despite India's refusal to condemn Russia's invasion of Ukraine.

However, the nature and extent of these defence ties will continue to be constrained due to India's geographic contiguity and trade relations with Beijing, as well as its proclivity to avoid escalation of conflict with a larger and more powerful China.

In military terms, the Modi government provided a bolder and more assertive posture towards China's aggression on the border, with the subsequent deployment of 70,000 troops in the area, re-deployment of artillery, tanks, fighter jets and helicopters, and stepped up long-standing plans and efforts to develop dual-use infrastructure to the rear. However, with Russia's invasion of Ukraine, and despite a visit by China's foreign minister, there are new concerns in New Delhi that China could engage in further 'muscle-flexing' along the LAC, with US/NATO attention diverted to Russia in the short-medium term.

In essence, it is India's numerical and qualitative advantages in naval and maritime air power in the eastern Indian Ocean and its role as a 'preferred security partner', supported by the US, that serves as a key counterweight to China's power projection in the area.

Yet, a reduction in the Indian navy's planned force levels, ongoing delays in warship construction, absence or lack of decision-making and a continuing inability to maximise its geographical/island-based leverages for power projection could erode its advantages vis-à-vis the Chinese navy by the end of the decade. This could be exacerbated by a delay or disruption of Russian and Ukrainian arms and spares affecting the Indian navy's combat efficiency, as well as by a deployment of a Chinese aircraft carrier in the Indian Ocean, for the first time, expected by 2025.

6.2 Leveraging India to Increase Strategic Options

India's relations with Australia have been transformed over the past two years. This has taken place with their Comprehensive Strategic Partnership (4 June 2020) and the associated Joint Declaration on a Shared Vision for Maritime Cooperation in the Indo Pacific as well as the Mutual Logistics Support Arrangement and the Defence Science and Technology Implementing Arrangement. These were followed by their second virtual summit in March 2022 and a month later their Economic Cooperation and Trade Agreement (AI-ECTA) of April 2022 (Indian Ministry of Commerce and Industry 2022).

Bilateral defence and security ties include regular military exercises (including the biennial AUSINDEX series and the annual Malabar series of naval exercises), professional exchanges, operational coordination, and nascent defence technology cooperation (Jaishankar 2020). As indicated in the India-Australia foreign ministerial statement in February 2022, Australian interests in the north-east Indian Ocean are also welcomed by India (Australian Government 2022).

In effect, Australia's strategic options can be increased through the following:

i) Strengthening and expanding coordinated maritime air surveillance/maritime dominance awareness capabilities in the eastern Indian Ocean, along with joint training and inter-operability. Both India and Australia possess P8 maritime surveillance aircraft; these have conducted coordinated operations in ASW and surface surveillance to enhance maritime domain awareness. With common aircraft there are opportunities for expanded coordinated missions, inter-operability and joint training (including for mid-air refuelling); and even, perhaps, the establishment of a joint 'maritime air hub' for logistics and maintenance for P8 aircraft in India. The operation of Australian P-8s should also take place from naval air bases in south-eastern and western India as well as India's Andaman and Nicobar islands (in September 2020, a US P-8A aircraft landed in Port Blair for the first time for logistics and refuelling support). This could be reciprocated by the operation of Indian P-8s from the Cocos (Keeling) islands. The Indian and Australian militaries also operate C-

17 strategic transport aircraft, C-130 tactical aircraft and Chinook heavy-lift helicopters.

ii) Both navies need to expand and deepen their military interactions. In April 2022, an Indian navy P-8I participated in coordinated operations in 'ASW and surface surveillance' from Darwin to enhance MDA with Royal Australian Air Force (RAAF) P-8 aircraft. An RAAF P-8A aircraft carried out a reciprocal visit to Goa in June 2022, undertaking coordinated operations involving 'ASW and surface surveillance' with an Indian P-8I aircraft (Peri 2022b). This should be deepened to joint surveillance and patrolling, as in the case of India and France in the south-western Indian Ocean from the French island of La Reunion in May 2022 (Peri 2022c). Both the Indian and Australian navies should also expand their trilateral exercises and cooperation with Indonesia and Japan; and post-AUKUS with France, although at a later stage. The 'Malabar-series' of naval exercises need to be made more complex, as well as to take place for a longer period of time in both the eastern Indian Ocean and the western Pacific.

iii) Both countries need to cooperate more closely diplomatically as well as seek a convergence of interest in relation to the small island states in the Indian Ocean. With the announcement of the opening of the Australian High Commission in the Maldives, Australia will be the third western country to open a resident embassy in the Maldives, alongside the UK and USA. This provides a unique opportunity for Australia to engage with India in the Maldives, to provide a platform for the two countries to address shared interests and concerns on maritime security, as well as countering extremism and terrorism.

iv) In view of the expanding navy and miliary cooperation between the two countries, all three services should be represented in the Australian diplomatic mission in New Delhi (and also in the Indian High commission in Canberra), and they should be led by a one-star military officer (currently, the Defence Advisors in both countries are navy Captain-level officers).

v) India and Australia may incrementally consider setting up a bilateral navies-led intelligence sharing mechanism, documenting Chinese military surface, as well as

underwater activities across the Indian Ocean region. They may also consider sharing wider assessments of present and future Chinese naval-led capabilities and operations in the region.

vi) Finally, it should be noted that India greeted news of the formation of the AUKUS partnership on 15 September 2021 coolly. Although it privately welcomed the resolve of the three countries to counter China, it was concerned that it could have a negative security consequence for India while detracting from the Quad's significance. The Indian security establishment's chief concern with AUKUS appears to be that it may lead to an increase in the number of SSNs (both Chinese and Australian) operating in the eastern Indian Ocean from the 2030s onwards, an issue aggravated by the fact that the Indian navy would like to acquire these types of vessels but has not received political approval to do so (IISS 2022b). Therefore, there needs to be dialogue between the two countries on the impact of AUKUS in relation to India.

7. Report Conclusion: A More Dangerous Neighbourhood - Implications of Indo-Pacific Arms Modernisation for Australian Defence Strategy

Between 1945 and roughly 2010, Australian defence policy rested upon the belief that geographic isolated coupled with technological superiority largely insulated Australia's territory from a major conventional attack. Over the past decade, however, these assumptions have been called into question by rapid economic development and force modernisation across the Indo-Pacific. While Australia was once assured of its relative technological advantage, its regional neighbours have since closed the gap. The speed of regional force modernisation, in turn, undermines Australia's advantageous strategic geography. Australia may still be an island nation, but in the words of Paul Dibb, '[n]owhere in the world is much further away than about 45 minutes flight by intercontinental ballistic missiles' (2006:253). The proliferation of ballistic missiles, attack aircraft and the continued development hypersonic weapons are increasingly placing Australian targets within striking distance.

How should Australia respond to these changes to the strategic landscape? Australian strategist, Andrew Davies argues that the significance of geography to defence policy has diminished and that defence planners should instead focus on countering long range ballistic

missiles, cyberattacks, information warfare, economic coercion, and other so-called 'grey zone' tactics (Davies 2021). On the other extreme, some defence scholars, such as Paul Dibb and Hugh White, continue to argue that strategic geography is as relevant as it has ever been to Australian defence planning (White 2018, White 2019b, Dibb 2006, Dibb 2018, Medcalf 2020). This concluding section adopts a middle ground. It argues that force modernisation has made Australia vulnerable to long-range attacks and other forms of coercion; however, this has not entirely negated Australia's geographic advantage.

We analyse the new challenges facing Australia by examining two key elements of strategy: time and space. These domains provide the basis for all strategic calculations. Carl von Clausewitz recognised this fact back in 1873 when he wrote that the calculation of time and space is 'universally at the foundation of strategy and is to a certain extent its daily bread' (von Clausewitz 1873:102). This sentiment was seconded by Napoleon, who argued that strategy is the 'art of making use of time and space' (Cunningham and Tomes 2004:119). More recently, Australian strategist Andrew Carr argued that strategy is, in essence, 'action in time and space' (2021:303).

We will first examine the implications of force modernisation in the Indo-Pacific for Australian defence planners' understandings of time. It is argued that Australia's procurement time is slipping behind that of its regional neighbours, which in turn is eroding its technological advantage. The proliferation of advanced military technologies is reducing warning time by enabling rapid and even instantaneous attacks. These advances have reduced reaction time, which can have serious implications for strategic decision making.

The changes within Australia's region have also affected strategists' notions of space. Traditionally, Australia's strategic geography has been considered one of the nation's greatest defensive assets. However, in the age of hypersonic weapons this may no longer be the case. While Australia may find itself protected from conventional attack by its geographic isolation, this may no longer hold true of other forms of aggression.

We will close with a discussion of how Australia can most effectively adapt its defence strategy to mitigate these new risks. No power, however advanced its military, has developed the capabilities to execute a conventional attack upon the Australian mainland without a forward operating base. Therefore, the priority for Australian defence policy is to maintain

and expand its influence in Southeast Asia and the South Pacific to ensure that no potentially hostile power acquires such a foothold in Australia's vicinity.

7.1 Time

Time is a fundamental aspect of military strategy and defence planning. As Colin Gray states, 'the importance of time and timing is stamped on every page of modern strategy' (199, 172). In spite of this, there is often little explicit discussion of time in military strategy and planning documents (Cunningham and Tomes 2004:133, Carr 2021:303). This is surprising as 'in strategy, time is as much a part of the operating environment as geography'(Royal College of Defence Studies 2010:12). Space, or physical geography, on the other hand, has been the subject of much strategic and policy debate and has even formed the basis of one of the predominant areas of strategic thought, geopolitics.

There are three aspects of time that clearly illustrate the challenges faced by Australian defence strategists. These are procurement time, warning time and reaction time. Australia is falling behind its regional neighbours in its procurement timeline. This may reveal a capability gap which could be exploited by a hostile or opportunistic rival. Technological advancement has contracted the comfortable warning time that has informed Australia's procurement cycle. Australia can no longer rely on a ten year lead up to any significant territorial attack. Technological advances have also compressed reaction time. The speed of attack and the wealth of electronically generated intelligence has created unprecedented challenges for decision-makers and brought new meaning to Clausewitz's concept of the 'fog' of war (Clausewitz 1873:54).

7.1.1 Procurement Time

Procurement time is the time that it takes for a state to identify a need, select capabilities appropriate for addressing that need, and acquire and operationalise the new capabilities. Australia has traditionally maintained a technological advantage over its regional neighbours. Indeed, according to the 2016 White Paper, Australia's defence is premised on its 'ability to deploy, operate and sustain technologically superior capabilities' (Department of Defence 2016:19).

The region's force modernisation, however, is currently out-pacing Australia's own procurement schedule. Regional powers are addressing needs faster than Australia, which is causing a significant shift in the technological balance. Australia's comparative advantage is being eroded and Andrew Davies argues that the 'next generation of theatre and global-range weapons will only continue the trend' (2021:151). Increased affluence is enabling states to invest in cutting edge capabilities, including longer-range precision-guided missiles, hypersonics, directed energy weapons, unmanned systems and quantum computing (Markowski, Bourke and Wylie 2019:477, Davis and Kennedy 2017).

In 2019, Asia's defence spending constituted 27.7% of the world's total defence expenditure (Tan 2020:208). According to the 2016 White Paper, over the next two decades 'half of the world's submarines' and 'at least half of the world's advanced combat aircraft armed with extended range missiles and supported by highly sophisticated information networks will be operating in the region' (Department of Defence 2016:49-50, Markowski, Bourke and Wylie 2019:477). China, in particular, has invested heavily in long-range strike capabilities (Jennings 2019:7), which will significantly diminish Australia's regional defence capability superiority (Department of Defence 2016:49). Stephen Biddle and Ivan Oelrich have argued that '[t]echnological change is progressively reducing the net cost of striking axed targets such as power plants, cities, transportation hubs, or other civilian value targets with precision-guided ballistic missiles at ever-increasing ranges' (2016:14).

One reason Australia is falling behind is that it is too focused on a small range of 'exquisite platforms' that take years to develop (Yildirim 2022). Ambitious projects not only take longer to build, they are also more prone to delay. For example, the Australian decision to invest in nuclear-powered submarines through the AUKUS technology-sharing partnership means that it is likely to be at least two decades before the new submarines are operational (Nicholls, Dowie and Hellyer 2021). In contrast, Singapore purchased the less ambitious German Type 218 submarines off the shelf and anticipate that they should be delivered within five to six years after their purchase date, taking into account COVID-19 related delays (Kadib 2020, Rahmat 2020).

In a recent audit report, it was found that there is an average delay of 23 months across all current Australian defence projects, which is attributed to their complexity (Australian National Audit Office 2021). Threats, on the other hand, are evolving at an increasing pace.

In particular, in the realm of irregular warfare. Ulas Yildirim argues that Australia needs to be prepared to fight in the 'grey zone'. This requires agile procurement processes that can quickly acquire the necessary capability to respond to the dynamic threat environment.

Australia's slow and steady procurement cycle can be exploited by a rival power (Davis 2019:13). Andrew Carr argues, '[w]hen two states hold different conceptions of time, are working on different time horizons or have differing views about the likely ordering of events, a strategic opportunity can present in the form of surprise attacks' (2021, 311). The differences between two states' concept of time can provide an opportunity for a potential aggressor. A fast-moving enemy can strike before its opponent has developed sufficient capabilities to counter its attack (Carr 2021:311). The Department of Defence has acknowledged that Australia's defence capability development is being outpaced by its regional neighbours. It has stated that it is therefore essential that it use 'effective strategic warning to prepare to succeed despite surprise' (Davis 2003:4).

7.1.2 Warning Time

Strategic warning time can be understood as 'the time a country estimates an adversary would need to launch a major attack against it, once the adversary's intent to do so has been established' (Department of Defence 2020:15). Or, as the Kim Beazley submitted while the Minister of Defence, 'the process by which government adjusts defence planning to political and military developments' (1988:72). Since the 1970s, two fundamental assumptions have underpinned Australian defence policy. First that Australia's military capabilities should be sufficient to counter low and medium-level contingencies, and that the capabilities to launch a massive assault on Australia did not exist in the region and would take many years to develop (Beazley 1988:73, Brabin-Smith 2012:33).

In the 1987 Defence White Paper it was argued that Australia's concept of warning was different to that of nations in the northern hemisphere. While they faced 'direct and identifiable military threats from nearby forces to which they may have to respond in timescales measured in days and weeks. Australia faces no presently identifiable major military threat, except for the remote possibility of global war' (Department of Defence 1987: 30). This line of reasoning was continued in the 1994 White Paper, which argued that no country in Australia's region had the capability or intention to launch a conventional attack

on Australia, and that ‘the capabilities required could not be developed from the existing low base in much under a decade’ (Department of Defence 1994:23). The 2000 and 2009 White Papers took a similar approach to warning time, with the prediction that Australia would most likely remain safe from external threat until 2030 (Department of Defence 2009).

The world of today, however, is not the same as that of 2009, or even 2016. Australia can no longer assume that it is sheltered from global power struggles by its remote geography. Australia is increasingly vulnerable to ‘coercive strategic bombardment’ or other kinds of military coercion (Biddle and Oelrich 2016:14). Medium to low end contingencies, including ballistic missile attacks, naval strikes and raids, are now either already possible or seem likely to be so within the ten-year window. Yet, these developments must be tempered against the fact that these technological developments do not put Australia in peril of a major conventional assault. High-end contingencies, such as invasion, continue to be beyond the reach of any regional power within the next ten years. As John Bruni argues, ‘modernising and building a fleet of warships and fighter planes to alter the regional balance of power and threaten Australia is not something that any state in Southeast Asia or the South Pacific can do easily, stealthily or affordably’ (2020:4). As such, although on the one hand force modernisation across the region is increasingly Australia’s vulnerability, it remains at the lower end of the escalation ladder. Major conventional attack or invasion remains a remote possibility with the time horizon of current strategic guidance.

Another factor that challenges Australia’s traditional understanding of warning time is the increase in grey zone activities. These are acts that are ‘designed to coerce countries in ways that seek to avoid military conflict’ (Department of Defence 2020:12). While grey zone activities are not new, there prominence within Australia’s strategic environment has increased markedly over the past two decades, facilitated by new developments in cyberwarfare (Department of Defence 2020:12). Indeed, China has effectively been employing these tactics against Australia and other nations in the Indo-Pacific, particularly in the South China Sea (Davis 2019:2).

In response, Australia can improve its warning systems by augmenting intelligence capabilities. Nicholas Barber, for example, argues that Australia needs improved surveillance and reconnaissance to counteract the uncertainty and volatility of Australia’s strategic environment (2020:72). However, while effective intelligence may result in timely warnings,

this provides no guarantee that warnings will be heeded. History is littered with examples of surprise attacks that were effective despite warnings (Davis 2003:5). As Richard Betts states, 'fixation on intelligence channels… diverts attention from other aspects of the problem' (1982:17). Indeed, avoiding surprise is an unrealistic goal (Davis 2003: 6). Instead, Australia should limit the damage that could be caused by a surprise attack. As Rory Medcalf observes, 'unreadiness does not stop war, however; it may even hasten it' (2020).

7.1.3 Reaction Time

Traditionally, military strategists have approached the issue of time with the objective of increasing the speed of action (Cunningham and Tomes 2004:119). States have strived for rapid domination of their adversaries, while attempting to draw out their opponent's campaign. The rational is simple: short wars are more desirable as they are less costly and risky (Mearsheimer 1983:24). Recent technological advances, however, have compressed the action-reaction cycle to the point where near instantaneous attacks and automatic retaliation are possible. This has provided the strategist with certain advantages. As Kevin Cunningham and Robert R. Tomes write, 'Compressing one's decision cycle yields a competitive advantage in some decision areas (as measured quantitatively, not qualitatively) during conflicts and military engagements' (2004:129). Yet, these capabilities must be properly integrated into Defence's decision-making cycle for them to be effective. Although Australia has taken steps in this direction it remains a long way from effectively integrating these new technologies fully into its decision-making chain.

These technologies have also created new challenges for defence strategists and decision makers. An increase in the use of artificial intelligence, hypersonic weapons, as well as semi and fully automatous vehicles has the potential to challenge human cognition. The new tempo of conflict raises the risk of strategic miscalculation. Back in 1994, David Jablonsky argued that new technological development could increase the probability of error and miscalculation by forcing decision makers to act within compressed timeframes. In addition, the increase in electronically generated information would make it more difficult for decision makers to process data in real time (Jablonsky 1994). Almost three decades later, strategists find that technology has taken yet another quantum leap. There is now a real risk that the 'intolerable time pressure' of modern military technology may undermine the ability of parties to make calculated decisions (Cunningham and Tomes 2004:130).

It is not just war that is getting faster, so too is conflict onset (Davis 2020:88). The combination of factors including grey-zone tactics, long-range weapons and the complexity of new military technologies creates a situation in which hostilities can quickly escalate (Davis 2019:3). They can also compress the window during which decision-makers could make sense of the nature of an attack and formulate a proportionate response (Smith 2019). Rory Medcalf and James Brown argue that '[p]recision strike weapons, remotely piloted (or potentially autonomous) weapons platforms, offensive cyber, and other new disruptive technologies are increasing the pace of conflict, including the speed at which it can begin and end' (2015:12).

The key to managing this increase in pace is preparation. As Carr argues, the most important time for strategists is the period between peace and war (2021:317). This transition period must be recognised if it is to be effectively utilised. Richard K. Betts identified three stages of warning: political, strategic and tactical. Political involves a period of heightened tensions that may signal that deterrence is unlikely to be successful. Strategic is the phase in which the enemy forces are mobilising and tactical is the initial detection of the actual attack. Betts argues that failure to react to any of these three stages of warning degrades the ability to defend against an aggressor (Betts 1982:4-5).

Dibb argues that Australia has already entered a period of defence warning time in which a potential adversary is deploying military capabilities in Australia's strategic zone. Dibb argues that China is contesting Australia's 'inner arc' or the zone between the Indonesian archipelago and Papua New Guinea to the Solomon Islands and Vanuatu. This signifies that Australia has entered the warning phase because 'a change of intention is all that a potential adversary would need to do to transform a presence into a direct military threat' (Dibb 2020).

7.2 Space

Space has long been considered a fundamental determinant of military strategy (Murray, Knox, and Bern 1994). A state's location and physical terrain comprise its strategic geography which, according to Dibb, is 'one of the most important factors driving military posture and force structure' (2006:247). Indeed, Cold War strategist Nicholas Spykman went as far as to call geography 'the most fundamentally conditioning factor in the formulation of

national policy' (1938:29). A cornerstone of Australian defence policy is the idea that its physical isolation provides protection. However, isolation can also render a state vulnerable to aggression, especially from a rising power.

Traditionally, the Australia-US alliance has been the cornerstone of Australian defence policy. This alliance affects Australia's strategic geography by providing extended nuclear deterrence and support in international and regional crises. However, this alliance has also expanded Australia's operational sphere to the Middle East, a shift which may undermine Australia's ability to defend its vital regional interests (Dibb 2006:259-261). This section will argue that if Australia wants to maintain its security it will need to prioritise its own region. This is the only way that it can prevent a foreign military power obtaining influence in Southeast Asia or the South Pacific and challenging the security of Australia's maritime approaches (Dibb 2018:101).

7.2.1 Proximity Matters

Australia's relative geographic isolation has long been a double-edged sword (Lockyer 2017, Lockyer 2015). On the one hand, Australia has benefitted from being far removed from the main centres of military power in Europe, East Asia and the Americas (Rose 1959:307, White 2019a:6, Dibb and Brabin-Smith 2021:5). It provided a sense of security that no attack could be made without significant warning. On the other hand, the 'tyranny of distance' created a popular fear that Australia was alone and vulnerable in a populous and resource-hungry Asia (Dibb 2006:248).

Rapid technological developments have undoubtedly created new challenges for Australian defence. Some scholars have questioned the continued relevance of distance in the age of hypersonic weapons and cyber warfare (Davies 2021:159). Military modernisation has, however, not entirely negated Australia's geographical advantage. New technology has altered the way that geography affects military operations. But, as Hugh White observes, these technologies 'have not changed the fundamental fact that military operations involve inflicting physical damage at a specific location, and the greater the distance over which force must be projected… the harder and more expensive it becomes' (White 2019b:49, Smith, Lim and Lockyer 2021). Australia's position as an island nation means that it is most likely that any significant threat to Australia would come from the sea (Dibb and Brabin-Smith

2021:11). The same holds for Australia's neighbours, all of which are islands or archipelagos. Effective defence against aggression would require the ability to control air and sea approaches (Dibb 2006:255). A J Rose argued back in 1959, 'Australia can only be brought to heel, at the last resort, by the country that controls the sea. The matter of sea power should, therefore, always be in the background of our consciousness' (1959:304).

There is a stretch of approximately 4,000 kilometres of ocean between Australia and the Chinese mainland. Traditionally, Australia has viewed this expanse as an effective buffer zone which would preclude any Chinese threat to Australia's territorial integrity (Rose 1959:307, Davies 2021:151). Force modernisation, however, is radically altering this strategic assumption. In fact, China's investment in its armed forces may soon enable it to traverse the divide. Thomas Shugart argues that China's force modernisation is 'the greatest expansion of maritime and aerospace power in generations' and China is fast 'developing the military capability to put at risk Australia's territorial integrity' (Shugart 2021:1 and 3, Kwon 2020:501). Although the threat of invasion remains remote, China's ability to seize and hold sea control for sufficient time and distance from the Australian coastline to conduct 'from sea' operations (e.g. cruise missile attacks, bombardment, air strikes or temporary blockade) are increasingly feasible options for Beijing to contemplate.

While the sea power of regional actors has dramatically increased over the past decade, there has been no significant improvement in the speed at which ships travel. Shugart estimates that it will still take China at least eight years to develop the ability to imperil Australia's vital interests or territorial integrity because, at present, Chinese military power is constrained within the First Island Chain (Shugart 2021:18-19). If China were to contemplate a direct land attack on the Australian mainland, it would first have to obtain a forward operating base (White 2019b:49). A priority for Australia must therefore be to deny China a foothold in its neighbourhood. To do this, it will need to expand its influence in Southeast Asia and the South Pacific.

Australia needs to recognise that its most important security interests lie in its own region. A fundamental principle of geopolitics is that distance matters. A proximate power is more threatening than a far power (Walt 1985:11). Australia's neighbours are its chief security guarantors simply because they are so close. These are the states that have the power to

permit or deny China a military base that would enable it to launch a conventional attack on the Australian mainland (White 2019a:18).

The significance of China establishing a base close to Australia should not be understated. Davis argues that ‘a forward Chinese military presence, expanding out from military bases in the South China Sea through the archipelago to our north and potentially into the South Pacific between Australia and the US, would fundamentally change our strategic calculus for the worse’ (2020:4). Neither should it be presumed that this is a remote contingency. Great powers will project their influence as far as they can and will only stop at the point at which they meet resistance from another power (White 2019a:17). Australia has shown little interest in developing a sphere of influence in the South Pacific or Southeast Asia. As a result, a power vacuum now exists - one which could easily be exploited by an aspiring hegemon.

7.2.2 Filling the Void

Southeast Asia has long been an area of vital strategic concern for Australia (Lockyer 2017:119). Any direct attack on the Australian mainland will need to pass through this region (Wey 2016:132). The 2017 Foreign Policy White Paper acknowledges the strategic importance of this region, but calls for a ‘secure, open and prosperous Indo-Pacific’ (Australian Government 2017:iii). However, this begs the question of whether an open region can be truly secure.

Australia currently relies upon the US to maintain supremacy in the Indo-Pacific. However, it may need to contend with the fact that there could come a time when the US is forced to relinquish that position (Lawrence 2020:69). According to Medcalf, Chinese strategists have long felt that US presence in the western Pacific constrained China’s ability to navigate (Medcalf 2020). To continue to grow, China needs to increase its import and export trade. However, it does not have unfettered access to maritime trading routes. The US still maintains the ability to restrict Chinese trade. It is therefore in China’s geopolitical interest to develop new routes into Southeast Asia and the South Pacific (Morris 2019:3). These trade routes may well lay the groundwork for future bases.

If Australia is to protect the air-and-sea gap and prevent a hostile power from securing forward bases in Southeast Asia it cannot leave the region ‘open’. Rather, it will need to

expand its influence in the region. To do this, Australia will have to work with its regional neighbours who share its strategic vulnerabilities. This means taking their security concerns seriously, including those concerning climate change, which some South Pacific nations view as an existential threat (Schleich 2018:9, White 2019a:20). Anne-Marie Schleich warns that Australia risks losing influence in the South Pacific due in part to China's increased investment in the region and Australia's poor track record on climate change (Schleich 2018:9).

White states that Australia's influence in the South Pacific only subsists because, as yet no other power has attempted to challenge it (White 2019a:12).

This situation can only be reversed with serious and sustained diplomatic, economic and military investment. Australia needs to recognise that distance matters. Strategic geography dictates that Melanesia will be more important to Australian security than Polynesia and Micronesia. But just as important is Australia's neighbour to the north, Indonesia. White has recommended that Australia form a formal alliance with Indonesia. He observes that if it continues to grow at its present rate, Indonesia will be the world's fifth-largest economy by 2040, enabling it to exercise considerable power in the region (White 2018:7). Indeed, Indonesia may one day become a more important economic partner than China. Indonesia may not match China's economy, but it is closer, and Australia should '[n]ever underestimate the importance of proximity' (White 2018:8).

Australia should also build on its long history of military cooperation with Malaysia (Wey 2016) and increase its presence at the Butterworth base in Penang. In addition, it can use its involvement with the Association of Southeast Asian Nations to help balance China's influence (Bhattacharya and Eadon 2021:121). Medcalf argues that cooperation between Australia, India, Japan, Indonesia and Vietnam would enable these Indo-Pacific powers to collectively shape their future. Middle states facing a rising hegemon, must seek safety in numbers (Medcalf 2020:47 and 30).

7.3 Final Conclusions

Force modernisation in the Indo-Pacific has created new challenges for Australian national security. Technological developments and increased military expenditure are causing

strategists to question some of the comfortable assumptions that have underpinned Australian defence policy. These include the idea that Australia's isolated location gives it protection from aggression, and that any significant attack would not occur without a substantial warning period.

This concluding section has analysed these new challenges to Australian defence policy by examining the implications for time and space. This is because time and space are the two arenas in which strategy can be devised and executed. The first part of this section found that Australia's procurement time is falling behind that of its regional neighbours. This means that it has lost its technological advantage - an advantage that will be costly to regain. It also discussed warning time. It is no longer the case that Australia will have up to a decade of notice before a hostile power can choose to launch an attack. New technologies, including hypersonic weapons and cyber capabilities, can be deployed with little to no notice. The speed at which these technologies operate also compresses reaction time, which can lead to sub-optimal decision making and disproportionate responses.

Despite these advances, geography still matters. Australia could suffer a damaging long-range attack, but no state in the Indo-Pacific possesses the capabilities to launch a conventional attack on the Australian mainland without a forward operating base. Therefore, it is essential that Australia prevent any potential rival from establishing such a presence in Southeast Asia or the South Pacific. Australia's disinterest in the South Pacific, and focus on expeditionary conflicts, has left a power vacuum in the region. If Australia wants to ensure that no foreign power acquires the ability to threaten its territorial integrity, it needs to expand its influence in its own region, and work with regional partners to keep the Indo-Pacific from becoming a more dangerous neighbourhood.

Reference List

ABC (2019), 'China's Policy on Australian Coal is "As Dark and Impenetrable as Night" and That's How it Wants it', 25 February, www.abc.net.au/news/2019-02-25/china-policy-on-australian-coal-dark-and-impenetrable/10843148

ABC (2021), 'US to Send More Planes, Including Bombers, to Australia Under Defence Pact', 17 September, https://www.abc.net.au/news/2021-09-17/us-raises-concerns-about-china-economic-coercion-of-australia/100469360

ABC (2022), 'China's Security Pact With Solomon Islands Signals a New Era in the South Pacific for Australia and its Allies', 21 April, https://www.abc.net.au/news/2022-04-21/china-in-the-solomon-islands-as-it-expands-into-south-pacific/101001458

ADB (2021), *India and ADB*, https://www.adb.org/countries/india/economy

ADBR (2021), 'Indonesia to Order FREMM Frigates and Rafale Fighters', 21 June, https://adbr.com.au/indonesia-to-order-fremm-frigates-and-rafale-fighters/

Anwar, Dewi Fortuna (1996), *Indonesia's Strategic Culture: Ketahanan Nasional, Wawasan Nusantara, and Hankamrata* (Nathan, Queensland: Griffith University).

Arms Control Association (2021), 'South Korea Boosts Military', September, https://www.armscontrol.org/act/2021-09/news/south-korea-boosts-military

Asahi Shimbun (2022), 'Abe Suggests Japan Start 'Nuclear Sharing' Discussion', 28 February, https://www.asahi.com/ajw/articles/14560003

Asare, Benjamin A. (2020), 'Peacetime Partnerships in the Indo-Pacific', *Army Lawyer*, 2, pp. 86-96.

Australian Government (2017), '2017 Foreign Policy White Paper', Department of Foreign Affairs and Trade, Canberra, https://www.dfat.gov.au/sites/default/files/2017-foreign-policy-white-paper.pdf

Australian Government (2022), 'Australia-India Press Conference', Department of Foreign Affairs and Trade, Canberra, 12 February, https://www.foreignminister.gov.au/minister/marise-payne/transcript/australia-india-press-conference

Ayson, Robert (2015), *Asia's Security* (London: Palgrave Macmillan).

Babones, Salvatore (2021), 'China's Neighbors Are Stronger Than We Think', *Foreign Policy,* 21 March, https://foreignpolicy.com/2021/03/18/china-india-japan-quad-biden-indo-pacific-military-geopolitics/

Ball, Desmond (1993), 'Arms and Affluence: Military Acquisitions in the Asia-Pacific Region', *International Security,* 18:3, pp. 78-112.

Ball, Desmond (2010), 'Arms Modernization in Asia: An Emerging Complex Arms Race', in Andrew T. H. Tan (ed.), *The Global Arms Trade* (London and New York: Routledge), pp. 30-51.

Barber Nicholas (2020), 'Making Sense of Accelerated Warfare: Army's Adaptive ISR Capability', *Australian Army Journal,* 16:1, pp. 61-77.

Barthwal-Datta, Monika and Chacko, Priya (2020), 'The Politics of Strategic Narratives of Regional Order in the Indo-Pacific: Free, Open, Prosperous, Inclusive?', *Australian Journal of International Affairs,* 74:3, pp. 244-263.

Basu, Titli (2020), 'Sino-US Disorder: Power and Policy in Post-COVID Indo-Pacific', *Journal of Asian Economic Integration,* 2:2, pp. 159-179.

Bateman, Sam (2018), 'Submarine Acquisition in Southeast Asia: The Dangers' in Geoffrey Till and Collin Koh Swee Lean (ed.), *Naval Modernisation in Southeast Asia, Part Two : Submarine Issues for Small and Medium Navies* (London: Palgrave Macmillan), pp. 15-28.

BBC (2011), 'China Aircraft Carrier Confirmed by General', 8 June, https://www.bbc.com/news/world-asia-pacific-13692558

BBC (2020), 'India-China Clash: An Extraordinary Escalation With Rocks and Clubs', 16 June, https://www.bbc.com/news/world-asia-india-53071913

BBC (2021), 'Record Number of China Planes Enter Taiwan Air Defence Zone,' 5 October, https://www.bbc.com/news/world-asia-58794094

Beazley Kim (1988), 'Thinking Defence: Key Concepts in Australian Defence Planning', *Australian Journal of International Affairs*, 42:2, pp. 71-76.

Bedi Rahul (2021), 'Indian Air Force's Mirage 2000H Upgrade Programme Delayed', *Janes' Defence Weekly*, 11 October, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/BSP_7259-JDW

Bedi, Rahul (2015), 'HAL Hands Over First Series Production Tejas', *Jane's Defence Weekly*, 20 January, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/jdw57499-jdw-2015

Bedi, Rahul (2020), 'Indian Air Force Fast-Tracks Procurement of MiG-29 and Su-30 Fighters', *Jane's Defence Weekly*, 19 June, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/FG_3206499-JDW

Bennett, Bruce W. (2020), 'South Korea: Capable Now, Questions for the Future' in Gary J. Schmitt (ed.), *A Hard Look at Hard Power: Assessing the Defense Capabilities of Key US Allies and Security Partners* (Carlisle: US Army War College/Strategic Studies Institute), pp. 255-292.

Betts, Richard K. (1982), *Surprise Attack: Lessons for Defense Planning*, (Washington D.C: Brookings Institution Press).

Bhattacharya, Deekhit and Ashley Eadon (2021), 'Oceans of Churn: Australia's 2020 Defence Strategic Update and the Indo-Pacific', *Maritime Affairs: Journal of the National Maritime Foundation of India*, 17:1, pp. 116-125.

Biddle, Stephen and Ivan Oelrich (2016), 'Future Warfare in the Western Pacific: Chinese Antiaccess/Area Denial, U.S. AirSea Battle, and Command of the Commons in East Asia', *International Security*, 41:1, pp. 7-48.

Blank, Stephen (2020), 'The Un-Holy Russo-Chinese Alliance', *Defence & Security Analysis*, 36:3, pp. 249-274.

Bloomberg (2021), 'Relations Between China and India Have Deteriorated', *Bloomberg*, 19 November, https://twitter.com/business/status/1461607600693604353

Brabin-Smith, Richard (2012), 'Force Expansion and Warning Time', *Security Challenges*, 8:2, pp. 33-48.

Brimelow, Benjamin (2021), 'With Tension Rising in the Pacific, Australia is Preparing to Fight Alongside the US and on its Own', *Business Insider*, 20 June, https://www.businessinsider.com/australia-preparing-to-fight-alongside-us-and-on-its-own-2021-6

Bronk, Justin (2020), 'Russian and Chinese Combat Air Trends Current Capabilities and Future Threat Outlook', RUSI Whitehall Report, https://static.rusi.org/russian_and_chinese_combat_air_trends_whr_final_web_version.pdf

Bruni, John (2020), 'What is the Real Question at the Heart of Dibb's Recent Musings on Australia's Defence?', *SAGE International Australia*, pp. 1-7.

Buzan, Barry (1987), *An Introduction to Strategic Studies: Military Technology and International Relations* (London: Palgrave Macmillan).

Cabestan, Jean-Pierre (2019), 'China's Military Base in Djibouti: A Microcosm of China's Growing Competition with the United States and New Bipolarity', *Journal of Contemporary China*, 29:125, pp. 731-747.

Carr, Andrew (2021), 'It's About Time: Strategy and Temporal Phenomena', *Journal of Strategic Studies*, 44:3, pp. 303-324.

Chakraborty, Mohor (2020), 'Navigating the Contours of Maritime Defence Cooperation Between India and Japan: Impulses, Challenges and Opportunities', *Maritime Affairs: Journal of the National Maritime Foundation of India*, 16:2, pp. 106-118.

Chang, Felix K. (2020), 'Born Again: Japan's Maritime Self-Defense Force Revitalization', *Geopoliticus*, Foreign Policy Research Institute, 4 December, https://www.fpri.org/article/2020/12/born-again-japans-maritime-self-defense-force-revitalization/

Cheang, Sopheng (2020), 'Cambodia Denies New Speculation About Chinese Base Plans', *Associated Press*, 6 October, https://apnews.com/article/thailand-china-archive-cambodia-345a88965b1c0272448c2270e966fc39

China Daily (2013), 'China to Optimize Army Size, Structure: CPC Decision,' *China Daily*, 16 November, http://www.chinadaily.com.cn/china/2013cpctps/2013-11/16/content_17109773.htm

CNBC (2021), 'Biden Orders Closer Review of Covid Origins as U.S. Intel Weighs Wuhan Lab Leak Theory', 26 May, https://www.cnbc.com/2021/05/26/biden-orders-us-intelligence-to-intensify-investigation-into-covid-19-origins.html

Congress.gov (2021), Strategic Competition Act of 2021, https://www.congress.gov/bill/117th-congress/senate-bill/1169/text

Cole, Bernard (2001), *The Great Wall at Sea: China's Navy Enters the Twenty-First Century* (Annapolis: Naval Institute Press).

Crossley, Gabriel and Kirsty Needham (2021): China Suspends Economic Dialogue with Australia as Relations Curdle', *Reuters,* 6 May, https://www.reuters.com/world/china-suspend-economic-dialogue-mechanism-with-australia-2021-05-06/

Cunningham, Kevin and Tomes Robert R. (2004), 'Space-Time Orientations and Contemporary Political-Military Thought', *Armed Forces & Society*, 31:1, pp. 119-140.

Davidson, Philip S. (2021), 'Statement of Admiral Philip S. Davidson, U.S. Navy Commander, U.S. Indo-Pacific Command before the Senate Armed Services Committee on U.S. Indo-Pacific Command Structure', U.S. Senate Armed Services Committee, 9 March, https://www.armed-services.senate.gov/imo/media/doc/Davidson_03-09-21.pdf

Davies, Andrew (2021), 'Australia's Shrinking Advantages: How Technology Might Defeat Geography', in Stephan Frühling and Andrew O'Neil, (eds.), *Alliances, Nuclear Weapons and Escalation: Managing Deterrence in the 21st Century* (Acton: ANU Press), pp. 151-160.

Davies, Andrew and Patrick Kennedy (2017), *From Little Things: Quantum Technologies and Their Application to Defence*, (Barton: Australian Strategic Policy Institute).

Davis, Jack (2003), 'Strategic Warning: If Surprise is Inevitable, What Role for Analysis?', Occasional Paper (Langley: Sherman Kent Centre for Intelligence Analysis, Central Intelligence Agency), pp. 1-16.

Davis, Malcolm (2020), 'Technological Change, Future Wars and the Arms Trade', in Andrew T. H. Tan (ed.), *Research Handbook on the Arms Trade* (Cheltenham: Edward Elgar), pp. 80-96.

Davis, Malcom (2019), 'Forward Defence in Depth for Australia', *Strategic Insights,* 139, Australian Strategic Policy Institute, pp. 1-16.

Davis, Malcom (2020), 'Technological Change, Future Wars and the Arms Trade', in Andrew T. H. Tan (ed.), *Research Handbook on the Arms Trade* (Cheltenham: Edward Elgar), pp. 80-96.

De Castro, Renato Cruz (2017), 'Sino-Japanese Rivalry in Maritime Southeast Asia', in Lam Peng Er (ed.), *China-Japan Relations in the 21st Century* (New York: Palgrave Macmillan), pp. 205-235.

Defense Intelligence Agency (2019), 'China Military Power: Modernizing a Force to Fight and Win', https://www.dia.mil/Portals/110/Images/News/Military_Powers_Publications/China_Military_Power_FINAL_5MB_20190103.pdf

Denisov, Igor, Oleg Paramonov, Ekaterina Arapova and Ivan Safranchuk (2021), 'Russia, China and the Concept of Indo-Pacific', *Journal of Eurasian Studies*, 12:1, pp. 72-85.

Department of Defence (1976), *Australian Defence* (Canberra: Australian Government Publishing Service), https://defence.gov.au/publications/wpaper1976.pdf

Department of Defence (1987), *The Defence of Australia* (Canberra: Australian Government Publishing Service), https://defence.gov.au/publications/wpaper1987.pdf

Department of Defence (2000), *Defence 2000: Our Future Defence Force* (Canberra: Commonwealth of Australia).

Department of Defence (2009), *Defending Australia in the Asia Pacific Century: Force 2030* (Canberra: Commonwealth of Australia).

Department of Defence (2016), *Defence Industry Policy Statement* (Canberra: Australian Government Publishing Service), https://apo.org.au/sites/default/files/resource-files/2016-02/apo-nid93621.pdf

Department of Defence (2020), *Defence Strategic Update* (Canberra: Australian Government Publishing Service), https://www.defence.gov.au/about/publications/2020-defence-strategic-update.

Department of Defence, Canberra (2016), *2016 Defence White Paper*, http://wwwwww.defence.gov.au/WhitePaper/Docs/2016-Defence-White-Paper.pdf

DFAT (2017), 'Foreign Policy White Paper: Chapter Two: A Contested World. Power Shifts in the Indo-Pacific', https://www.dfat.gov.au/sites/default/files/minisite/static/4ca0813c-585e-4fe1-86eb-de665e65001a/fpwhitepaper/foreign-policy-white-paper/chapter-two-contested-world/power-shifts-indo-pacific.html

Dibb, Paul (2006), 'Is strategic geography relevant to Australia's current defence policy?', *Australian Journal of International Affairs*, 60:2, pp. 247-264.

Dibb, Paul (2018), 'The Return of Geography', in Russell W. Glenn (ed.), *New Directions in Strategic Thinking 2.0: ANU Strategic & Defence Studies Centre's Golden Anniversary Conference Proceedings* (Acton, ANU Press), pp. 91-104.

Dibb, Paul (2019), *How the Geopolitical Partnership Between China and Russia Threatens the West*, Australian Strategic Policy Institute, November, https://s3-ap-southeast-2.amazonaws.com/ad-aspi/2019-11/SR%20148%20China%20and%20Russia%20threatens%20the%20West.pdf?VersionId=D40qjgxThyiCjbwzDPmQb8H49YF0hAmW

Dibb, Paul (2020), 'How Australia Can Defend Itself Against China's Military', *The National Interest*, 15 March, https://nationalinterest.org/blog/buzz/how-australia-can-defend-itself-against-chinas-military-132677.

Dibb, Paul and Richard Brabin-Smith (2021), *Deterrence Through Denial. A Strategy of an Era of Reduced Warning Time*, Australian Strategic Policy Institute, May, https://s3-ap-southeast-2.amazonaws.com/ad-aspi/2021-05/Reduced%20warning%20time.pdf?VersionId=I.oKvvZ9nT15GsOutK4qGWVLApGbC5s7

Dick, Howard (2011), 'Corruption in East Asia', in Mark Beeson and Richard Stubbs (eds.), *Routledge Handbook of Asian Regionalism.* London: Routledge.

Dominguez, Gabriel (2018), 'China to Receive Final Batch of Su-35 Fighter Aircraft in 2018', Jane's Defence Weekly, 30 May, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/FG_947679-JDW

Dominguez, Gabriel and Kim Dae Young (2021), 'HHI launches third KSS-III-class submarine for South Korean navy,' *Jane's*, 28 September, https://www.janes.com/defence-news/news-detail/hhi-launches-third-kss-iii-class-submarine-for-south-korean-navy

Erickson, Andrew S. (2019), 'China', in Thierry Balzacq, Peter Dombrowski and Simon Reich (eds.), *Comparative Grand Strategy: A Framework and Cases* (Oxford: Oxford University Press), pp. 73-98.

Erickson, Andrew S. and Austin M. Strange (2013), *No Substitute for Experience: Chinese Antipiracy Operations in the Gulf of Aden*, Newport: United States Naval War College China Maritime Studies Institute Red Books, 10, November, http://www.andrewerickson.com/wp-content/uploads/2017/09/China-Maritime-Study-10_Chinese-Antipiracy-Operations-in-the-Gulf-of-Aden_Erickson-Strange_201311.pdf

EveryCRSReport (2019), *China's Economic Rise: History, Trends, Challenges, and Implications for the United States*, https://www.everycrsreport.com/reports/RL33534.html

Fanell, James E. (2019), 'Asia Rising: China's Global Naval Strategy and Expanding Force Structure', *Naval War College Review*, 72:1, article 4.

Farley, Robert (2021), 'Sizing Up South Korea's Coming Aircraft Carriers', *The Diplomat*, 13 January, https://thediplomat.com/2021/01/sizing-up-south-koreas-coming-aircraft-carriers/

Feng, Liu (2016), 'China's Security Strategy Towards East Asia', *The Chinese Journal of International Politics*, 9:2, pp. 151-179.

Fikenscher, Sven-Eric, Lena Jaschob and Reinhard Wold (2015), 'Seeking Status Recognition Through Military Symbols: German and Indian Armament Policies Between Strategic Rationalizations and Prestige Motives', in C. Daase, C. Fehl, A. Geis and G.

Kolliarakis (eds), *Recognition in International Relations* (London: Palgrave Macmillan), pp. 86-103.

Fravel, M. Taylor (2020), 'China's "World-Class" Military Ambitions: Origins and Implications', *Washington Quarterly*, 42:4, pp. 85-99.

Funaiole, Matthew P., Joseph S. Bermudez, Jr. and Brian Hart (2021), 'Signs Point to China's Third Aircraft Carrier Launching Soon', Center for Strategic and International Studies, 9 November, https://www.csis.org/analysis/signs-point-chinas-third-aircraft-carrier-launching-soon

Garcia, Zenel (2019), *China's Military Modernization, Japan's Normalization and the South China Sea Territorial Disputes* (Cham: Palgrave Pivot).

Garver, John W. (2016), *China's Quest: The History of Foreign Relations of the People's Republic of China* (Oxford: Oxford University Press).

Gill, Bates and Taeho Kim (1995), *China's Arms Acquisitions from Abroad: A Quest for 'Superb and Secret Weapons'* (Stockholm: Stockholm International Peace Research Institute).

Gill, Bates, Adam Ni and Dennis Blasko (2020), 'The Ambitious Reform Plans of the People's Liberation Army: Progress, Prospects and Implications for Australia,' *Australian Journal of Defence and Strategic Studies*, vol. 2, no. 1, pp. 5-26.

Giovanzanti, Alessandra (2021a), 'Analysis: KF-21 Fighter To Strengthen Competitiveness of South Korea's Aerospace Industry', 9 April, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/FG_3939380-JDW

Giovanzanti, Alessandra (2021b), 'Taiwan Formally Commissions Its First F-16V Fighter Wing', *Jane's Defence Weekly*, 23 November, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/BSP_9251-JDW

Giovanzanti, Alessandra (2022), 'South Korea Grounds F-35 Fleet After Emergency Landing', *Jane's Defence Weekly*, 10 January, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/BSP_11587-JDW

Giovanzanti, Alessandra (2022), 'Supercharged in the Sky: Multirole Combat Aircraft Modernisation Programmes in Southeast Asia', *Janes' Defence Weekly*, 15 February, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/BSP_12815-JDW

Global Times (2021), 'Nuke Sub Deal Could Make Australia "Potential Nuclear War Target"', https://www.globaltimes.cn/page/202109/1234460.shtml

Global Times (2021), 'China-Russia Drill Signals New Era In Joint Exercises: Spokesperson', 27 August, https://www.globaltimes.cn/page/202108/1232623.shtml

Gokhale, Nitin (2021), 'Deployment of Frontline Combat Assets in Ladakh Created Credible Deterrence, Says Air Chief', *Bharat Shakti*, 3 February, https://bharatshakti.in/deployment-of-frontline-combat-assets-in-ladakh-created-credible-deterrence-says-air-chief/

Goldstein, Lyle and Vitaly Kozyrev (2020), 'China-Russia Military Cooperation and the Emergent U.S.-China Rivalry: Implications and Recommendations for U.S. National Security', *Journal of Peace and War Studies*, 2nd ed., pp. 22-48.

Gong, Ting and Scott, Ian (2016), 'Introduction', in Ting Gong and Ian Scott (eds.), Routledge Handbook of Corruption in Asia (London: Routledge), pp. 1-10.

Gray, Colin S. (1999), *Modern Strategy* (New York: Oxford University Press).

Grevatt, John and Andrew MacDonald (2022), 'China Increases 2022 Defence Budget by 7.1', *Janes*, 9 March, https://www.janes.com/defence-news/news-detail/china-increases-2022-defence-budget-by-71

Grevatt, Jon (2019), 'Lockheed Martin to Develop F-35 Maintenance Facility in Japan', *Jane's Defence Industry*, 29 August, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/FG_2387979-JDIN

Grevatt, Jon (2021), 'Japan Reveals Digital Development Plan for F-X Fighter', *Jane's Defence Industry*, 21 June, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/BSP_792-JDIN

Guardian (2018), 'Russia Begins its Largest Ever Military Exercise With 300,000 Soldiers', 12 September, https://www.theguardian.com/world/2018/sep/11/russia-largest-ever-military-exercise-300000-soldiers-china

Hartcher, Peter (2021), 'Huawei? No way! Why Australia Banned the World's Biggest Telecoms Firm', *The Sydney Morning Herald*, 21 May, https://www.smh.com.au/national/huawei-no-way-why-australia-banned-the-world-s-biggest-telecoms-firm-20210503-p57oc9.html

Haynes, Susan Turner (2020), 'The Power of Prestige: Explaining China's Nuclear Weapons Decisions', *Asian Security*, 16:1, pp. 35-52.

He, Baogang (2018), 'Chinese Expanded Perceptions of the Region and Its Changing Attitudes Toward the Indo-Pacific: a Hybrid Vision of the Institutionalization of the Indo-Pacific', *East Asia*, 35, pp. 117-132.

He, Kai (2019), 'Three Faces of the Indo-Pacific: Understanding the "Indo-Pacific" from an IR Theory Perspective', *East Asia*, 35, pp. 149-161.

He, Kai and Li Mingjiang (2020), 'Understanding the Dynamics of the Indo-Pacific: US-China Strategic Competition, Regional Actors, and Beyond', *International Affairs*, 96:1, pp. 1-7.

Horimoto, Takenori (2020), 'Indo-Pacific Order and Japan-India Relations in the Midst of COVID-19', *Journal of Asian Economic Integration*, 2:2, pp. 140-158.

Hu, Weixing (2019), 'XI Jinping's Major Country Diplomacy: The Role of Leadership in Foreign Policy Transformation', *Journal of Contemporary China*, 28:115, pp. 1-14.

IBEF (2021), *About Indian Economy Growth Rate and Statistics*, https://www.ibef.org/economy/indian-economy-overview

IISS (2021), *Military Balance 2021* (London: International Institute of Strategic Studies).

IISS (2022a), *Military Balance 2022* (London: International Institute of Strategic Studies).

IISS (2022b), 'The Effect of AUKUS on India's Foreign and Defence Policies', Strategic Comment, International Institute for Strategic Studies, March, 28:06, https://www.iiss.org/publications/strategic-comments/2022/the-effect-of-aukus-on-indias-foreign-and-defence-policies

Indian Ministry of Commerce and Industry (2022), 'Signing of the Economic Cooperation and Trade Agreement (ECTA) between India and Australia', 2 April, https://pib.gov.in/PressReleasePage.aspx?PRID=1812730

Indian Ministry of Defence (MoD) (2019), 'Headquarters Andaman Nicobar Command ANC to Enhance its Operational Capability with the Upcoming Commissioning of INS Kohassa', 18 January, https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1560445

Indian MoD (2022a), '3rd Positive Indigenisation List', 7 April, https://www.mod.gov.in/dod/sites/default/files/3pIl.pdf

Indian MoD (2022b), 'BrahMos Signs Contract with Philippines for Export of Shore Based Anti-Ship Missile System', 28 January, https://pib.gov.in/PressReleasePage.aspx?PRID=1793209

Indian MoD (2022c), 'Indian Navy's Multi-National Exercise MILAN-2022 to Commence 25 February 2022', 23 February, https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1800604

Indian Ministry of External Affairs (MEA) (2018), 'Indonesia Opening Sea Port for India', 2 August, https://www.mea.gov.in/rajya-sabha.htm?dtl/30214/question+no1774+indonesia+opening+sea+port+for+india

Indian MEA (2020a), 'Foreign Secretary's Speech at Policy Exchange', 3 November, https://www.mea.gov.in/Speeches-Statements.htm?dtl/33162/

Indian MEA (2020b), 'Documents Announced During the 3rd India - US 2+2 Ministerial Dialogue', 27 October, https://mea.gov.in/bilateral-documents.htm?dtl/33143/Documents+announced+during+the+3rd+India++US+2432+Ministerial+Dialogue

Indian MEA (2021), 'Roadmap 2030 for India-UK Future Relations Launched During India-UK Virtual Summit', 4 May, https://www.mea.gov.in/bilateral-documents.htm?dtl/33838/Roadmap+2030+for+IndiaUK+future+relations+launched+during+IndiaUK+Virtual+Summit+4+May+2021

International Monetary Fund (2022), 'World Economic Outlook', *International Monetary Fund*, April, https://www.imf.org/en/Publications/WEO/Issues/2022/04/19/world-economic-outlook-april-2022

Jablonsky, David (1994), 'US Military Doctrine and the Revolution in Military Affairs', *The US Army War College Quarterly: Parameters*, 24:1, pp. 18-36.

Jaishankar, Dhruva (2020), 'Australia-India Strategic Partnership: Accelerating Security Cooperation in the Indo-Pacific, *Lowy Institute Analyses*, 17 September, https://www.lowyinstitute.org/publications/australia-india-strategic-partnership-security-cooperation-indo-pacific

Jenning, Gareth (2022), 'Pakistan Receives First J-10 Fighters From China', *Jane's Defence Weekly*, 11 March, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/BSP_14812-JDW

Jennings, Peter (2019), 'Does Australia Need a "Plan B" for its Defence Policy?', United Service, 70:4, pp. 5-8.

Joe, Rick (2018), 'All You Need to Know About China's New Stealth Destroyer', *The Diplomat*, 8 June, https://thediplomat.com/2018/06/all-you-need-to-know-about-chinas-new-stealth-destroyer/

Joe, Rick (2020), 'How the Descendants of a 1950s Bomber Transformed China's Strike Reach', *The Diplomat*, 18 November, https://thediplomat.com/2020/11/how-the-descendants-of-a-1950s-bomber-transformed-chinas-strike-reach/

Joshi, Manoj (2021), 'Eastern Ladakh, the Longer Perspective', *Observer Research Foundation*, 14 June, https://www.orfonline.org/research/eastern-ladakh-the-longer-perspective/

Joshi, Yogesh (2019), 'China and India's Maritime Rivalry has a New Flashpoint: the Andaman Sea', *South China Morning Post*, 14 December, https://www.scmp.com/week-asia/opinion/article/3042032/china-and-indias-maritime-rivalry-has-new-flashpoint-andaman-sea

Kaczmarski, Marcin (2016), 'The Asymmetric Partnership? Russia's Turn to China', *International Politics*, 53:3, pp. 415-434.

Kadidal, Akhil (2022), 'India Initiates Fifth-Generation AMCA Fighter Project', *Jane's Defence Weekly*, 17 March, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/BSP_15630-JDW

Kaplan, Robert (2014), *Asia's Cauldron: The South China Sea and the End of a Stable Pacific* (New York: Random House).

Kapur, Lalit (2021), 'Whither India's Submarines', *Delhi Policy Group*, 27 May, 6:16, pp.6-11, https://www.delhipolicygroup.org/publication/policy-briefs/whither-indias-submarines.html

Karim, Mohd Aminul (2014), 'China's Power Politics and Modernization: Implications for Taiwan and the South China Sea', *Pacific Focus*, 29:2, pp. 188-201.

Kim, Min-hyung (2016), 'South Korea's China Policy, Evolving Sino-ROK Relations, and Their Implications for East Asian Security', *Pacific Focus,* 31:1, pp. 56-78.

Kinsella, David and Chima, Jugdep S. (2001), 'Symbols of statehood: military industrialization and public discourse in India', *Review of International studies,* 27, pp. 353-373.

Kirchner, Stephen (2021), 'A Geoeconomic Alliance: The Potential and Limits Of Economic Statecraft', United States Studies Centre, 30 September, https://www.ussc.edu.au/analysis/a-geoeconomic-alliance-the-potential-and-limits-of-economic-statecraft?utm_medium=email&utm_campaign=NEW%20RESEARCH%20%20Chinas%20economic%20coercion%20backfiring%20bid%20for%20influence&utm_content=NEW%20RESEARCH%20%20Chinas%20economic%20coercion%20backfiring%20bid%20for%20influence+CID_0a4c2aaa5d1e58435bfa2f9773d4b210&utm_source=USSC%20Campaign%20Monitor&utm_term=A%20geoeconomic%20alliance%20The%20potential%20and%20limits%20of%20economic%20statecraft

Kristensen, Hans M. and Matt Korda (2020), 'Chinese Nuclear Forces, 2020,' *Bulletin of the Atomic Scientists,* 76:6, pp. 443-457.

Kristensen, Hans M. and Matt Korda (2021), 'Nuclear Notebook: Chinese Nuclear Forces, 2021', *Bulletin of the Atomic Scientists,* 15 November, https://thebulletin.org/premium/2021-11/nuclear-notebook-chinese-nuclear-forces-2021/

Kuczyński, Grzegorz (2020), 'Russia-China: a Limited Liability Military Alliance', *The Warsaw Institute Review,* 18 May, https://warsawinstitute.review/issue-2020/russia-china-a-limited-liability-military-alliance/

Kumar, Shiv, Sudheer Singh Verma and Shahbaz Hussain Shah (2020), 'Indo-US Convergence of Agenda in the New Indo-Pacific Regional Security Architecture', *South Asia Research,* 40:2, pp. 215-230.

Kushin, Vasily and Alexander Lukin (2018), 'Russian-Chinese Security Cooperation in Asia', *Asian Politics & Policy,* 10:4, pp. 614-632.

Kwon, Jaebeom (2020), 'When the Kangaroo Encounters the Flying Dragon: The Growth of Balancing Elements in Australia's China Policy', *Pacific Focus*, 35:3, pp.491-529.

Lawrence, Patrick, 'Goodbye, America: The Remaking of Asia', *Australian Foreign Affairs*, No. 10, 2020, pp. 69-89.

Layton Peter (2019), 'Singapore's Careful F-35 Fighter Aircraft Purchase', *The Intepreter*, 15 March, https://www.lowyinstitute.org/the-interpreter/singapore-s-careful-f-35-fighter-aircraft-purchase

Lee, Hsien Loong (2016), National Day Rally 2016 English Speech, https://www.pmo.gov.sg/Newsroom/national-day-rally-2016

Lee, Sheryn (2020) *Explaining Contemporary Asian Military Modernization: The Myth of Asia's Arms Race* (London: Routledge).

Leong, Adam Kok Wey (2016), 'Mates All The Way! From Konfrontasi To Confronting China: Australia–Malaysia Geostrategic Cooperation', *Comparative Strategy*, 35:2, pp. 131-138.

Leonhard, Robert (1991), *The Art of Maneuver: Maneuver Warfare Theory and Airland Battle* (New York: Ballantine Books).

Levesques, Antoine (2020), 'A New Normal for India–China Tensions?', *IISS*, 18 September, https://www.iiss.org/blogs/analysis/2020/09/sasia-india-china-tensions

Levesques, Antoine (2022), 'India's *Pralay* Ballistic Missile: A Step Towards a Rocket Force?', *IISS*, 6 April, https://www.iiss.org/blogs/analysis/2022/04/indias-pralay-ballistic-missile-a-step-towards-a-rocket-force

Liu, Hongsong and Ahmed Bux Jamali (2021), 'India's Indo-Pacific Strategy: A Pragmatic Balancing Between the United States and China', *Pacific Focus*, 36:1, pp. 5-39.

Lockyer, Adam (2015), 'An Australian Defence Policy for a Multipolar Asia', *Defence Studies*, 15:3, pp. 273-289.

Lockyer, Adam (2017), *Australia's Defence Strategy: Evaluating Alternatives for a Contested Asia*, (Melbourne: Melbourne University Press).

Markowski, Stefan, Rob Bourke and Robert Wylie (2019), 'Defence Industry in Australia' in Keith Hartley and Jean Belin (eds.), *The Economics of the Global Defence Industry*, (Abingdon: Routledge), pp. 462-481.

Markowski, Stefan, Satish Chand and Robert Wylie (2017), 'Economic Growth and Demand for Military Expenditure in the Indo-Pacific Asia Region', *Defence and Peace Economics*, 28:49, pp. 473-490.

McGuirk, Rod (2020), 'Australia Plans $190 Billion Defense Boost Over Decade,' *The Diplomat*, 2 July, https://thediplomat.com/2020/07/australia-plans-190-billion-defense-boost-over-decade/

Mearsheimer, John J. (1983), *Conventional Deterrence* (Ithaca, NY: Cornell University Press).

Medcalf, Rory (2020), *Contest for the Indo-Pacific* (Melbourne: La Trobe University Press).

Medcalf, Rory and James Brown (2015), *Defense Challenges 2035*, Lowy Institute.

Medcalf, Rory (2020), 'Balancing Act: Making Sense of the Quad', *Australian Foreign Affairs*, 10, pp. 30-48.

Montgomery, Evan Braden (2020), 'Signals of Strength: Capability Demonstrations and Perceptions of Military', *Journal of Strategic Studies* 43:2, pp. 309-330.

Moon, Chung-in, Yeon Jeong So, and Samuel Gardner (2021), 'Cold War Discourse and Geopolitical Flashpoints in Post-Covid-19 Northeast Asia', *Journal for Peace and Nuclear Disarmament*, 4:1, pp. 284-307.

Morris, David (2019), 'The Belt and Road Initiative and the Geopolitics of the South Pacific', *Research on Pacific Island Countries*, pp. 1-10.

Mukerji, Asoke (2021), 'Envisioning a Secure Indian Ocean', *The Indian Express*, 9 August, https://indianexpress.com/article/opinion/columns/un-security-council-maritime-security-indian-ocean-7444800/

News.com.au (2021), 'New Military Weapons Deal Confirmed Between US and Australia', 12 August, https://www.news.com.au/technology/innovation/military/new-military-weapons-deal-confirmed-between-us-and-australia/news-story/f326c67f6c2731d6d148e5bc55eff791

Northeast Asia Security Institute (2022), 'Public Opinion Data Finds Robust Support For Domestic Nuclear Weapons Among South Koreans', 21 February, https://neasecurity.com/2022/03/05/public-opinion-data-finds-robust-support-for-domestic-nuclear-weapons-among-south-koreans/

Observer Research Foundation (2022), 'The Rejuvenation of the Quad Has Been Primarily Driven by India, Washington Has Played Catch-up', 27 April, https://www.youtube.com/watch?v=FW_QKgL2QRU&ab_channel=ORF

O'Hanlon, Michael (2018), 'Forecasting Change in Military Technology, 2020-2040', Washington, D.C.: Brookings Institution, September, https://www.brookings.edu/research/forecasting-change-in-military-technology-2020-2040/

OECD (n.d.), *Ocean Shipping and Shipbuilding*, https://www.oecd.org/ocean/topics/ocean-shipping/#:~:text=The%20main%20transport%20mode%20for,transport%20arteries%20for%20global%20trade

Office of the Director of National Intelligence (2022), *2022 Annual Threat Assessment of the U.S. Intelligence Community*, (Washington, D.C.: United States Director of National Intelligence).

Office of the Secretary of Defense (2020), *Military and Security Developments Involving the People's Republic of China 2019* (Washington, D.C.: United States Department of Defense).

Office of the Secretary of Defense (2021), *Military and Security Developments Involving the People's Republic of China 2020* (Washington, D.C.: United States Department of Defense).

O'Rourke, Ronald (2018), 'China Naval Modernization: Implications for U.S. Navy Capabilities –Background and Issues for Congress', Congressional Research Service, https://crsreports.congress.gov/product/details?prodcode=RL33153

Pan, Chengxin (2014), 'The "Indo-Pacific" and Geopolitical Anxieties About China's Rise in the Asian Regional Order', *Australian Journal of International Affairs,* 68:1, pp. 453-469.

Pandit, Rajat (2020), 'Navy To Rejig Acquisition Plans with Eye on Technological Advancements & Fiscal Prudence', *The Times of India,* 16 January, https://timesofindia.indiatimes.com/india/fund-hit-navy-set-to-scrap-20000-crore-tender/articleshow/73285506.cms

Pape, Alex (2017), 'India Revises Submarine Fleet Requirements', Jane's Navy International, 1 August, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/FG_614113-JNI

Park, Hahn-kyu (2017), 'The China-Japan-South Korea Trilateral Summit: *Realpolitik* or Liberal Peace?' in Lam Peng Er (ed.), *China-Japan Relations in the 21st Century* (New York: Palgrave Macmillan), pp. 291-317.

Pei, Minxin (2018), 'China in Xi's "New Era": A Play for Global Leadership', *Journal of Democracy,* 29:2, pp. 37-51.

Peri, Dinakar (2021a), 'Navy on Course for 170 Ship Force: Navy Vice Chief', *The Hindu,* 16 November, https://www.thehindu.com/news/national/navy-on-course-for-170-ship-force-navy-vice-chief/article37525244.ece

Peri, Dinakar (2021b), 'Three Aircraft Carriers an 'Unavoidable Requirement, says House Panel', *The Hindu*, 18 December, https://www.thehindu.com/news/national/three-aircraft-carriers-an-unavoidable-requirement-says-house-panel/article37986147.ece

Peri, Dinakar (2022a), 'First Batch of 3 MH-60R Multi-Role Helicopters to Arrive in Mid-July', *The Hindu*, 19 February, https://www.thehindu.com/news/national/first-batch-of-3-mh-60r-multi-role-helicopters-to-arrive-in-mid-july/article65065395.ece

Peri, Dinakar (2022b) 'P-8A Aircraft of @Ausairforce Arrived at Goa on a Reciprocal Visit to Undertake Coordinated Operations Involving Anti-Submarine Warfare & Surface Surveillance with P8I of @Indiannavy from Jun 7-9. IN P8I had Operated From Darwin, Australia in April', 7 June, https://twitter.com/dperi84/status/1534176156768841730?s=11&t=iQf8mC6_O0LCtGYneJqY4w

Peri, Dinakar (2022c), 'India, France Carry Out Second Joint Patrol in Southern Indian Ocean', *The Hindu*, 16 May, https://www.thehindu.com/news/national/india-france-carry-out-second-joint-patrol-in-southern-indian-ocean/article65419890.ece

Perlo-Freeman, Sam (2016), 'Transparency and Accountability in Military Spending', 3 August, https://www.sipri.org/commentary/topical-backgrounder/2016/transparency-and-accountability-military-spending

Perrett, Bradley (2021), 'South Korea Aims to Build Aircraft Carrier the Country Doesn't Need', The Strategist, 2 March, https://www.aspistrategist.org.au/south-korea-pushes-ahead-with-aircraft-carrier-only-its-admirals-want/

Pioneer (2019), 'A Strong SAF for the Next Generation', 1 April, Ministry of Defence, Singapore, https://www.mindef.gov.sg/web/portal/pioneer/article/cover-article-detail/ops-and-training/2019-Q2/apr19_cs

Posen, Barry (2003), 'Command of the Commons: The Military Foundation of U.S. Hegemon', *International Security*, 28:1, pp. 5-46.

President of Russia (2022), 'Joint Statement of the Russian Federation and the People's Republic of China on the International Relations Entering a New Era and the Global Sustainable Development', 4 February, http://en.kremlin.ru/supplement/5770

Rahman, Maseeh (2013), '18 Trapped After Indian Submarine Explodes and Sinks in Mumbai', *The Guardian*, 14 August, https://www.theguardian.com/world/2013/aug/14/18-trapped-indian-submarine-explodes-sinks-mumbai

Raghuvanshi, Vivek (2022), 'India Halts Ka-31 Helicopter Deal with Russia', *Defense News*, 16 May, https://www.defensenews.com/global/asia-pacific/2022/05/16/india-halts-ka-31-helicopter-deal-with-russia/

Rajagopalan, Rajeswari Pillai (2021), 'The Quad Conducts Malabar Naval Exercise', *The Diplomat*, https://thediplomat.com/2021/08/the-quad-conducts-malabar-naval-exercise/

Reif, Kingston and Shannon Bugos (2020), 'U.S. Aims to Add INF-Range Missiles', *Arms Control Today*, October, https://www.armscontrol.org/act/2020-10/news/us-aims-add-inf-range-missiles

Reuters (2013), 'Asia's Defense Spending Overtakes Europe's: IISS', 14 March, https://www.reuters.com/article/us-security-military-iiss-idUSBRE92D0EL20130314

Reuters (2021a), 'U.S., Indonesia Commit to South China Sea Defense in "Strategic Dialogue"', 4 August, https://www.reuters.com/world/asia-pacific/blinken-launching-strategic-dialogue-with-indonesia-2021-08-03/

Reuters (2021b), 'Analysis: With an Eye on China, Japan's Ruling Party Makes Unprecedented Defence Spending Pledge', 31 October, https://www.reuters.com/world/asia-pacific/with-an-eye-china-japans-ruling-party-makes-unprecedented-defence-spending-2021-10-13/

Robertson, Peter, Jingdong Yuan and Harsha Konara Mudiyanselage (2020), 'China, India and the Contest for the Indo-Pacific', *Indian Growth and Development Review*, 13:2, pp. 289-317.

Roblin, Sebastien (2021), 'Inside the Combat History of the Pakistani Air Force's F-16 Fleet', *The National Interest*, 30 September, https://nationalinterest.org/blog/reboot/inside-combat-history-pakistani-air-forces-f-16-fleet-194591

Rose A. J. (1959), 'Strategic Geography and the Northern Approaches', *Australian Journal of International Affairs*, 13:4, pp. 304-314.

Royal College of Defence Studies (2010), *Thinking Strategically* (British Crown Copyright, 3rd Edition).

Roy-Chaudhury, Rahul (2022), 'Rhetoric is Far Ahead of Reality When it Comes to UK-India Ties', *Financial Times*, 20 April, https://www.ft.com/content/45ad21f5-6d0b-477f-811d-2cf5f48df8ef

Roy-Chaudhury, Rahul and Viraj Solanki (2020), 'India: Defence Spending and Procurement', in Andrew T. H. Tan (ed.), *Research Handbook on the Arms Trade* (Cheltenham: Edward Elgar Publishing), pp. 166-182.

Roy-Chaudhury, Rahul, and Viraj Solanki (2021a), 'The Biden Administration's South Asia Policy: Change or continuity?', *IISS Strategic Survey 2021: The Annual Assessment of Geopolitics* (Oxon: Routledge), pp. 174-184.

Roy-Chaudhury, Rahul, and Viraj Solanki (2021b), 'China–South Asia Relations: Indian Perspectives' in Nian Peng et al. (ed.) *Crossing the Himalayas: Buddhist Ties, Regional Integration and Great-Power Rivalry (*Singapore: Springer), pp. 37-57.

Sakai, Hidekazu (2019). 'Return to Geopolitics: The Changes in Japanese Strategic Narratives', *Asian Perspective*, 43:2, pp. 297-322.

Salisbury, Daniel (2022), 'PRC Navy Likely Testing Carrier-Based Stealth Fighters', China Aerospace Studies Institute – Air University, 14 February, https://www.airuniversity.af.edu/CASI/Display/Article/2916499/prc-navy-likely-testing-carrier-based-stealth-fighters/

Sanger, David E. and William J. Broad (2021), 'China's Weapons Test Close to a "Sputnik Moment", U.S. General Says', *New York Times,* 27 October, https://www.nytimes.com/2021/10/27/us/politics/china-hypersonic-missile.html

Sarkar, Mrittika Guha (2020), 'China and QUAD 2.0: Between Response and Regional Construct', *Maritime Affairs: Journal of the National Maritime Foundation of India,* 16:1, pp. 110-130.

Saunders, Phillip C. and Erik Quam (2007), 'Future Force Structure of the Chinese Air Force' in Kamphausen, Roy and Andrew Scobell (eds.), *Right Sizing the People's Liberation Army: Exploring the Contours of China's Military* (Carlisle: US Army War College/Strategic Studies Institute), pp. 377-436.

Saunders, Phillip C. and Kevin McGuiness (2020), *The Changing Balance of Military Power in the Indo-Pacific Region*, 2020 Conference on Taiwan in the Indo-Pacific Region, Hoover Institution, Stanford University, https://www.hoover.org/sites/default/files/research/docs/saunders-mcguiness_kt_final_copy.pdf

Schleich, Anne-Marie (2018), 'Geopolitical Trends in the South Pacific: Is the US or China Winning?', ISPSW Strategy Series: Focus on Defense and International Security, 554, pp. 1-10.

Schreer, Benjamin (2013), 'Moving Beyond Ambitions? Indonesia's Military Modernisation', Australian Strategic Policy Institute, https://www.files.ethz.ch/isn/173326/Moving%20beyond%20ambitions_%20Indonesia%27s%20military%20modernisation.pdf

Schreer, Benjamin and Andrew T. H. Tan (2020), 'Reconsidering Taiwan's Future in a More Contested East Asia', in Benjamin Schreer and Andrew T. H. Tan (ed.), *The Taiwan Issue: Problems and Prospects* (London: Routledge), pp. 1-11.

Schweller, Randall L. (2017), ‘Domestic Politics and Nationalism in East Asian Security’, in Robert S. Ross and Øystein Tunsjø (eds.), *Strategic Adjustment and the Rise of China. Power and Politics in East Asia* (New York: Cornell University Press).

Scobell, Andrew (2021), ‘Constructing a U.S.-China Rivalry in the Indo-Pacific and Beyond’, *Journal of Contemporary China*, 30:127, pp. 69-84.

Sen, Shawan (2020), ‘'No Blinking Or Brinkmanship': India-China Standoff Under Control’, *Republic World*, 14 June, https://www.republicworld.com/india-news/general-news/number-stopliesagainstarmy-india-china-standoff-under-control.html

Shambaugh, David (2018), ‘U.S.-China Rivalry in Southeast Asia: Power Shift or Competitive Coexistence?’, *International Security*, 42:2, pp. 85-127.

Shambaugh, David (2021), *Where Great Powers Meet: America and China in Southeast Asia* (Oxford: Oxford Scholarship Online).

Shugart, Thomas (2021), ‘Australia and the Growing Reach of China’s Military’, *Lowy Institute Analysis*, https://www.lowyinstitute.org/sites/default/files/SHUGART%20China%27s%20Growing%20Military%20COMPLETE%20PDF.docx.pdf.

Singh, Anil Jai (2021), ‘Commissioning of Kalveri Class submarine INS Vela recreates nostalgia’, *Aviation and Defence Universe*, 27 November, https://www.aviation-defence-universe.com/of-submarine-matters-and-the-commissioning-of-ins-vela/

SIPRI (2020), *Top 10 Importers of Conventional Arms (2011-2020)*, https://armstrade.sipri.org/armstrade/page/toplist.php

SIPRI (2021), *Military Expenditure by Region, in Constant (2019) US$b., 1988-2020*, https://sipri.org/sites/default/files/Data%20for%20world%20regions%20from%201988%E2%80%932020%20%28pdf%29.pdf

SIPRI (n.d.), Military Expenditure Database, https://www.sipri.org/databases/milex

Smith, Fred, Yves-Heng Lim and Adam Lockyer (2021), 'The Future of the United States-Australia Alliance: Evolving Security Strategy in the Indo-Pacific', in Scott D. McDonald and Andrew T. H. Tan (eds.), *The US-Australian Alliance and its Implications for Australian Defence Strategy and Procurement* (London: Routledge), pp. 163-180.

Smith, R. Jeffrey (2019), 'Hypersonic Missiles Are Unstoppable. And They're Starting a New Global Arms Race', *The New York Times,* 19 June, https://www.nytimes.com/2019/06/19/magazine/hypersonic-missiles.html.

Spykman, Nicholas J., 'Geography and Foreign Policy I,' *American Political Science Review*, 32:1, pp. 28-50.

Solanki, Viraj and Douglas Barrie (2022), 'Purchasing From a pariah: India's Arms-Acquisition Dilemma', *IISS*, 22 March, https://www.iiss.org/blogs/analysis/2022/03/purchasing-from-a-pariah-indias-arms-acquisition-dilemma

State Council (2015), *China's Military Strategy*, (Beijing: Information Office of the State Council), http://english.www.gov.cn/archive/white_paper/2015/05/27/content_281475115610833.htm

Stokes, Mark, Yang Kuang-shun and Eric Lee (2020), 'Preparing for the Nightmare: Readiness and Ad hoc Coalition Operations in the Taiwan Strait', Project 2049 Institute, https://project2049.net/2020/09/01/preparing-for-the-nightmare-readiness-and-ad-hoc-coalition-operations-in-the-taiwan-strait/

Stone, Alex and Peter Wood (2020), *China's Military-Civil Fusion Strategy*, China Aerospace Studies Institute, 15 June, https://www.airuniversity.af.edu/CASI/Display/Article/2217101/chinas-military-civil-fusion-strategy/

Straits Times (2019), 'Singapore and United States Sign Pact to Set Up RSAF Fighter Training Detachment in Guam', 28 December, https://www.straitstimes.com/singapore/singapore-and-united-states-sign-pact-to-set-up-rsaf-fighter-training-detachment-in-guam

Straits Times (2020), Next-Gen Aster 30 Missile System Now Deployed, Boosting Singapore's Air Defence Network', 17 December, https://www.straitstimes.com/singapore/next-gen-aster-30-missile-system-plugged-into-rsaf-air-defence-network-can-counter-more

Strangio, Sebastian (2021), 'Indonesia Clinches Deal for 8 Italian-Made Frigates', 16 June, https://thediplomat.com/2021/06/indonesia-clinches-deal-for-8-italian-made-frigates/

Suchman. Mark C. and Eyre, Dana P. (1992), 'Military Procurement as Rational Myth: Notes on the Social Construction of Weapons Proliferation', *Sociological Forum* 7:1, pp. 137-161.

Sukma, Isti Marta and Anak Agung Banyu Perwita (2018), 'The Implementation of Australia's Maritime Defense Strategy in Response to China's Military Modernization in the Indo-Pacific Region (2013—2016),' *Journal Asia Pacific Studies,* 2:1, pp. 86-106.

Sun, Xuefeng (2013), 'Rethinking East Asian Regional Order and China's Rise', *Japanese Journal of Political Science,* 14:1, pp. 9-30.

Tagarev, Todor (2010), 'Enabling Factors and Effects of Corruption in the Defense Sector', *Connections,* 9:3, pp. 75-86.

Takahashi Kosuke (2020), 'MHI Launches First of New Class of Submarines For JMSDF Equipped With Lithium-Ion Batteries', *Jane's Defence Weekly,* 14 October, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/FG_3763259-JDW

Tan, Andrew T. H. (2004), *Security Perspectives of the Malay Archipelago* (Cheltenham: Edward Elgar).

Tan, Andrew T. H. (2020), 'Key Drivers of the Arms Trade', in Andrew T. H. Tan (ed.), *Research Handbook on the Arms Trade* (Cheltenham: Edward Elgar), pp. 17-38.

Tate, Andrew (2017), 'Assessing the Capabilities of China's Type 055 Destroyer', *Jane's Defence Weekly*, 7 July, https://customer-janes-com.simsrad.net.ocs.mq.edu.au/Janes/Display/jdw66480-jdw-2017

Tellis, Ashley J. (2020), 'India: Capable but Constrained' in Gary J. Schmitt (ed.), *A Hard Look at Hard Power: Assessing the Defense Capabilities of Key US Allies and Security Partners* (Carlisle: US Army War College/Strategic Studies Institute), pp. 119-154.

Thayer, Carlyle A. (2018), 'Force Modernization: Vietnam', *Southeast Asian Affairs*, pp. 429-444.

The Times of India (2021), 'China Biggest Security Threat, Says General Bipin Rawat', *The Times of India*, 13 November, https://timesofindia.indiatimes.com/india/china-biggest-security-threat-says-general-bipin-rawat/articleshow/87675595.cms

Tian, Nan and Fei Su (2020), *Estimating the Arms Sales of Chinese Companies*, SIPRI Insights on Peace and Security, January, https://www.sipri.org/sites/default/files/2020-01/sipriinsight2002_1.pdf

Transparency International (2021), *What is Defence and Security and Corruption?* https://www.transparency.org/en/our-priorities/defence-and-security#

UN (United Nations, 1982), United Nations Convention on the Law of the Sea, https://www.un.org/depts/los/convention_agreements/convention_overview_convention.htm#:~:text=by%20%22*%22.-,The%20United%20Nations%20Convention%20on%20the%20Law%20of%20the%20Sea,the%20oceans%20and%20their%20resources.&text=The%20Convention%20was%20opened%20for,1982%20in%20Montego%20Bay%2C%20Jamaica

Upadhyaya, Shishir (2017), 'Expansion of Chinese Maritime Power in the Indian Ocean: Implications for India', *Defence Studies*, 17:1, pp. 63-83.

Von Clausewitz (1873), *On War*, (London: N. Trübner).

Walt, Stephen M. (1985), 'Alliance Formation and the Balance of World Power', *International Security*, 9:4, pp. 3-43.

Walton, David (2017), 'China and Japan in Australian Foreign Policy', in Lam Peng Er (ed.), *China-Japan Relations in the 21st Century* (New York: Palgrave Macmillan), pp. 255-275.

Watts, John, Sofia Ledberg and Sofia Engelbrekt (2016), 'Brothers in Arms, Yet Again? Twenty-First Century Sino-Russian Strategic Collaboration in the Realm of Defence and Security', *Defence Studies*, 16:4, pp. 427-449.

Weisko, Paul (2019), 'Wading Tiger, Swimming Dragon: A Study on Comparative Indo-Sino Naval Development', *Comparative Strategy*, 38:3, pp. 198-205.

Weitz, Richard (2021), 'Assessing Chinese-Russian Military Exercises: Past Progress and Future Trends', Washington, D.C.: Center for Strategic and International Studies, July, https://www.csis.org/analysis/assessing-chinese-russian-military-exercises-past-progress-and-future-trends

White House (2011), 'Remarks by President Obama to the Australian Parliament', 17 November, https://obamawhitehouse.archives.gov/the-press-office/2011/11/17/remarks-president-obama-australian-parliament

White House (2022a), *Indo-Pacific Strategy of the United States*, (Washington, D.C.: White House).

White House (2022b), 'Readout of President Biden's Meeting with Prime Minister Modi of India', 24 May, https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/24/readout-of-president-bidens-meeting-with-prime-minister-modi-of-india/

White, Hugh (2018), 'The Jakarta Switch: Why Australia Needs to Pin its Hopes (Not Fears) on a Great and Powerful Indonesia', *Australian Foreign Affairs*, 3, pp. 7-30.

White, Hugh (2019a), 'In Denial: Defending Australia as China Looks South', *Australian Foreign Affairs*, 6, pp. 5-27.

White, Hugh (2019b), *How to Defend Australia* (Carlton: LaTrobe University Press).

Williamson, Murray, MacGregor Knox and Alvin Bern (1994), *The Making of Strategy: Rulers, States, and War* (Cambridge: Cambridge University Press).

WION (2021), 'Exclusive: for India, China a Bigger Security Threat Than Pakistan, Chief of Defence Staff General Bipin Rawat tells WION', *WION*, 11 June, https://www.wionews.com/india-news/exclusive-for-india-china-a-bigger-security-threat-than-pakistan-chief-of-defence-staff-general-bipinrawat-tells-wion-390906

Wolfgang, Ben (2020), 'Russia, China, Iran to hold massive joint military exercise', *Washington Times*, 10 September, https://www.washingtontimes.com/news/2020/sep/10/russia-china-iran-hold-massive-joint-military-exer/

World Bank (n.d.), *GDP Per Capita, PPP (Current International $)*, https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?most_recent_value_desc=false

World Economic Forum (2019), 'In 2020 Asia Will Have the World's Largest GDP: Here's What That Means', 20 December, https://www.weforum.org/agenda/2019/12/asia-economic-growth/

Wu, Shang-su (2021), 'Military Modernization in Southeast Asia in the Indo-Pacific Strategic Context', *Defence & Security*, 37:2, pp. 212-231.

Xi Jingping (2017), *Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects and Strive for the Great Success of Socialism with Chinese Characteristics for a New Era*, delivered at the 19th National Congress of the Communist Party of China, 18 October, https://www.chinadaily.com.cn/china/19thcpcnationalcongress/2017-11/04/content_34115212.htm

Xiao Tianliang, Zhanlue Xue (2015), *Science of Military Strategy* (Beijing: National Defense University).

Yang, Fanfan (2019), '东风-17常规导弹方队 东风劲旅剑开新刃' [DF-17 Conventional Missile Formation: Dongfeng Sword's New Sharp Edge], 中国军网综合 [*China Military Online*], 10 October, http://www.81.cn/jmywyl/2019-10/02/content_9642720.htm

Yoshihara, Toshi (2020), 'Japan: Adapting to Harsh Realities' in Gary J. Schmitt (ed.), *A Hard Look at Hard Power: Assessing the Defense Capabilities of Key US Allies and Security Partners* (Carlisle: US Army War College/Strategic Studies Institute), pp. 155-186.

Zhang, Chunman (2020), 'The Power of a Niche Strategy and China's Preemptive and Adaptive Response to the US Indo-Pacific Strategy', *The China Review*, 20:3, pp. 239-259.

Zhou, Laura (2021), 'US-led Quad Plans Joint Naval Exercises as China Tensions Boil Over', *South China Morning Post*, 23 August, https://www.scmp.com/news/china/diplomacy/article/3146085/us-led-quad-plans-joint-naval-exercises-china-tensions-boil

Contributors (in alphabetical order, family names)

Bates Gill (PhD) is Professor of Asia-Pacific Security Studies and Head of the Department of Security Studies and Criminology at Macquarie University. Previous positions include: CEO, United States Studies Centre, University of Sydney (2012-2015); Director, Stockholm International Peace Research Institute (2007-2012) and Freeman Chair in China Studies, Center for Strategic and International Studies (2002-2007). He is author, co-author, or co-editor of ten books including *Daring to Struggle: China's Global Ambitions Under Xi Jinping* (Oxford University Press, 2022) and *China Matters: Getting it Right for Australia* (Latrobe University Press/Black Inc., 2017).

Antoine Levesques is a Research Fellow for South Asia at the International Institute for Strategic Studies. His research focuses on South Asian countries' policies and strategies towards China, as well as regional nuclear doctrine, deterrence and strategic stability issues. He has written since 2014 on India-China border tensions, was the lead co-author of the IISS report on *Nuclear Deterrence and Stability in South Asia: Perceptions and Realities* (2021), and a member of a senior study group whose assessments informed the US Institute for Peace report on *China, India and Pakistan: Standing at the Brink of Crisis* (2022).

Yves-Heng Lim is a Senior Lecturer in Security Studies at the Department of Security Studies and Criminology, Macquarie University. His research focuses on the balance of power in the Indo-Pacific, the evolution of China's strategy, with a particular interest for China's naval strategy, and international relations theory (realism and power transition theory). Yves-Heng is author of *China's Naval Power: an Offensive Realist Approach* (Farnham: Ashgate Publishing, 2014) and of more than twenty peer-reviewed book chapters and articles that appeared in *The Journal of Strategic Studies*, *The Journal of Contemporary China*, *Contemporary Strategy*, and *Asian Security*.

Adam Lockyer (PhD) is Associate Professor in Strategic Studies at Macquarie. He held the 2015 Fulbright Scholarship in US-Australian Alliance Studies at Georgetown University, was Research Fellow in Defence Studies at the University of New South Wales, the Lowy Institute's 2008 Thawley Scholarship in International Security winner, and served 4 years in the Australian Army. He has published widely on issues relating to Australian defence strategy, US defence and foreign policy, post-conflict reconstruction, governance and

insurgency, with his most recent book being *Australian Defence Strategy: Evaluating Alternatives for a Contested Asia* (Melbourne University Press, 2017).

Rahul Roy-Chaudhury is the Senior Fellow for South Asia at the International Institute for Strategic Studies (IISS) in London, where he heads its South Asia programme. His research focuses on India's foreign, defence and security policies; the Indian navy and the Indian Ocean; regional security issues; and UK-India relations, and his publications include *Sea Power and Indian Security* (1995) and *India's Maritime Security* (2000). He is a Research Associate at the Contemporary South Asian Studies Programme at Oxford University and previously served in the National Security Council Secretariat in the Prime Minister's Office in India.

Fred Smith is Manager, Professional Development - Strategic Intelligence & Capability, NSW Police. He was Lecturer at the Department of Security Studies and Criminology, Macquarie University (2013 to 2021), and previously served in the United States Navy for 30-years, retiring as a Captain in 2012. He served multiple tours of duty with North Atlantic Treaty Organization (NATO), Australia (seconded to the Royal Australian Navy), Japan, and the UK. His educational profile includes: MA (National Security & Strategic Studies), Naval War College, Newport, RI; Juris Doctor (Law), Loyola School of Law, New Orleans, LA; and BA (Political Science), Auburn University, Auburn, AL.

Viraj Solanki is the Research Associate for South Asia at the International Institute for Strategic Studies (IISS), based in London, where he joined in 2016. His research focuses on India's policy towards the Indo-Pacific region, primarily on the Indian Ocean littoral and island states, and their foreign policies in relation to India, China and the US; the Quad countries' role in the Indian Ocean region; India's relations with Southeast Asia; and India's relations with the Gulf.

Andrew T. H. Tan (PhD) is the lead in this project and is Professor in the Department of Security Studies and Criminology, Macquarie University. Born in Singapore, he has held various scholarships and was educated in Singapore, Cambridge and Sydney, served in the Singapore Armed Forces and Foreign Service, and was previously senior lecturer at Kings College London / UK Joint Services Command and Staff College. He is the author, editor or co-editor of 23 books, including *The Research Handbook of the Arms Trade* (UK: Edward

Elgar, 2020), *The Future of the US-Australia Alliance* (London: Routledge, 2021; co-edited with Scott McDonald, retired, US Marines) and *China's Foreign Policy: The Rise of a Great Power* (London: Routledge, 2022; co-authored with Andrea Benvenuti, C. P. Chung and Nicholas Khoo).