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People's Liberation Army Navy

An Overview of Maritime Strategic Thought, Naval
Capabilities, Implications of Military Reforms & Naval
Operations and Exercises



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PREFACE

This paper aims to provide an overview of the Chinese maritime strategic thought and naval capabilities that could have a bearing on India's strategic and security environment, particularly in the Indian Ocean. It provides a broad picture of major reforms in PLA during the Xi Jinping era that commenced in 2014 and the drivers and objectives behind these reforms. An attempt has been made to understand how the objectives of the reforms are being addressed, what the likely obstacles are, and key changes anticipated in the future for consolidating these reforms and specifically the implications for the PLA Navy. The document also tracks the evolution and trends vis-à-vis PLA Navy operations, training and bilateral/ multilateral exercises over the last decade to understand what it augurs for the India's strategic environment. Accordingly, the paper has been divided thematically into four parts. The first part covers the drivers, external influences and environment that have shaped China's maritime strategic thought and how they perceive India's maritime strategy, thought and capabilities. The second part broadly covers PLA Navy capabilities that can bear upon in the far seas region. The third part looks at the military reforms in the PLA in Xi Jinping era and how they would play out for PLA Navy functioning and its far seas operations. The fourth and last part details the evolution of PLA Navy operations, training and bilateral/ multilateral exercises in the past decade.

PART - I

CHINA'S MARITIME STRATEGIC THOUGHT

This part provides the first hand perspective from Chinese scholars and academia on the Chinese maritime strategic thought. The information in this part is sourced from “China’s Maritime Power and Strategy: History, National Security and Geopolitics”, Hailong Ju, Jian University, China; originally published in Chinese by China Social Science Press in 2012, English translation published by World Scientific Publishing Co. Pvt Ltd in 2015. Additionally, China’s Defence White Papers have been used to look at variance and inconsistencies, if any, between the academic and official thought and also to bridge the gap till the year 2019.

SECTION 1 – BACKGROUND

In 1949, considering the prevailing domestic and international environment Mao Zedong proposed an *off-shore defence strategy* for China. In late 1970s, Deng Xiaoping in response to needs of formulating a National Defence strategy proposed the *coastal defence strategy*. At the end of 20th century China proposed the positive *off-shore defence strategy*.

The National Defence white paper released by China in 2006 listed the goal of army to “gradually promote the *in-depth off-shore defence strategy* so as to improve its overall maritime operational capabilities and nuclear counter-attack capabilities.”

Chinese scholars believe that historically the emergence of maritime powers worldwide has accompanied bloodshed and violence and even the modern maritime powers advocate that “power determines rights and interests” while seeking nothing but profits. If China follows a similar path to attaining maritime power, it is expected to face conflicts and eventual suppression by the prevailing maritime hegemony of traditional powers. There appears a thought of first heeding a change in the rules of maritime hegemony, statedly to create a more peaceful world. China needs to foster a new marine civilisation for Asia without expanding its influence like the traditional western sea powers did. This is proposed to be achieved by becoming a maritime power by first attaining the requisite national powers.

There is also a contradictory thread that as it builds itself into a maritime power, China must learn from its past lessons of repeated defeats resulting from a conservative maritime strategy; taking purely peaceful and compromising policies will incur provocations from neighbouring countries and other powers.

Drivers for China's Need to be a Sea-power

Post deep reforms, China's economy by the 21st century became highly dependent on ocean trade. It became a net importer of oil and coal and the rise in import and export of bulk commodities boosted the growth of shipping as well as modernisation of Navy. China's large merchant fleet and highly export oriented economy has given rise to the strategic demand for China to march towards the sea.

30 years of reform and opening up has resulted in the increased influence of Chinese market on the world economy. The solid foundation provided by these developments has given rise to calls for China to achieve its potential maritime power. Meanwhile, China employed the strategy of keeping a low profile, avoiding differences and seeking joint resolution of territorial disputes to gain critical period of strategic opportunities. Chinas growth has put a lot of pressure on the external world and this is evident from the “Rebalancing Asia” policy of US.

China considers the geopolitical environment in the outer edge islands chain of the East Asian continent starting from the Japanese archipelago and stretching from Taiwan to island countries such as Philippines, Brunei, Malaysia and Indonesia. Asia-Pacific strategy of USA, the Taiwan issue and the South China Sea (SCS) disputes are the biggest challenges in its maritime neighbourhood. With a coastline of 320,000 km and maritime territorial rights over an area of 3 million square kms China enjoys the geography to become a maritime power but is caught up in a geo-strategic dilemma.

National Security Perspective of China

From National security perspective, China considers Japan as a major threat. Japan, taking advantage of its alliance with the USA after the world war has advanced technologically and economically. Having transferred its manufacturing base of low-tech industries to neighbouring countries it has created hierarchical and asymmetrically interdependent economic structure. Since the 1970s, Japan has started departing from its post war Peace Constitution and is developing into a major military and political power. However, its strategy with China, South East and North East Asian countries is centred on Asia- Pacific strategic framework of the USA.

China recognises that it shares inseparable cultural bonds with India and that there are disputes over territorial issues. There have never been strategic conflicts and competition between India and China earlier. However, the rise of these two big nations may change things. India exerts a huge influence on the Indian Ocean and South East Asia while strategic influence of the Chinese navy stretches as far as the Bay of Bengal. Therefore, what measures China should take to guarantee the security of its merchant fleets and oil tankers that have to cross the Indian Ocean is an important part of the discourse among the Chinese.

To summarise from the perspective of China, US is the maritime hegemon in the Asia-Pacific region, Japan with US support covets the maritime power in East Asia and India checks the maritime economic lifeline of China in the Indian ocean. The three Asia-Pacific powers constitute the national security perspective driving China's maritime strategy.

Geostrategic Perspective

The first island chain isolates China's off-shore waters from oceans and serves as a safety shield for China but it also hampers expansion of its maritime influence. The degradation of China's maritime power since Yongle Emperor in Ming Dynasty and the ban of "no boat can enter the sea" in the early Qing dynasty cut off China from the rest of the world and weakened its influence on countries and sea regions within the first island chain. Since 17th century, western powers arrived in South East Asia and occupied islands and reefs and this natural barrier became the launch pad for attacks against China. Strategic inclinations of South East Asian countries has therefore become key in determining the East Asian geopolitics. China's influence on the first island chain since the 20th century exists only in two places. One is Taiwan, which is at the centre of the chain and the other is the SCS. However, Taiwan has not been part

of the mainland since its “retrocession” and the Nansha (Spratly) Islands which embody China’s sovereignty in the SCS are occupied by Vietnam, Philippines and Malaysia. China considers these two issues as the biggest roadblocks in China’s rise to a maritime power.

Any regional order or the distribution of power between states changes with changes in relative national strengths and is a dynamic process. The East Asian order was formed in the late 19th and early 20th century when China was weak. The increase in China’s wealth and technology over the past 30 years will influence the reshaping of the international order and is bound to generate hostility from those enjoying vested interests. With the reconstruction, power of the countries will be distributed and their status will be redefined.

South China Sea (SCS) and South East (SE) Asian Countries

In late 1960s and early 1970s, discovery of oil reserves in SCS and evolution of international maritime laws, including the concepts such as 12 nm territorial sea, 200 nm exclusive economic zone (EEZ) and Extended Continental Shelf up to 350 nm, dragged China and coastal SE Asian countries into a conflict over maritime rights. The China discourse avers that international rules of the western civilisation have changed the relationships between China and SE Asian countries. SCS had never been a source of conflict for earlier SE Asian dynasties till then.

China perceives the uncertainties in the Korean peninsula and Indo-China peninsula as *risks to security of China’s off-shore waters*. Uncertainties around SCS and Taiwan are perceived as *risks to China’s expansion from controlling off-shore waters to far-seas*.

SECTION 2 – CHINA’S SEA-POWER THEORY

Post founding of the People’s Republic of China (PRC), China’s naval and maritime strategy was driven purely by the Central Government and top level policy makers. There was no discourse in the academia. Post reforms, the academia stepped into the study of maritime strategy, going beyond the traditional aspects of military security and widening the ambit to include other areas such as United Nations Conventions for the Laws of the Sea (UNCLOS), SCS disputes, international laws, historical geography, marine transport security, marine resource exploitation etc. The current discourse therefore is comprehensive in covering detailed analyses of the historical lessons, geography, prevailing geo-political-strategic and economic environment etc.

Interestingly, the Chinese appear to be influenced by three main Sea-power theorists which includes Alfred Thayer Mahan of USA, Indian thinker Panikkar and Russia’s Gorshkov. Influence on Chinese scholars of Alfred Thayer Mahan and his seminal work in the year 1900 on modern naval strategy and sea-power theory is quite evident. The Chinese scholars believe that his work heavily influenced the two world wars and the strategic thought of countries like USA, India and the USSR after the Second World War. Mahanian thoughts on sea-power resonate with the Chinese scholars’ such as “Need for a strong Navy for a country to become a maritime power and its basis for a country to assume command of the sea”; “After a country has built a strong maritime military force it must

occupy or seize favourable geographic locations to assume command of the sea”; and “Following the basic diplomatic principle to resolve disputes in a peaceful way may lead to complicated political relations and more severe diplomatic disputes with other countries. In such cases military force is a key factor. A strong Navy is a deterring strategic strength”. The need to occupy or seize favourable geographic locations to ultimately assume command of the sea is also recognized. The two main principles of Mahan’s sea-power theory cited are :-

- a. Securing the off-shore waters and islands which upon being occupied by the adversaries can threaten own security, is fundamental. This is the first level of sea-power of the maritime power and the basis for the latter to go from off-shore waters to far-seas.
- b. The scope of sea-power should expand in accordance with national interests overseas.

Chinese scholars interpret Panikkar and Gorshkov’s thoughts on Navy and maritime geopolitics to have been influenced by Mahan’s theory but tempered to respective national conditions and background. Panikkar who proposed the strategic goal for India to control the Indian Ocean, is referred to as father of Indian Navy and the founder of India’s modern sea-power theory. Panikkar’s assertions leave a mark on Chinese understanding of India – “If India does not want to obey any country which assumes sea hegemony in the Indian Ocean ... it must build a strong Navy ... Indian Navy is to be built neither to defend the coast nor to seize command of the sea ... (but) so that adversary ships cannot threaten the mainland and interfere with India’s foreign trade ... the strategic task for Indian Navy as a naval task force (is to) operate in off-shore waters ... as a regional force, (to) protect the Arabian Sea and Bay of Bengal from enemies as

well as beat back the enemies to ensure a secure marine transportation ... as a blue water naval force, to cooperate with fleets of friendly countries in the high seas across the world.” Similarly, Gorshkov’s theory of sea-power is considered the basis of the erstwhile USSR as well as modern Russian naval strategy. The sea-power theories of Pannikar and Gorshkov are highlighted as milestones in the maritime military and the geopolitical thinking after Mahans’s sea-power theory.

Chinese scholars believe that these sea-power theories may not be applicable in today’s globalised world and there is a necessity to change and modify these traditional theories. However, these theories still exert influence on the policymaking of many countries including the naval and maritime power policy. Therefore, these must be treated seriously. Drawing from the sea-power theories, the Chinese believe that Mahan’s sea-power theory should be kept in mind while formulating and implementing China’s maritime power strategy. No one will provoke a nation at the risk of being shot by the army, so the Navy is the most important political trump card of the country in international affairs. To achieve sea-power, therefore, a country in addition to having a strong Navy should also seize or occupy better geographic locations to give full play to the Navy. As in the case of USA, the isthmus of Panama, the Caribbean Sea and Gulf of Mexico are the places where no other country can encroach upon as core interests of the USA lie there. In 2010, China proposed that its core interests are in the SCS. China should therefore reconsider policies concerning the neighbouring waters which if occupied by enemies will post threats to important strategic places which are directly related to overseas interests. China’s actions should not be based upon the reaction of or evaluation by other countries.

SECTION 3 - ECONOMIC DRIVERS OF CHINA'S MARITIME STRATEGY

Security of energy, security of sea-based resources in its territorial waters, security of transportation and security of access to markets and world economies are the major drivers shaping China's maritime strategy. China's rapid economic growth has resulted in a surge in demand for energy and resources. There is real fear that the supply of energy and resources may fall behind the speed of economic growth. Economic interests and resources in the ocean are also significant to China as its economy grows at a high rate. By 2010, half of major minerals were expected to be in short supply. China was projected to be forced to resort to the oceanic resources in the 21st century.

Security of Resources in Sovereign Waters

The United Nations Convention on the Laws of the Sea (UNCLOS) came into effect on November 16th 1994. This led to nations rushing to establish their sovereign waters for exploiting the resources in the ocean. China's territorial sea is about 0.37 million sq km and together with the contiguous zone, EEZ, continental shelf, China's maritime territory covers about three million sq km, ranking 10th in the world. There are considerable reserves of oil and gas and mineral resources in the sea bed of China's sovereign waters. In the SCS there are substantial reserves of

oil in the northern continental shelf, that is about 450 million tons in the Pearl river mouth basin and 150 million tons in the basins of South Eastern Hainan, Yinggehai and Beibu Gulf. There are more than 300 billion cubic meters of natural gas reserves. Around Nansha (Spratly) Islands there are eight sedimentary basins of 410,000 sq km, of which 26,000 sq km are within the U-shaped dotted line (9-dash line) on the Chinese map. Here the oil reserves are about 35 billion tons, recoverable being 1.2 billion tons, and natural gas reserves of 8 trillion cubic meters. Few minerals in the sea sand are now industrial grade including Ilmenite, Chromite, Tungsten, Zircon, Monazite, Xenotime, Rutile, and Quartz. There are also abundant botanical and biological resources that may be critical for China's economic development.

China has a dispute with Japan over the demarcation of the East China Sea and sovereignty over the Diaoyu (Senkaku) Islands. These disputes have a huge implication in terms of control over continental deposits and resources. Japan has also 'seized the Diaoyu Islands. South Eastern countries like Vietnam, Philippines and Malaysia have claimed jurisdiction over the islands and reefs in the SCS and pre-emptively secured these by exploiting the provisions of UNCLOS. Vietnam has occupied 29 reefs in the SCS and claimed the Nansha (Spratly) and Xisha (Paracels) Islands. Philippines has secured nine Chinese reefs and claims the Huangyan island. Malaysia has secured the Swallow and some other surrounding reefs. These countries are exploiting oil and gas resources in this region and inside its so called China's 9-dash line.

According to the UNCLOS, inhabited reefs may enjoy the same status as land and the Chinese fear that if this regulation becomes a reality, each reef can have its own EEZ including the waters, seabed and subsoil. China's stand is that it is being denied its legitimate sovereignty over the Islands and waters by the South Asian countries under the cover of UNCLOS.

These countries are accused of stealing China's sovereignty and rights by occupation of islands and reefs forcefully, building infrastructure and exploiting resources in the contested waters.

Security of Overseas Energy Resources and Shipping

China's dependence on imported oil was projected to increase from 30 percent in 2010 to more than 50 percent in 2020. Majority of this oil is transported by sea. Security of this energy supply and shipping routes has a direct influence on the economic security. Majority of China's crude oil is imported from the Middle East, and most of the petroleum is imported from South East Asia. Growth of Chinese foreign trade also requires security of its shipping. The proportion of trade in China's GDP increased from 49.2 percent in 2000 to 54.7 percent in 2003. Thus, the focus of China's economic security will continue to be on the sea in the medium and long term. In their opinion, PLA Navy lacks the ability of far-sea operations and cannot protect the maritime oil flow or effectively defend its territorial waters in the SCS and considers that a huge latent threat. Positively considering overseas bases to enhance strategic influence on sea routes connecting China to these areas is thus strongly advocated.

Security of Access to Markets and Economies as well as Global Economic Structures

Chinese scholars state that the objectives of the Asia Pacific Strategy of the US are to contain China's rise, to prevent threats to its interest in the region through strategic partnerships in the region, preserving security of allies of the USA and ensuring America's economic connectivity with markets and trade partners in the region. China perceives that in order to secure these objectives, the USA will maintain control of the first island chain - extending from Japanese archipelago, Korea peninsula, Taiwan, Philippines to Kalimantan Island, Sumatra Island, and to Malay Peninsula.

USA will thereby continue to control all strategic passes through which China can gain sea-power and maintain a strong military deterrence in the region. China's maritime power strategy to overcome this situation as it would then change the power structure in Asia and the West Pacific region and end America's strategic dominance over the Asia Pacific region. The globalized Chinese economy has thus introduced new elements to the realm of its maritime security, viz., security of sea routes and security of strategic environment around China and security of far the seas.

SECTION 4 – INFLUENCE OF GEO-POLITICAL- STRATEGIC ENVIRONMENT IN ASIA-PACIFIC AND INDIAN OCEAN ON THE CHINESE MARITIME STRATEGY AND THOUGHT

China's View of the Asia Pacific

China posits that the geopolitical situation in the western Asia Pacific region has been changing since the end of Second World War due to rise of China and the ASEAN, and Japan's rise as a military and political power. As a balancing strategy, the US has deliberately projected China as the new strategic 'imaginary' enemy while aligning with Japan. Post-Cold War, the USA has strengthened its alliance with Japan to secure its strategic interests in Asia Pacific. The US support is an important factor in the military and political rise of Japan and has increased the latter's strategic influence. The US is also believed to have 'deliberately' created strain between China and ASEAN countries by taking advantage of the SCS issue. As China avers, leveraging the USA-Japan alliance, the US policy has overtime transitioned from 'not objecting to China' to supporting South East Asian nations over SCS disputes. This change in American stance on the disputes between South East Asia countries and China over SCS is believed to have been driven by a 1996 special report of the United States Institute of Peace called the '*SCS dispute: Prospects for Preventive Diplomacy*'. Meanwhile Japan promulgated *Guidelines for*

Japan-US Defence Cooperation and the Security of Japan in Situation in Areas Surrounding Japan (SLASJ) Law hardening the stance and actions of Japan towards disputes in the region.

According to China, in the mid and late 1990s, the treaty of mutual cooperation and security between USA and Japan and the proposed *Law on Emergencies in Areas Surrounding Japan* laid the legal foundation for Japan to extend operational scope of Japan Self-Defense Forces into the SCS. Since 2012, subsequent to Sino-Japanese confrontation over the Diaoyu Islands, Japan Maritime Self-Defence Force (JMSDF) and Japan Air Defence Self-Defence Force (JASDF) activities in the region have increased and they are poised for conflict at any moment. China believes that Japan has become the most overt challenger of China's maritime power strategy.

In 2009, the US initiated its 'Rebalancing to Asia' strategy with 'returning to South East Asia' policy. Since then it has regained the rights to use Subic bay naval base and Clark air base of the Philippines and built a naval logistics base in Singapore. The US has increased military exchanges and political relations with the Philippines, Singapore, Thailand and Vietnam and has also conducted military exercises with various South East Asian and Asia Pacific countries including Philippines, Thailand, Singapore, Malaysia Indonesia, Cambodia, Bangladesh and Brunei. Overseas military deployment and strategic alliances in the region are therefore considered as the USA's main strengths in controlling sea-power and geopolitical structure in East Asia-West Pacific. The US exercises strategic deterrence in North East and South East Asia through three air bases in Guam, Japan and South Korea respectively. It also has three naval bases and an army base in the West Pacific – naval fleet in Yokosuka, naval base in Singapore and Guam and a Marine Corps base camp in Okinawa. Presence of such US military capabilities imposes enormous pressure on China in the first

island chain.

China is convinced that China, India and Japan are rising sea powers in Asia, and the ASEAN is growing in influence. USA can maintain a strategic advantage in the region and secure its interests only through cooperation with Asian allies and by a 'divide and rule' strategy.

Indian Ocean

China acknowledges India's strategic and diplomatic independence and its policy of non-alignment with any super power or bloc. India's advocating in the 1970s for the Indian Ocean to be a 'zone of peace' in response to Soviet and US naval presence in the Indian Ocean has also substantiated this idea.

China's Perceived Indian Naval Strategy

China perceives that India has established its strategic goal in the Indian Ocean. The Chinese scholars have highlighted that India considers its EEZ which spans across the Arabian Sea and the Bay of Bengal as its *zone of positive control*, the area of 300 to 600 nm beyond that as *zone of medium control* and includes the Straits of Hormuz and Malacca Strait for surveillance, and area beyond 700 nm extending from Gulf region to Cape of Good Hope as *zone of soft control*. Indian Navy's erstwhile Chief of Naval Staff Madhvendra Singh's statement in 2004 is quoted to posit that a 500 nm zone which includes India's territorial waters and EEZ is the zone of its absolute control, while the zone of medium control extends beyond the EEZ up to 1000 nm where the Indian Navy undertakes surveillance. The third zone of soft control beyond 1000 nm is where Indian Navy has the ability of self-defence, warning, patrolling and projection capability. The overall area is thus stated to stretch from Bay of Bengal to the Andaman Sea, and from Nicobar Islands to Maldives in the

West and onto the Persian Gulf.

India is acknowledged as the most important maritime power in the Indian Ocean with naval bases in Mumbai, Karwar, Kochi and Visakhapatnam. India's modern Navy's ranking of Number Seven in the world and its enhanced capability in designing and building medium sized aircraft carriers on its own is highlighted. Strengthening of naval infrastructure, particularly deep-water military port with permanent fortifications in Andaman and Nicobar Islands and bases in Visakhapatnam and Kochi, providing support to each other, are considered as strong military deterrence in the Bay of Bengal and the Straits of Malacca. India is recognized as 21st century real sea power having transformed itself into a blue water and modern Navy with advanced naval and air strike capability having aircraft carriers and nuclear submarines. Its naval bases are recognized for providing India with strong strategic influence on South East Asia, especially on the Straits of Malacca. India 'Look East Policy' and its influence on West Pacific is also watched closely. Indian strategy is not considered purely defensive and is perceived as aggressive and expansive. China is convinced that the international community believes that India's frequent joint military exercises with Singapore, Indonesia, USA and Japan are aimed at containing China's strategy in the West Pacific.

India is also believed to have, over time, adapted itself to USA's Indian Ocean strategy in order to avoid conflict of interest over overlapping areas of interest in the Indian ocean with the USA. The reasons which aid in reducing the possibility of its conflict with US interests are inferred to be that India's interests lie largely to the eastward and that it always uses the China threat. This also helps India in identifying common causes with Japan and South East Asian countries and makes it easier for it to implement its Look East Policy.

The SCS

China proclaims historical sovereignty over the Nansha (Spratly), Zhongsha, Xisha (Paracels) and Dongsha Isles. It had even announced sovereignty over these Islands in 1933. China feels that its historical rights over these places have been threatened by unilateral claims in SCS which have been triggered by international maritime laws: In 1978, the Philippines renamed most of the Nansha (Spratly) Islands as the Kalayaan island group raising claims to include a 64,976 sq nm of EEZ around the Islands; in 1968, Malaysia 'arbitrarily' designated an area of 80,000 sq km around Nansha Islands as its mining zone and leased it to Shell Oil of the USA for exploration; in 1979, it 'openly' included 12 reefs into its territory including the Glasgow Shoal; and in 1984, Brunei proclaimed an EEZ of 3000 sq km around the Louisa Reef. China avers that the situation was exacerbated when in 2009 the USA with its "returning" to South East Asia policies started intervening in the SCS issues.

In Sum

In all, China believes that since the 1990s USA has maintained China as a strategic 'imaginary' enemy. India, Japan and some South East Asian nations having disputes with China and are therefore in competition with it. As a result, China lacks a favourable political environment in the region being enclosed in a geopolitical environment surrounded by countries unfriendly to it. As China perceives, its northern region is under Russian spheres of influence, in the southwest there is India, and the South East Asian nations have a delicate relation with China. In the northeast, Japan considers China as an enemy.

SECTION 5 – CHINA’S PERCEIVED STRATEGIC ADVERSARIES

China Separates its maritime geographical environment into two major areas namely, *off-shore* and *oceans*. In the off-shore areas It considers itself confronted with maritime disputes. In the oceans it feels the need to ensure security of the Indian Ocean shipping lane on which its economic security is hugely dependent.

Off-Shore Security – Japan

China considers Japan as its primary adversary in its off-shore waters. Japan’s economy is heavily dependent on raw materials and energy which are largely imported. Japan therefore attaches great importance to strategic influence over the seas.

Post Korean War, Japan entered an era of ‘Yoshida Doctrine’ when the primary aim was to develop Japanese economy under the security umbrella of USA. In the 1960s, Japan became a major economic power, second only to USA, thus evoking a demand for self-defense. As a result, JMSDF was formed in 1976. In 1978, with the promulgation of ‘Guidelines for US-Japan Defense Cooperation’, Japan’s military force got involved in the Asia-Pacific security architecture of the USA and the scope of its maritime self-defense was expanded from 300 to 1000 nautical miles.

After the collapse of Soviet Russia (USSR) in 1991, economic frictions coupled with disappearance of a common enemy resulted in a drift in USA-Japan alliance. Heeding to these concerns, in 1995 the US Department of Defense published its Security Strategy for East Asia-Pacific Region, reiterating the importance of US-Japan security architecture. In 1996 and 1997, USA and Japan released the *USA-Japan Joint Declaration on Security: Alliance for the 21st Century* and the *Japan-USA Defence Cooperation Guidelines* which redefined the USA-Japan alliance after the Cold War. In 1996, Japan's Defense White Paper officially designated China as a potential enemy and its 2001 version linked Japan's bolstering of defense to China's missile threat. Post the September 11 attacks, Japan passed its Anti-terrorism Special Measures Law, and made amendments to its Self Defense Forces Law and Coast Guard Law. These helped Japan to bypass the restraints imposed by its pacifist constitution and enabled expansion of its self-defense forces' area of operations, deployment of overseas troops and use of weapons.

In 2003, the Iraq war and the nuclear crisis in North Korea (DPRK) offered Japan a chance to modify its national security strategy. In December 10, 2004, the new 'National Defence Program Guidelines' were passed wherein modernization of Chinese army and China's maritime activities were seen as challenges to its Asia-Pacific strategy while the cross-strait relationship in the Korean Peninsula was identified as a latent threat to regional security. In 2009, the SCS disputes again came into limelight with Japan actively cooperating with USA, Philippines and Vietnam. In 2012, a confrontation between China and Philippines over the Huangyan Island resulted in Japanese investment and aid flooding into Philippines and driving the economic growth of that country. Japan also commenced establishing control over the Diaoyu Islands during this period.

Ocean Security- India and China as Strategic Rivals in the Indian Ocean

After China's accession into the WTO its economy has been increasingly linked to the whole world. Import of energy and resources and export of physical goods through sea routes are increasingly becoming the life line of China's economic development. China's shipping routes are extensive and considered well beyond the range of military protection. Recent deployments of PLA Navy to Somalia for international escort missions and its presence in Indian Ocean has improved that capability to some extent but these are not seen to have much deterrent effect in the absence of an independent supply base, though China has managed to set up a military and logistics support base in Djibouti in 2017.

China sees India as being blessed with geographic advantage over the sea route from Malacca through the Indian Ocean to the Middle East which is the China's maritime lifeline. India is believed to have always regarded China as its imaginary strategic enemy. Former Indian Chief of Naval Staff Madhvendra Singh's articulation of India's naval plan and strategy of controlling the Indian Ocean region is quoted while stating that factors such as aircraft carriers, and capability of air and sea operations has enabled India to become the strongest force in the Indian Ocean. India's naval strategy and geopolitical strategy are highlighted as two pillars of India's maritime strategy.

India's strategic objective of developing a blue water navy is considered to have been realised. Andaman and Nicobar Islands, with their strategic location and significance, are considered India's gateway to East Indian Ocean. Setting up of a Tri-Services command in Port Blair in 2001 is considered a significant event which has provided India enhanced

surveillance capabilities, ability to prevent and cut off threats from South East Asia and East Asia, and also the ability to expand its Navy' reach to exert greater influence on South East Asia, West Pacific and the SCS.

In China's reckoning, India's Kadamba naval base provides significant capability of surveillance and protection of sea routes along the Arabian Sea and increased the combat capability in the Western Indian Ocean. The naval base at Visakhapatnam and under construction Gangavaram naval base on the East Coast protect maritime trade routes between India and South East Asia that can be used to pin down PLA Navy beyond the SCS. It has been inferred that India's 'Look East Policy' can indirectly influence the Straits of Malacca and West Pacific regions, considering that West Pacific region is a part of USA-Japan alliance's sphere and that Australia is planning the construction of Dampier port on its West Coast.

After George W Bush took the second term as U.S. President, USA-India cooperation has been on a rise, including sale of weapons to India and joint military exercises. In 2005, India and USA signed a new framework for the US-India defence relationship for 10 years. China foresees that once the influence of its maritime strategy transcends beyond the first island chain, a new strategic relationship will form between India, Australia and the USA in response to China's rise. In 2010 and 2011, China noticed that India became proactive in affairs of SCS and actively conducted military cooperation with Japan and USA. Apart from conducting military exercises with Indonesia, Malaysia, Singapore and Vietnam and signing military cooperation agreements with many ASEAN countries, India has militarily engaged with USA and Japan in the SCS.

The Indian Ocean is seen as India's maritime strategic target and with its Navy actively deployed in Indian Ocean, India has gained a level of sea-power which cannot be ignored by any country including the USA. India's

strategic influence on the Indian Ocean is undoubtedly an important factor in influencing China's maritime power strategy. In the long term, however, it is believed that geographical separation between India and China imposed by the Himalayas, Malacca Straits and the SCS makes it very difficult for either to impose their respective strategies on the other through direct force.

China's Perception of Japan's Strategic Thought and Objectives

Japan is seen to be expanding its scope of maritime defence by taking a tough stance on the sovereignty dispute over the Diaoyu Islands and demarcation of waters in the East China Sea, increasing its interventions in the SCS region and cooperating strategically with India and the USA. China is wary for Japan is constantly strengthening its naval force and adopting an aggressive strategy. Japan imposes strategic pressure on China from the Bohai, Yellow and East China seas, as well as in the Taiwan Strait, SCS and the Malacca Straits. China meanwhile finds itself unable to completely safeguard its territorial waters.

Japan cannot avoid the critical North-South routes in the Western Pacific and the Taiwan Straits. Controlling Taiwan is the key to controlling maritime routes from Philippines to Japan and the Korean Peninsula, and thereby cutting off all maritime passages in the Western Pacific region. Reunification of Taiwan will enable China to break through the first island chain and interfere with these maritime routes of Japan. China will not only be able to threaten Japan's mainland from South by containing the Ryukyu Islands but also gain heft in the territorial disputes in the East China Sea and over Diaoyu Islands. Chinese submarines can also be deployed easily in deeper waters east of Taiwan. That's why Japan is keen to maintain the status quo in the Taiwan Strait.

The SCS, encompassing the Malacca, Sunda and the Lombok Straits is a strategic oil passage for East Asian countries, and therefore an important region for energy security of China, Japan, the Republic of Korea and the US troops stationed in East Asia. Japan passed the Japan-USA Defence Cooperation Guidelines in 1997 to include the SCS into the scope of its strategic defense. In 2000, in its National Defense White Paper Japan attached great importance to the security situation in SCS in response to China increasing activities in the disputed areas. Chinese scholars have also taken note of Shinzo Abe's tough stand in 2013 on the Diaoyu Island disputes and perceive that Japan, irrespective of the degree of conflict, will not give-in easily. China believes that Japan 'imagines' China to be an enemy and that is driving its endeavour to build itself into a maritime power.

After the September 11 attacks, under the pretext of providing assistance to Afghan refugees, Japan removed economic sanctions imposed on India after the latter's nuclear tests of 1998. Their mutual trust and political cooperation is on the rise since then. In 2007, navies of USA, Japan, India, Australia and Singapore held military exercise MALABAR in Bay of Bengal. China senses that since then, cooperation between the three countries is institutionalised.

SECTION 6 – TAIWAN AND SCS ISSUES - TWO CRITICAL GEOGRAPHIC LEVERS FOR CHINA'S MARITIME INFLUENCE

Taiwan and SCS are considered two key geopolitical fulcrums for China to realise its far-seas strategy. The biggest deterrent to realization of China's sea-power dream is the US-Japan alliance.

Taiwan Issue

China's need for Taiwan is figuratively seen as a soldier's need for a weapon. For China, loss of Taiwan is perceived as losing the means of attaining comprehensive maritime power. Unification of Chinese mainland with Taiwan provides China a frontier to seawards and the potential to challenge the strategic advantage of USA in East Asia. Independent Taiwan as an isolated island may not necessarily work against China but it would need to pursue a foreign policy of balancing relationships with major countries to safeguard its independence. For USA, the existence of the Taiwan issue is a premise to contain China's strategic influence. China's increasing influence and its military strength makes the strategic significance of Taiwan all the more valuable for USA.

China perceives that either of the two conditions, viz. Taiwan's independence or reunification will have effect on national interests of USA. Therefore, it infers that America's best interest is served in maintaining status quo, i.e. support neither independence nor unification and let China pursue

an unattainable dream of Taiwan's return. On the one hand, the Sino-US joint communique of 1972 acknowledged that all Chinese on either side of Taiwan Strait have but one China and that Taiwan was part of China, and on the other hand, the Taiwan Relations Act was passed in 1979 revealing the American design of maintaining an equilibrium and status quo by 'divide and rule'. China notes that under the said Act USA has continued with arms sales to Taiwan.

In the event of a confrontation between China and USA, staging of US forces from Taiwan would extend America's combat range to cover the whole of China. The Chinese have quoted an American scholar's statement that "comparison of military power of navies of both sides of the Taiwan Strait in the 1990s indicates that Taiwan was more likely to deal an upper hand" owing to superior military naval platforms and weapons provided by the Americans. USA has provided frequent commitments to Taiwan's security. The main premise of the Taiwan Relations Act is that USA will enter into military conflict with China if China uses force against Taiwan when it does not declare independence. In 1996, the US House of Representatives passed a resolution urging the government to help Taiwan defend aggression, missile attacks and blockades from the PRC. Although the Chinese are not certain whether USA will actually engage in an all-out war with China once the gun is fired across the Strait, the warning of possible interference is undoubtedly considered effective.

Chinese scholars believe that in the event of a war it will take many years for China and Taiwan to recover from economic loss and degraded military strength. Even if China prevails, the advantage would be offset by the price it has to pay including in terms of restoring international relations. Therefore, pursuit of geostrategic advantage should be undertaken only after comprehensive national strength is achieved.

The SCS Issues: China's Case

In late 1960s and early 1970s discovery of oil reserves in SCS and evolution of international maritime laws including the concepts of such as 12 nm territorial sea, 200 nm EEZ and extended continental shelf up to 350 nm pushed China and coastal SE Asian countries into a conflict over distribution of maritime rights. The SCS disputes involve five countries and are considered critical for China's sovereignty over the islands in the SCS. The issue will have a bearing on China's maritime security, impact its strategic surroundings and retard its growth as a maritime power.

China believes that it is the first country to discover, develop and administer the SCS islands and thus assumes indisputable historical sovereignty over these. It bases its claims on historical evidences dating from Ming and Qing dynasties.

Although claims by the Philippines over these islands in 1950s marked the beginning of contemporary disputes, the issue had not developed into territorial disputes till a survey report of 1968 by the Committee for Coordination of Joint Prospecting (CCOP) of the Economic Commission for Asia and the Far East (ECAFE) revealed abundant deposits of oil and gas resources in coastal waters adjacent to Vietnam and eastern and southern waters of Nansha (Spratly) Islands. Concepts of continental shelf and EEZ decreed in UNCLOS were then used by coastal countries to claim their rights.

When the report was released in 1968 Philippines and Malaysia occupied some of the Nansha Islands and reefs to claim 200 nm EEZs. Malaysian government then leased, illegally according to China, the Nankang, Beikang and Zengmu reefs covering 80,000 sq km to a subsidiary of Shell to drill for oil. In 1970, the Eastern Oil and Mining Corporation of the Philippines started to dig Pagasa 1-A, 50 nm North West of the Palawan

Island. In 1975, Vietnam published a white paper claiming sovereignty over Xisha (Paracels) and Nansha (Spratly) Islands. During the next ten years the Philippines occupied Mahuan Dao, Zhongye Dao, Xiyue Dao, Beizi Dao, Feixin Dao, Shuanghu and Shazhou and Siling Jiao. In 1979, Malaysia included 12 islands and reefs including Nanle Ansha into its territory. In 1984, Brunei assumed sovereignty over Nantong Jiao and nearby waters. Vietnam has signed 33 joint oil development contracts with more than 50 foreign oil companies covering almost whole Nansha waters; crude oil has now become the primary export of Vietnam. The Philippines has also stepped-up exploitation of oil in the SCS. Malaysia has drilled more than 90 oil and gas wells and the value of its oil export accounts for 20 percent of its total GDP. Brunei is the fourth largest oil producer in South East Asia and the largest natural gas producer in the world. It has eight off-shore oil producing regions two of which are within China's so called 9-dash line.

In 1996, the US Institute of Peace submitted the famous report - *The SCS Disputes: Prospect for Preventive Diplomacy* - and linked the issue to strategic USA's interests and economic security of its ally Japan. It recommended adoption of measures, including military deterrence, to prevent China from taking unilateral military action. This led to resurgence of the 'China threat' theory in USA and Japan.

The Chinese stand is that in the 1970s it had proposed to set the disputes aside and join efforts in developing the SCS. The idea was ignored by other countries. Currently, within the SCS there are more than 100 oil and gas wells being drilled by countries such as Malaysia and the Philippines besides more than 200 international companies from USA, UK, Russia and Germany, with more than 50 million tons of oil exploited per year. However, no progress has been made to negotiate joint oil and gas exploitation in the disputed waters.

China asserts that it is being wrongly blamed for violations of principles of 'Declaration of Conduct of Parties in the SCS' (DOC), the International laws and freedom of navigation in the SCS. It highlights some statistics from 2002 to 2010 that show up to 60 severe violations of DOC by countries surrounding the SCS - the Philippines and Vietnam being in the lead. The year 2005 saw a sharp drop in the number of DOC violations when a tripartite agreement on 'Joint Marine Seismic Undertaking in the Agreement Area in the SCS' was signed by China, the Philippines and Vietnam. However, as China avers, the number of DOC violations have surged and the security situation has deteriorated since the USA's return to South East Asia in 2009.

In 2010, the USA issued its first statement on the SCS territorial disputes and included most of the countries, including those outside the Asia-Pacific, as interested parties in the SCS issue. It stated that US will not only intervene but support multilateral dispute settlement mechanisms and thus disrupted China's efforts of settling disputes through bilateral negotiations. That has turned the SCS disputes into a regional and even global issue, making it more complex to resolve.

How China Envisions the SCS Disputes to play out in the Future

China Believes that crude oil consumption of Vietnam is expected to reach 40 million tons in the future while Vietnam can maintain an annual crude oil output of only 10 million tons, thus leading to strong demand for oil and gas in the SCS. Looking at Vietnam's cooperation with Canadian and Indian companies on joint exploration of oil, China does not expect the territorial disputes with Vietnam to end.

The Philippines has a typical energy driven economic development model. Its oil and gas reserves in the Reed Bank can satisfy its gas demands for

almost a century. But owing to its surging population and rapid urbanization Philippines is in a desperate need of energy. Also, the USA is assisting by enhancing military and security cooperation and strengthening its naval forces. China does not expect cooperation from Philippines on this issue.

Chinese scholars assert that deliberate intervention of the USA in Diaoyu Islands and the SCS disputes as part of its 'Rebalancing Asia' strategy is disastrous for China's maritime power strategy unless it achieves economic, social, political and diplomatic breakthroughs in a short period.

SECTION 7 – CHINA'S MARITIME AND NAVAL STRATEGY

Deng Xiaoping is credited with providing the direction of the overall strategy for China. The strategy involved first developing the economy with everything else subordinated to it. He expressed the hope that “no war will break-out so that we can concentrate on the drive to modernise our country. Since we want a peaceful environment we must cooperate with all the worlds forces for peace. China is a force for peace which is very important.”

The principle of setting aside the question of sovereignty and developing Islands of SCS jointly is considered a feasible way for China to resolve maritime disputes with others. In pursuance of the stated national direction, since 1990s China has proposed its off-shore defense strategy. Chinese scholarship and analysis aver that maritime power strategy is based on modern naval defence and takes into account the characteristics of military and geopolitical strategies of traditional Western sea-power thoughts. China's naval strategy as emanating from its national directive was articulated by General Liu Huaqing. This strategy is typified as a regional defensive strategy and the Navy as being geared for regional defense.

China reiterates its strategy as being defensive in nature that embodies the strategy of active defense. PLA Navy's maritime combat zone is projected to be mainly up to the first island chain and the East China Sea, Yellow Sea and the SCS for a long time to come. This combat zone is predicted to extend outwards when the PLA Navy becomes stronger. The Navy is also required to deal with local maritime wars. Tasks for naval strategy are divided into peacetime and wartime. Peacetime tasks *inter alia* include: to achieve and maintain national unity including Taiwan; to protect territorial sovereignty, maritime rights and interests; to serve country's foreign policies; to prevent foreign aggression from the sea; to deal with local wars at sea etc. The wartime tasks are: to independently or jointly with Army and Air Force effectively resist attacks from the sea; to defend maritime shipping lanes; and, to participate in strategic nuclear counter-attack.

China's *near-sea defense strategy* of the PLA Navy is stated to be a inoffensive one with no intent to interfere or threaten other countries. Strategic deployment of the Navy is to be strictly limited as determined by international laws. It is brought out that China is not interested in territories and maritime rights beyond its sovereignty. China will not go against any international law to seize any illegal maritime interests in any region. China also avers that any operation beyond this strategic scope are not strategic but tactical operations against provocation and offensive action from enemies.

With the strengthening of its naval and air forces, China puts forward its strategy of *far-sea operations* on the basis of its near sea defense strategy. The focus is on responsibilities and obligations of China as a global maritime power. The PLA Navy is expected to inevitably move towards far-seas but with only one goal which is to fulfil, as claimed, China's responsibility as a big and responsible country towards Asia and the whole world.

In Sum

China is not very optimistic about the environment surrounding it in the maritime domain. In the East China Sea there are maritime demarcation issues with Republic of Korea and Japan as well as the Diaoyu Island dispute with Japan. In the SCS, China has disputes over maritime rights with Philippines, Vietnam, Brunei and Malaysia. China is also faced with the Taiwan question and is wary of India's motives which it considers as ulterior. The maritime disputes faced by China range from North East Asia all the way down to the South East Asia. Dependence of China, Japan, Republic of Korea on sea route connecting Malacca Strait and Taiwan strait is 85.7, 90.6 and 87.3 percent respectively. This makes security in the SCS very critical for the region.

China feels that the regional disputes are being used as excuses for the USA to adopt its rebalancing strategy targeting China. In South East Asia, China sees the close relations of Vietnam and Philippines with USA and Japan as a worrying factor against its near sea security, particularly the security of China's strategic lifeline from the SCS through to the Malacca Straits. Increasing cooperation between Japan and India adds to uncertainty of China-India relations.

China's far-sea strategy is hinged on Taiwan which can directly connect China with the open seas and also act as a bridge that connects South East Asia and North East Asia. China therefore considers Taiwan and SCS as two key geopolitical fulcrums for the realisation of its far-seas strategy. The biggest deterrent to realization of China's sea-power dream is identified to be the USA-Japan alliance.

Chinese scholars believe that modern wars have to take into consideration the international public opinion and demonstrate legitimacy of war to the world. Although there is an internal conviction that China has every

reason to launch a war against Japan and Philippines in response to their incursions in Chinese territorial claims, there is realization that all the alleged evidence of sovereignty presented by Japan and Philippines must be refuted to find an acceptable reason to attack, particularly on a small country like the Philippines.

Overall, China is trying to follow the policy of keeping a low profile externally till it achieves substantial overall national power. Amalgamation of the above mentioned complex issues and factors are the drivers of China's maritime strategic thoughts and actions. These would need deft handling to sustain overall national growth while minimizing conflicts with regional countries and external powers.

SECTION 8 –CHINA'S DEFENCE WHITE PAPERS 2015-2019

China's Strategic Competitors

China's maritime strategy articulated in China's Defense White Papers of 2015 and 2019 is largely in line with the Chinese strategic thought brought out earlier in this part. Interestingly, in the Defence White Paper of 2015 USA, Japan, Russia, Taiwan find mention in the context of security challenges of China, while India does not. India does find mention in the Defense White Paper of 2019 in the context of China's security issues over land stating that "China's armed forces are promoting stability and security, and instituting measures for creating favourable conditions for the peaceful resolution of the Doklam standoff". Australia finds a mention for the first time in the 2019 paper. Australia is seen as seeking a bigger role in security affairs in the Asia Pacific by strengthening military alliance with the USA and increasing its military engagement in the region.

National Defence Policy - Defensive Strategy

There is consistent advocacy of the pursuit of independent foreign policy and a National Defence Policy that is defensive in nature. It states that China would oppose hegemonism and power politics in all forms and will never seek hegemony or expansion. China's armed forces would

implement military strategy of active defense. The strategy of active defense is projected as the essence of military strategy thought. The strategy boils down to unity of defence at strategic level and offense at operational and tactical levels; adherence to principles of defense, self-defense and post-strike response; and adherence to rhetoric of “we will not attack unless we are attacked, but we will surely counter attack if attacked”. Armed forces are required to adhere to the defensive nature of National Defence policy.

National Security Threats

China’s 2015 White Paper assesses the occurrence of a world war to be unlikely and the international environment is expected to remain generally peaceful. Hegemonism, power politics and neo-interventionism are considered as new threats. Immediate threats from local wars are expected. Biggest national challenge is safeguarding national unification, territorial integrity and development interests; articulation of geopolitical environment including role of USA, Japan and the “re-balancing” mirror has been brought out in the previous sections. New threats to political security and social stability from separatist forces of East Turkistan and Tibet’s independence find mention and there is talk of serious damage from escalating terrorist activities by East Turkistan independence forces. In the 2019 paper, illegal reconnaissance by air and sea in territorial waters and air space near China’s islands and reefs by countries external to the region gets listed as a new challenge that undermines China’s national security.

Expanding Strategic, Security and Maritime Interests and Missions

The 2015 White Paper announced an increase in comprehensive national strength, core competitiveness and risk resistance capacity of China. Owing to China’s growing national interests, concerns are raised over

security of overseas interests viz. energy and resources, strategic sea lines of communication (SLOC) as well as institutions, personnel and assets abroad. Armed forces are expected to actively participate in securing these overseas interests. The 2015 White Paper required the PLA Navy to meet the strategic mandates by shifting focus from off-shore waters defense to the combination of off-shore waters defense and open seas protection. The paper recognizes the significance of seas and oceans for enduring peace, lasting stability and sustainable development of China and emphasises the “need to abandon the mentality that land outweighs sea”.

The 2019 White Paper brings safeguarding China's maritime rights and overseas interests under fundamental goals of China's National Defense. SCS and Diaoyu islands are emphatically declared as inalienable parts of Chinese territory, however commitment is made to resolve disputes related to these through negotiations on the basis of historical facts and international law. In the 2019 White Paper, development of far seas forces and overseas logistical facilities is included for the first time for the purpose of promoting international security and military cooperation along with promoting China's overseas interests. PLA Navy's operations listed towards this role are: vessel protection operations, security of strategic SLOCs, overseas evacuation and maritime rights protection operations.

The White Paper also advertises exercises undertaken by Navy and deployment of its aircraft carrier task group to the far seas in the West Pacific. The paper brings out that while the PLA has been significantly downsized, overall numbers in the PLA Navy has been increased moderately to cater for new types of combat forces to conduct amphibious operations, far seas protection and strategic projection. PLA Navy is said to be speeding up the transition of its tasks from defence on near seas to protection missions on the far seas, and is improving its capabilities for strategic deterrence and counter-attack maritime manoeuvre operations.

Commitment to military operations other than war (MOOTW) such as emergency rescue, international humanitarian assistance and disaster relief (HADR), counter-terrorism, maintaining stability, rights and interests protection, guard duty and international peacekeeping have been projected as necessary requirements towards fulfilling China's responsibilities. There is also a mention of fulfilling international responsibilities and obligations in terms of joint securing of international SLOCs. There is an effort to project China as a responsible nation forging regional security through Shanghai Cooperation Organization (SCO) and other multilateral constructs. The Paper asserts that PRC has never started any war or conflict since its founding 70 years ago.

The 2019 White Paper also lays down the directives of the highest leadership as strategic goal for China's national defence and military, i.e to complete modernization of national defence and military by 2035 and transformation of armed forces into a world class force by mid-21st century. That force is projected as a force for world peace, stability and building a community with the shared future for mankind.

Unlike the earlier White Paper, the 2019 White Paper mentions by name the top leader Xi Jinping and includes a directive to implement his thinking on military strategy. The document firmly establishes Xi Jinping as the main source of guidance on strengthening the military and also as the core of the Communist Party of China Central Committee (CPCCC).

PART - II

PLA NAVY CAPABILITIES AND IMPACT IN THE INDIAN OCEAN REGION

Introduction

This part provides a broad scan of the maritime forces and capabilities of the PLA Navy (PLAN) that can be brought to project force in the Indian Ocean region in a conventional conflict scenario. PLAN today is reportedly an even match to the US Navy (USN). It may even score more against deployable USN forces in the SCS, East China Sea (ECS) or the Western Pacific region.

PLAN's Objectives

China's navy is largely seen as posturing to challenge the U.S. Navy in the blue-water ocean areas in the Western Pacific, while developing capabilities for addressing Taiwan situation militarily. Its other objectives include achieving greater control over China's near-seas region ¹, particularly SCS; for enforcing its stated right to regulate foreign military activities in its claimed 200 nm EEZ; for defending China's commercial SLOCs, particularly those linking China to the Persian Gulf; and for asserting China's status as the leading regional power and a major world power.²

PLAN Modernisation and New Capabilities ³

China embarked on a path of modernizing its navy for more than 25 years, since early 1990s. The PLAN is now a formidable force in China's near-seas region and is conducting more and more operations in distant waters, including Western Pacific, Indian Ocean, and waters around Europe. PLA Navy includes an air component called the PLA Naval Air Force, or PLANAF. China's ballistic missile force is called the PLA Rocket Force (PLARF).

China's modernization effort includes a wide array of platform and weapon acquisition programs, including anti-ship ballistic missiles (ASBMs), anti-ship cruise missiles (ASCMs), submarines, surface ships, aircraft, unmanned vehicles, and supporting C4ISR (command and control, communications, computers, intelligence, surveillance, and reconnaissance) systems. China's naval modernization effort also includes improvements in maintenance and logistics, doctrine, personnel quality, education and training, and exercises. The PLAN capacity and capability building plans are in line with its anti-access/ area-denial (A2/AD) strategy in near-seas region, largely aimed at U.S. forces intervening in Taiwan. Additional missions for China's navy include conducting maritime security (including anti-piracy) operations, evacuating Chinese nationals from foreign countries when necessary, and conducting HA/DR operations.⁴

Naval Shipbuilding and Modernization. The US DOD report released in September 2020 confirms that PRC today has the largest navy in the world, with an overall battle force of approximately 350 ships and submarines including over 130 major surface combatants. In comparison, the Indian Navy is about 41 major surface combatants as of early 2020. China is likely to have 400 battle force ships by 2025, and 425 by 2030 (China does not release its projected naval force-levels or planned ship procurements and

planned laying off of ships). China is the world's largest ship-producing nation by tonnage and is increasing its shipbuilding capacity for all naval classes.⁵ China has a robust shipbuilding infrastructure, with over 20 yards involved in naval ship construction over the last decade, and dozens of commercial shipyards.⁶ All Chinese naval construction shipyards also build commercial ships which provides profits and supports shipyard design and infrastructure development while reducing costs for naval construction. Chinese ship design bureaus and shipyards use modern software, design practices, machinery, and ship construction methods comparable to those used at U.S. shipyards.

Ship Building Capacity. China is capable of building any type of surface warship. Nuclear submarines are solely produced at Huludao Shipyard and typically undergo two to four years of outfitting and sea-trials before becoming operational. Since 2006, eight nuclear submarines have become operational, for an average of one every 15 months. China's naval nuclear capability is expanding to include nuclear-powered surface vessels. China had claimed that by 2020 these nuclear surface vessels will include floating nuclear power plants (FNPP) to provide power to remote military and civilian areas. The capability will also enable nuclear-powered ice breakers, which China contracted in 2016, and possibly other surface nuclear vessels such as nuclear powered aircraft carriers.⁷

China's naval ships, aircraft, and weapons are modern, capable and comparable to those of Western navies. Until recently, China was focused more on increasing the modernity and capability of its naval platforms than on increasing ship and aircraft numbers. Although the overall inventory has remained relatively constant, PLAN is rapidly replacing older warships with larger, multi-mission ships having advanced anti-ship, anti-air, and anti-submarine weapons and sensors and C2 facilities. Now, however, the number of ships is increasing. PLAN is engaged in a robust shipbuilding

and modernization program that includes submarines, surface combatants, amphibious warfare ships, aircraft carriers, and auxiliary ships as well as developing and fielding advanced weapons, sensors, and command and control capabilities.

Indigenous Technical Capability. Almost all weapons and sensors on Chinese naval ships are produced in-country, and China no longer relies on Russia or other countries for any significant naval ship systems. Chinese naval ship design and material quality is in many cases comparable to USN ships, and China is quickly closing the gap in any areas of deficiency.⁸ China is rapidly building capabilities to increase its reach beyond its near-seas to support its overseas interests, to assert its status as a world power and play a larger role in the security mechanisms, and for furthering global goods. Some marquee developments indicating PLAN's increasing global power projection capability are:

- PLAN commissioned its first domestically built aircraft carrier in late 2019. It expects its second domestically built aircraft carrier to enter service by 2023.
- In 2019, the first amphibious assault ship (Type 075 Yushen class LHA), a large deck amphibious warship was launched.
- In the near-term, PLAN will have the capability to conduct long-range precision strikes against land targets from its submarine and surface combatants using land-attack cruise missiles.

Capabilities for Counter Intervention, Power Projection and Overseas Basing. The PLA is developing the capabilities and operational concepts to conduct offensive operations in the Pacific and Indian Oceans, and in some cases, globally. The PRC is seeking to establish a more robust overseas logistics and basing infrastructure to allow the PLA to project

and sustain military power at greater distances. Beyond its current base in Djibouti, the PRC is considering additional overseas military logistics facilities to support naval, air, and ground forces. It has likely considered locations in Myanmar, Thailand, Singapore, Indonesia, Pakistan, Sri Lanka, United Arab Emirates, Kenya, Seychelles, Tanzania, Angola, and Tajikistan. Some of these will provide flexibility to support offensive operations in the Indian Ocean region.⁹

Factors Affecting Chinese Military Deployment Beyond SCS/ECS, Western Pacific

China's Maritime Disputes in SCS.¹⁰ China has multiple maritime territorial disputes in the SCS and ECS and has occupied certain disputed islands and shoals in the region. The disputes include those with Vietnam over *Paracel Islands*, with Vietnam, Philippines, Malaysia, and Brunei over *Spratly Islands*, with Taiwan and Philippines over *Scarborough Shoal* and with Japan over *Senkaku Islands*. China identifies assertion and defense of its maritime territorial claims in the SCS and ECS, and the strengthening of its position in the SCS, as important national goals. To achieve these goals, China appears to be employing an integrated strategy that includes diplomatic, informational, economic, military, paramilitary/law enforcement, and civilian elements.

The US Factor - Conflicting Interests of China and US in the SCS and ECS. US does not see the maritime disputes in the SCS and ECS including the Spratly and Paracel Islands as being of any little importance. The SCS and ECS engage US interests for a variety of strategic, political, and economic reasons, including the following:-

- U.S. Regional Allies and Partners, and U.S. Regional Security Architecture.¹¹ The SCS, ECS, and Yellow Sea border three U.S. treaty allies - Japan, South Korea, and the Philippines. Most

recently, there have been concerns over the possibility of a crisis or conflict between China and Japan over the Senkaku Islands. In addition, the region surrounds Taiwan with which US has certain security-related policies. Also, the SCS borders Southeast Asian nations that are current, emerging, or potential U.S. partner countries, such as Singapore, Vietnam, and Indonesia.

- US appears to be averse to the following actions that China may institute in the region:- ¹²
 - Control fishing operations and oil and gas exploration activities in the SCS.
 - Coerce, intimidate, other countries bordering SCS.
 - Announce and enforce an air defense identification zone (ADIZ) over the SCS.
 - Announce and enforce a maritime exclusion zone (i.e., a blockade) around Taiwan.
 - Facilitate the projection of Chinese military presence and political influence further into the Western Pacific.
 - Help achieve a broader goal of becoming a regional hegemon in its part of Eurasia.

In addition, China is involved in a dispute with the US over whether China has a right under international law to regulate the activities of foreign military forces operating within China's perceived EEZ. Position of the US is that while UNCLOS gives coastal states the right to regulate economic activities (such as fishing and oil exploration) within their EEZs, it does not give coastal states the right to regulate foreign military

activities in the parts of their EEZs beyond their 12 nautical miles(nm) territorial waters. This issue appears to be at the heart of incidents between Chinese and U.S. ships and aircraft in international waters and airspace dating back at least to 2001.¹³

Freedom of Navigation Program of the USN. The US supports the principle of freedom of the seas, meaning the rights, freedoms, and uses of the sea and airspace guaranteed to all nations in international law. Its forces routinely conduct freedom of navigation (FON) assertions throughout the world regardless of maritime claims. US believes that China's maritime claims are unfounded, unlawful and unreasonable. It is aligned with the July 12, 2016, award of the arbitral tribunal that was constituted under UNCLOS whence the tribunal rejected China's maritime claims as having no basis in international law. US rejects any claim by China to waters beyond a 12 nm territorial sea derived from islands it claims and stands with its Southeast Asian allies and partners in protecting their sovereign rights to off-shore resources. It rejects any forceful imposition by China. By way of the FON Program, USN ships challenge excessive maritime claims under international law by carrying out assertive operations over freedom of use of sea and airspace. On November 19, 2019, Secretary of Defense Mark Esper reportedly stated that the US had conducted "more freedom of navigation operations in the past year or so than we have in the past 20-plus years." An April 29, 2020, statement from the U.S. Navy 7th Fleet stated that US will continue to demonstrate its resolve to uphold rights and freedoms to coastal states under the UNCLOS.

Probable US Goals in a Strategic Competition with China¹⁴

Observers conclude that US should compete strategically with China in SCS and ECS for the US goals of:-

- Fulfilling security commitments to Japan and the Philippines;

- Maintaining US-led security architecture in the Western Pacific;
- Maintaining a regional balance of power favourable to US and its allies and partners;
- Defending freedom of the seas;
- Preventing China from becoming a regional hegemon in East Asia, and preventing it from controlling or dominating the ECS or SCS.

Risk of United States Being Drawn into a Crisis or Conflict.¹⁵ Observers have indicated that maritime territorial disputes in the ECS and SCS could lead to a crisis or conflict between China and a neighbouring country such as Japan or the Philippines, and that the US could be drawn into such a crisis or conflict as a result of obligations it has under bilateral security treaties with these countries. Conflicting interests of China and US in the SCS and ECS, priority attached by China to unceasingly claim sites in the region, and the accompanying requirement of deploying requisite military forces there will ensure that China engages and deploys its military capabilities and forces predominantly in that region. That will severely hamper its ability to deploy forces beyond these seas and into the Indian Ocean region.

Other Factors

Protection of Military Outposts in Spratly Islands and Military Base in Djibouti. Since early 2018, PRC-occupied Spratly Island outposts have been equipped with advanced anti-ship and anti-aircraft missile systems and military jamming equipment. These are used regularly to support naval and coast guard operations in the SCS. The three larger outposts at Fiery Cross, Subi, and the Mischief Reefs have aviation facilities, port facilities, fixed- weapons positions, administrative buildings and communications

facilities. Its four smaller outposts in the Spratly Islands—Johnson, Gaven, Hughes, and Cuarteron Reefs - have administrative buildings, weapons stations, and sensor emplacements. These outposts provide airfields, berthing areas, and resupply facilities that allow China to maintain a more flexible and persistent military and para-military presence in the area. A substantial force would be dedicated for protection of these posts as also the military base at Djibouti which would be critical for logistics and re-supply support for its forces deployed for far seas operations.

Protection of Deployed Carrier. China's carrier task forces would primarily be deployed in the SCS against intervening external forces particularly the US Carriers. A substantial PLAN task force would be engaged with the carrier for its protection.

ISR and Targeting Capability in the Indian Ocean Region (IOR). The existing capability of PLAN to build up sufficient ISR effort and to undertake detection, identification, tracking and targeting may limit effective deployment of forces in the IOR.

Logistics/Long Supply Chain Support. Long logistics supply chain for sustaining forces beyond the near seas and securing these would be a major limitation for deploying forces.

PLA Navy's Major Combatants and Weapon Systems

This part covers China's principal combatants and weapon systems that can be brought to bear upon Indian Forces beyond the Western Pacific and into the Indian Ocean.

Missiles¹⁶

Anti-Ship Ballistic Missiles (ASBM) – 'Carrier Killer'. China reportedly fields two types of land-based, road-mobile anti-ship

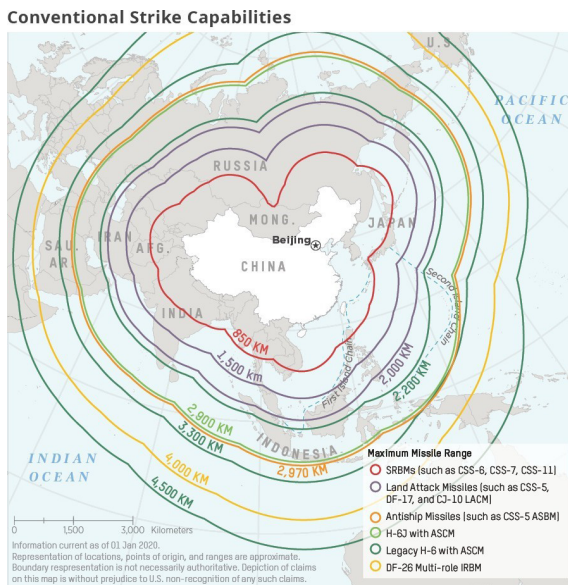
ballistic missile (ASBM) capable of hitting ships at sea and capable of conventional and nuclear precision strikes against ground targets as well as conventional strikes against naval targets. These missiles are under the control of the Rocket Force rather than the PLAN. These missiles, in combination with broad-area maritime surveillance and targeting systems, would permit China to attack aircraft carriers and other ships. No other navy fields such missiles and these ASBMs have been referred to as 'game-changing' weapons. In April 2018, Michael Griffin, the U.S. Under Secretary of Defense for Research and Engineering, admitted to the Senate Armed Services Committee that "We do not have defenses against those systems."¹⁷

Dong Feng (DF-21D)/ (CSS-5 Mod 5) ASBM. A variant of medium range ballistic missile (MRBM), 1,500 km (910 nm) range, it is fitted with a manoeuvrable re-entry vehicle (MARV) warhead, and is claimed to be capable of rapidly reloading in the field. It can conduct long-range precision strikes against ships, including aircraft carriers, out to the Western Pacific from mainland China.

DF-26. This is a road-mobile, nuclear and conventional capable intermedium range ballistic missile IRBM with maximum range of about 4,000 km (2,160 nm) and can even strike the key US base at Guam. PLA has approximately 200 launchers and more than 200 missiles. The multirole DF-26 is designed to rapidly swap conventional and nuclear warheads and is capable of conducting precision strikes in the Western Pacific, the Indian Ocean, and the SCS from mainland China. Therefore, Beijing can apparently target vessels out to the First Island Chain with the DF-21D and out to the Second Island Chain in the Western Pacific as well as into the Indian Ocean with the DF-26.¹⁸

China reportedly is also developing hypersonic glide vehicles that, if

incorporated into Chinese ASBMs, could make Chinese ASBMs difficult to intercept. No country has yet operationally deployed these missiles. The combination of speed, manoeuvrability and altitude of these missiles makes them difficult to track and intercept. They travel at over Mach 5 speeds. Two classes of these weapons are being developed: *hypersonic glide vehicles* and *cruise missiles*. Both types could carry conventional or nuclear payloads. A hypersonic glide vehicle is boosted on a rocket to 40-100 km above the earth to glide along the upper atmosphere unpowered to the target. With control surfaces, it can steer an unpredictable course and manoeuvre sharply as it approaches impact. These follow a much flatter and lower trajectory than the high, arching path of ballistic missiles making them much harder to detect early with radar, giving missile defenses less time to respond. Hypersonic cruise missiles, meanwhile, have internal engines. But unlike regular cruise missiles, they travel far faster and higher. In August 2018, China successfully tested the XINGKONG-2 (Starry Sky-2), which it publicly described as a hypersonic wave rider vehicle.¹⁹



(Diagram Source: US DoD Annual Report - Military and Security Developments - China, 21 Aug 2020)

As per Chinese military literature Search and tracking for the strikes will be provided by new radar satellites, airborne early warning and control (AEW&C) aircraft, and long-range over-the-horizon radar as well as less conventional means such as large numbers of fishing boats.²⁰ It is believed that China would collate data from satellites, unmanned aerial vehicles (UAVs), active and passive radar, in addition to ships at sea, to provide targeting for ASBMs. Analysts however point out that there is still some doubt about whether China has mastered the know-how that would allow a ‘carrier killer’ ballistic missile to detect, track and hit a moving target far from the Chinese coast.²¹ The US Department of Defence (DoD) Annual Report on China’s Military Power-2020 states that “in conjunction with reconnaissance satellites, the PLAN’s expanding network of sky wave and surface wave over-the-horizon (OTH) systems provide warning and targeting capabilities at extended distances from China to support long-range precision strikes, including employment of ASBMs.”

Anti-Ship Cruise Missiles (ASCM). China deploys a wide range of advanced ASCMs and its inventory of ASCMs includes both Russian and Chinese designs. The relatively long ranges of certain Chinese ASCMs have led to concerns among some observers that even the US Navy is not moving quickly enough to arm its ships with similarly ranged ASCMs. Haddick, adviser to the U.S. Special Operations Command, has stated that “China’s anti-ship missile capability exceeds those of the United States in terms of range, speed and sensor performance.”²² Some advanced and highly capable ones include:-

- **YJ-82 (C-802) and YJ 83(C-802A).** The YJ-82/ C-802 unveiled in 1989, can be fired from ship, submarine, and aircraft (YJ-82K/ C-802K) and has a reported range of 120 km, whereas the upgraded YJ-83 (export name C-802A) revealed in 2012 has a 180 km range. The YJ-83 family of missiles is the most numerous,

equipping the majority of China's ships as well as multiple aircraft. The PLANAF employs the 250 km range YJ-83K (C-802AK) Air to Surface Missile (ASM) on its JH-7 and H-6G aircraft. The C-802KD is the air launched land-attack missile. At the Zhuhai Airshow in 2010, China revealed the CM-802AKG (YJ-83KH) air-launched ASM with an IR seeker with a claimed range of 280 km.

- **YJ-63 (C-803).** YJ-82's successor is a supersonic missile with a 280-300 km range, as fitted to the Type 052C destroyer.
- **YJ-18/ 18A Eagle Strike CH-SS-NX-13 ASCM.** The latest and most capable missile, is the YJ-18 ASCM long range ASCM a supersonic terminal phase. It has a range of 540km/ 290nm. It is a torpedo tube launched ASCM likely replaced the older YJ-82 on Song, Yuan, and Shang class submarines. China claims its new Luyang III (Type 52D) class destroyers and Renhai class cruisers have a vertically launched variant of the YJ-18.
- **YJ-12.** China has also developed the long range (450km) supersonic YJ-12 ASCM for the H-6 bomber. Upgrades to two of the Sovremenny class destroyers allow them to fire a ship-to-ship variant called the YJ-12A. It also has a ground launched anti-ship variant YJ-12B. China has deployed the YJ-12B to several outposts in the SCS. CM-302 (export version of YJ-12) is also being marketed for export as a supersonic ASCM with land attack capability.
- **YJ-62 (C-602).** China has also outfitted several ships with YJ-62 ASCMs including the Type 052C destroyer. It has an advertised range of 280 km, with suggestions that the domestic YJ-62 version has a range up to 400 km. The YJ-62C is deployed in

road-mobile coastal defence batteries to augment its coastal defence units. In 2012, China displayed the CM-602G LACM (land-attack cruise missile) variant with 290 km range, with it featuring a datalink allowing the operator to change the target.

- **Russian SS-N-22 Sunburn, Moskit.** Russian SS-N-22 Sunburn supersonic ASCM (240 km range) are carried on two Russian-built Sovremenny class destroyers. Upgrades to two of these allow them to fire the YJ-12A.
- **Russian SS-N-27B Sizzler, Klub.** China also employs the Russian SS-N-27B Sizzler, Klub (180 km range) on eight Russian built Kilo class submarines.
- **Shipborne LACM/ Land Attack Capability.** The US DOD/ Pentagon Annual Report of 2020 states that “in the near-term, the PLAN will have the capability to conduct long-range precision strikes against land targets from its submarine and surface combatants using land-attack cruise missiles, notably enhancing the PRC’s global power projection capabilities”. It also states that the latest “Renhai class cruisers will likely be able to launch ASBMs and LACMs once these weapons are available.” This indicates that ship launched ASBMs and LACMs are not yet in service in the PLAN. PLAN is reportedly developing a shipborne variant of the land-based Dong Hai-10 (DH-10) LACM to provide its first strategic land-attack capability. It reportedly has a similar configuration to the existing YJ-62 and YJ-83 launchers on PLAN surface combatants and could minimise the need for structural modifications and allow for interchangeable launchers of a mix of LACMs and ASCMs.

- **New Anti-Submarine Missile.** China has likely developed a new, previously unseen, anti-submarine weapon, i.e., a torpedo-carrying missile, to further enhance its ASW capabilities. An air-breathing turbojet/turbofan engine powers the missile. It appears to be consistent with the standard 324 mm lightweight torpedo.

The PLAN continues to extend its strike range with more domestically produced ship, submarine, and aircraft-deployed ASCMs with the exception of a few legacy missiles imported from Russia in the 1990s and early 2000s.

Shipborne Anti Ship Cruise Missiles (ASCMs). The Renhai class cruiser (Type 055) will carry a large load out of weapons including ASCMs, Surface to Air Missiles (SAM), and Anti-Submarine Weapons (ASW) along with likely LACMs and ASBMs (when those become operational). Multiple large PLAN warships with some form of ASBMs (even if range-limited by shipboard size restrictions) among their weapons load-outs would be a serious challenge for any force. The PLAN's frigates and light frigates, as well as modernized older combatants, carry variants of the YJ-83/YJ83J ASCM (97 nm, 180 km), while newer surface combatants such as the Luyang II class destroyers are fitted with the YJ-62 (215 nm, 400 km). The Luyang III class DDGs and the Renhai class cruisers will be fitted with a variant of China's newest ASCM, the YJ-18A (290 nm, 537 km). A few modernized destroyers have been retrofitted with the supersonic YJ-12A ASCM (250 nm). Eight of the PLAN's 12 Kilo-class SSs (diesel-electric submarines) are equipped with the Russian SS-N-27 ASCM (120-nm, 222-km). The PRC's Song class SS, Yuan class SSP (AIP powered submarine), and Shang class SSN will field the PLAN's newest domestic submarine-launched YJ-18 and its variants, which constitute an improvement over the SS-N-27 ASCM.

Land Attack Missiles. Introduction of land-attack versions of cruise missiles onboard PLAN ships and submarines is impending. In the coming years, the PLAN will probably field LACMs on its newer cruisers and destroyers and developmental Type 093B SSN. The PLAN could retrofit its older surface combatants and submarines with land-attack capabilities as well. The addition of land-attack capabilities to the PLAN's surface combatants and submarines would provide the PLA with flexible long-range strike options. This would allow the PRC to hold land targets at risk beyond the Indo-Pacific region.

Maritime Strike Aircraft. PLAN Aviation has begun operating the H-6J, a maritime strike version of the H-6K with six weapons pylons for ASCMs. This aircraft carries six supersonic long-range YJ-12 ASCMs and can attack warships out to the Second Island Chain – significantly extending PLAN Aviation's reach. In 2019, the PLAAF revealed H-6N, a derivative of the H-6K that can carry either a drone or an air-launched ballistic missile (ALBM) that may be nuclear-capable. The H-6N's air-to-air refuelling capability also provides it greater reach over other H-6 variants that are not refuellable in air.

Submarines²³

PLAN Submarines. China has been steadily modernizing its submarine force. As a result, the speed of growth of the submarine force has slowed and is likely to grow to 70 submarines by 2020 with substantially more-capable submarines replacing older units. Most of its submarines are now built to relatively modern Chinese and Russian designs. It is projected that China's submarine force by 2030 will grow from a total of 68 boats (6 SSBNs, 7 SSNs, and 55 SSs) in 2020 to 76 boats (8 SSBNs, 13 SSNs, and 55 SSs). China's newest SS design is the Yuan-Class (Type 039), its newest SSN Class is the Shang-Class (Type 093), and its newest SSBN

Class is the Jin (Type 094) Class SSBN.²⁴

PLAN Submarine Weapons. China's submarines are armed with one or more of ASCMs, wire-guided and wake-homing torpedoes, and mines. Jin-Class SSBN is expected to be armed with 12 JL-2 nuclear-armed SLBMs. China reportedly is developing a new SLBM, called the JL-3 having estimated range of 7400km.

Submarines in Service

6 Type 094 Jin Class SSBN. Four SSBNs were commissioned in 2007, 2010, 2012, 2015 and possibly two more subsequently. These 8000 ton vessels are expected to be armed with 12 JL-2 SLBMs (7,500 km/ 4000nm), 6-12 YU-3/ YU-4 torpedoes (533 mm, 15km/ 8.1 nm, active/ passive homing). The JL-2 was developed from the land-based DF-31 inter-continental ballistic missile (ICBM) and successful tests were reported in January 2012. There is speculation from Kanwa Asian Defence that a follow-on JL-2A missile will be able to carry multiple warheads. The boats are based in Yulin-Yalongwan on Hainan island. The first deterrence patrol may have been conducted in 2016. Data released by US Office of Naval Intelligence (ONI) in 2009 showed that the acoustic performance of the Class is less than Russia's late second-generation Delta-III SSBN. China's next-generation Type 096 SSBN, which will likely begin construction in the 2020s, will reportedly carry a new type of SLBM. The PLAN is expected to operate the Type 094 and Type 096 SSBNs concurrently and could have up to eight SSBNs by 2030. The current range limitations of the JL-2 will require the Jin Class SSBNs to operate in areas north and east of Hawaii if China seeks to target the east coast of the United States.

3 Han Class (Type 091/091G) - SSN. These three SSNs were commissioned in the period 1984 to 1990. They displace 4,572 tons (surfaced) and can do speed of 12 kn surfaced/ 26 kn dived. The missile fit

includes *SSM YJ-82* (C-801A), range 40 km, speed 0.9 Mach. Torpedoes are the same as in Jin Class. All Han Class are based in the North Sea Fleet at Jianggezhuang. They are relatively noisy and can be readily detected by modern passive sonars and have limited operational utility.

4 (+2) Shang Class (Type 093/093A) – SSN. These four SSNs were commissioned in 2006, 2007, and 2016. They displace 6096 tons dived and do speeds upto 30 knots dived. Their missile and torpedo fit is the same as for the Han Class SSN. In addition, the newer Shangs may carry Sub launched version of YJ-18 ASCM and a naval version of the DF-10 Long-Range Land-Attack Cruise Missile (LRCM). According to the ONI, the Type 093's acoustic performance is not much better than the Type 091's, and it is significantly inferior to current US and Russian SSNs. The new Type 093 is likely to include the use of new technology to reduce internal radiated noise, plus improved sonar and combat systems. Two boats are based in North Sea Fleet at Jianggezhuang and two in Yalong (South). Two more (Type 093B) are under construction. By the mid-2020s, China will likely build the Type 093B, a new Shang Class variant, guided-missile nuclear attack submarine. This new Shang Class variant will enhance the PLAN's anti-surface warfare capability and could provide a clandestine land-attack option if equipped with land-attack cruise missiles (LACMs).

Type 095 SSN - (Future). As follow-on to the Shang Class, ONI predicts the Type 095 will show a dramatic improvement, approaching acoustic performance of third-generation Russian Akula-I SSNs. This will still be significantly inferior to the latest Russian Yassen-Class SSN, and presumably, to the US Virginia-Class SSN. Type 095 boats, which the ONI Classifies as an SSGN missile firing platform, are also expected to be armed with Chinese-designed LACMs as well as torpedoes and ASCM. PLAN is expected to build five Type 095s.

14+4 Type 039A/B/C Yuan Class - SS. Fourteen boats were commissioned from 2006 to 2016 and four are under construction. A Class of 25 is expected. The boat appears to have an indigenous Chinese design and has some features of the Russian Kilo Class. Later boats are fitted with flank array. Weapon are the same as in Shang Class (minus the YJ-18 ASCM or DF 10 Land attack cruise missile being claimed on the newer Shang Class). The submarine is believed to have been incorporated with Stirling-type air independent propulsion AIP. The PLAN has also developed fuel cells based on German technology, similar in performance to those used in the Type 212 SSKs. The PLA may also have access to Russian fuel cell or Walther-type AIP technology. This new submarine is believed to have benefited from Russian technologies associated with the new Rubin Amur-Class conventional submarine. MTU diesel engines were in use till now and these will be licence-built in China for Type 041. 10 boats are based in the East Sea Fleet and two in the North Sea Fleet.

13 Song Class Type 039/ 039G - SSG (2001- 2006):

- Displacement 2250 tons submerged, length 74.9 m, Speed 15 kn surfaced 22 dived.
- Reverse engineered diesels and French design sonars.
- Missiles - YJ-82, 40 km, 0.9 mach.
- 6-21 Torpedos, 533 mm, mix of YU-4 (SAET) passive homing to 15 km and Yu- 3 (SET-65E) active/ passive homing 15 km, (Yu-6 wake homing torpedoes may also be fitted).
- Also has a flank array passive search low frequency intercept sonar.
- Eight boats are based in the North Sea Fleet, 3 in East and 2 in South.

- In October 2014, a submarine had been deployed in the Indian Ocean in support of counter piracy operations. Song Class was subsequently observed during port visit to Colombo.

YJ-18 ASCM on New Submarines. The latest and most capable YJ-18 ASCM with a range of 290 nm and a supersonic terminal phase is likely to replace the older YJ-82 on Song, Yuan, and Shang Class submarines.

01 Type 032 Qing-Class SS. The boat, commissioned in 2012, displaces 3797 tons surfaced. Its principal role appears to be serve as ballistic missile trial platform. Possibly for next generation JL-3 SLBM or for extended range or higher payload/ multiple warhead variant of JL2 SLBM. The boat may also be used for trial firing of submarine launched LACM and anti-ship missiles. The vessel operates from North Sea Fleet test base at Xiaopingdao.

12 Kilo Class – SSK (1994-98, 2004-2005):

- Length 76.2m, Displacement 2,362 tons surfaced, Speed 10 kn surfaced; 17 dived.
- Missiles - SLCM – **Russian Klub SS-N-27 (on 9 boats)** 180 km at 0.7 Mach (cruise) and 2.5 Mach (attack).
- 18, 533 mm torpedoes, mix of TEST 71; wire-guided; active/passive 15 km at 40 kt; and 53-65; passive wake homing to 19 km at 45 kn.
- First eight are based at Xiangshan in the East Sea Fleet and the remainder at Yulin in the South Sea Fleet.
- **14 Ming Class Type 035 SS (1987-2002):**

- Displacement 1609 tons, length 76 m, Speed 15 kn surfaced, 18 kn dived.
- No missiles.
- Torpedoes 8-21, 533mm, YU-4(SAET-50), passive homing 15 km, 30 kn.
- Basing – eight based on South Sea Fleet, six in East Sea Fleet.
- Older boats being decommissioned as Yuan numbers increase.
- Two refurbished boats sold to Bangladesh in 2016.

New Auxiliary Class (SSA). In September 2010, the first and only unit of a new auxiliary Class (SSA) was launched. Images suggest the boat is one-third larger than the Yuan-Class SSK. Principal role may be to replace the long-serving Golf-Class SSA built in the 1960s, which has been serving as a trials platform for the JL-2 missile.

Table: Comparison of Submarine Force Levels

PLA Navy (Numbers/Class/Vintage)	Role	Indian Navy (Numbers/Class/Vintage)
6-Jin (Type 094) 2007, 2010, 2012, 2015, 2x2020	SSBN	1 Arihant Class SSBN – 2016
3-Han (Type 091/0910) 1984-1990	SSN	1 Akula Class (Chakra) - 2012 (On Lease)
4-Shang (Type 093) 2006, 2007, 2016	SSN	
14-Yuan (Type 039A/B/C) 2006	SSK	3 + 3 Kalvari Class - 2017

PLA Navy (Numbers/Class/Vintage)	Role	Indian Navy (Numbers/Class/ Vintage)
13-Song (Type 039/039G) 1999	SSK	4 Shishumar Class – 1986, 1992, 1994
12-Kilo (Project 877EKM) – 1995	SSK	9 Sindhughosh (Kilo 877EKM) Class - 1986- 1991, 2000
14-Ming (Type 035) 1971	SSK	
1-Golf (Type 031) 1966	Auxiliary	
1-Qing (Type 032) 2010	Auxiliary	
1-U/I midget Class 2014	Auxiliary	
1-Rescue submarine (LR7) 2009	Auxiliary	1-Nireekshak, Submarine rescue ship
2-DSRV 1986	Auxiliary	2-DSRV 2019

PLAN Submarine Capabilities

Although the PLAN submarines numbers have not changed much over the past few years, the older submarines have been rapidly replaced with newer, indigenous submarines resulting in a very new and modern force with advanced capabilities. The PLAN presently has six SSBNs, seven SSNs, and 55 SSs their inventory. The 14 Yuan Class (with 4 more under construction) and the 13 Song Class SSKs are likely to have their YJ-82 anti-ship missiles replaced with their latest YJ-18 ASCM (290 nm). These missiles will also be fitted on their Shang Class SSNs. The Chinese now have a robust indigenous submarine building capability. Although the

Yuan Class reportedly have an AIP, the Chinese may still be lacking in this capability and are pursuing collaboration with the Russians. The Chinese have however developed the capability of manufacturing advanced fuel cells for their submarines adding to their enhanced capability.

Build Rate. Since 2006, eight nuclear submarines have achieved operational capability, an average of one every 15 months. The construction of diesel-powered submarines has consistently averaged 2.5 vessels annually. China is placing greater emphasis on replacing its older units as it modernises its submarine fleet.

Aircraft Carriers²⁵

PLA Navy Aircraft Carriers. China's first aircraft carrier *Liaoning* (Type 001), entered service in 2012. The second aircraft carrier *Shandong*, Type 001A (first fully indigenous carrier, modified design of Liaoning), entered service in December 2019. The third carrier, Type 002, (second domestically built carrier) is under construction and expected to enter service by 2023, with additional carriers to follow. China's fourth carrier, reportedly Type 002 design, may begin construction in early 2021. All these are conventionally powered platforms. Liaoning (Type 001) and Shandong (Type 001A) launch aircraft using a ski ramp while the Type 002 onwards will have electromagnetic catapults. Catapults can give aircraft a range/ payload capability greater than those launched using a ski ramp. Plans to build a fifth carrier (nuclear-powered), Type 003, have been put on hold due to budgetary and technical considerations. It is speculated that China may eventually field a force of four to six aircraft carriers. Observers expect that it will be some time before China masters carrier-based aircraft operations on a substantial scale.

1 Liaoning, Type 001 (2012):

- Displacement 60,000 tons, *Length 305 m, Speed 30 kn.*
- Refurbished ex-Ukrainian aircraft carrier purchased in 1998 as an unfinished ship.
- Reportedly can accommodate 30 fixed-wing aircraft and helicopters (Z-18J AEW helicopters, Z-18F ASW helicopters, Z-9C SAR helicopters), including 24 fighters.
- China's "starter" carrier is being used for pilot training and consolidating concepts of carrier based operations.
- Base at Yuchi, 50 km south of Qingdao.

1 Shandong, Type 001A (2019):

- Displacement is 66,000 to 70,000 tons.
- Modified Liaoning design to embark a larger airwing of 40 aircraft including 36 fighters.

Type 002 Aircraft Carrier (Future):

- May displace 80,000 tons to 85,000 tons.
- Two ships of the Class are planned.
- Will have electromagnetic catapults instead of ski ramp.
- Construction of the first Type 002 (3rd Chinese carrier) reportedly started in November 2018. Final assembly process expected to be completed in 2021.

- Keel-laying for second Type 002 (fourth carrier) reportedly commenced.

Type 003 Carrier (Future):

- Displacement 90,000 to 100,000 tons.
- Nuclear powered.
- Electromagnetic catapults.
- Currently plans to build Type 003 design are on hold.

Carrier-Based J-15 Multirole Fighter (7 prototypes + 14 operational).

China's primary carrier-based fighter aircraft is the J-15 or Flying Shark derived from the Russian Su-33 Flanker design that operates from ski ramp rather than catapults. New CATOBAR variant is under development. PLANAF is likely to acquire 48 J-15s. These may however be replaced by navalised versions of China's fifth-generation fighter aircraft J-20 stealth fighter and/ or a variant of FC-31 stealth fighter for catapult-equipped Chinese carriers. China reportedly is also developing a carrier-based stealth drone aircraft. Details of J-15 include:-

- Apparently same Class as Boeing F/A-18C Hornet.
- Operational Speed – 1240 kn, Range 1600 nm/ 2963 km
- Engine – Currently Russian AL31F engines. In the long term will be fitted with Indigenous Taihang WS10A engine.
- Missiles - YJ-62.
- Buddy-stole fuel pods to extend the range of the aircraft.

- **Carrier Wing Helicopters.** The Carrier wing includes the following helicopters:-
- AEW Helicopters – nine Russian Ka-31 AEW helicopters, four Z-18J AEW helicopters
- ASW Helicopters - six Z-18F ASW helicopters carrying four 32 sonobuoys, four 324 mm torpedoes or light ASM.
- SAR helicopters - Two Z-9C.

Airborne Early Warning and Control Aircraft (AEW&C Aircraft).

PLANAF is developing a fixed wing AEW&C aircraft, based on Xian Y-7 transport, similar to the US E2 Hawkeye. This cannot be employed from Liaoning as it does not have catapult.

Employment of PLA Navy Aircraft Carriers

Taiwan is within range of land-based Chinese aircraft therefore carriers are not considered critical in a Taiwan scenarios. It is believed that China is acquiring carriers primarily for other kinds of operations, and to demonstrate China's status as a leading regional power and major world power. Chinese aircraft carriers could be used for power-projection operations, particularly in scenarios that do not involve opposing U.S. forces as they do not possess comparable power projection capabilities. These carriers could also be used for HA/DR operations, maritime security operations (such as antipiracy operations), and non-combatant evacuation operations (NEOs).

It is speculated that China may eventually field a force of four to six aircraft carriers. The first four (Type 001 and Type 002) would have conventional propulsion while the Type 003 is likely to have nuclear propulsion and weigh 90,000 tons or more. The first two carriers may be

comparable in capability with Indian carriers however the PLAN is still in the process of consolidating concepts of carrier based operations. As PLAN gains experience and more Carriers are inducted, PLAN Carrier operations capability would see an upward trajectory with very capable fifth generation fighters planned for future carriers.

China's next generation of carriers, including one that began construction in 2018, will have greater endurance and a catapult launch system capable of launching various types of special mission fixed-wing aircraft for missions such as early warning, EW, and ASW. These improvements would increase the striking power of a potential carrier battle group when deployed to areas beyond China's immediate periphery.

Indian Carriers. With *Vikramaditya*, the Indian Navy's aircraft carrier capability is adequate for providing limited sea control in Western or Eastern IOR. It can undertake operations for providing protection to India's island territories and provide deterrence for any PLAN warships/task forces operating in IOR without air cover. IAC1 is expected to get commissioned in 2023 and details of the plans for the third carrier (IAC 2) are not yet known.²⁶ With two carriers, Indian Navy will be able to field effectively only one aircraft carrier. With three aircraft carriers in the inventory it would be feasible to field one each aircraft carrier in the Western and Eastern Indian ocean.

Shore Based Aircraft of the PLANAF

Fighters. JH-7/ JH-7A, J-11BH/ J-11BSH and Su-30 Mk2 are shore based fighters of the PLANAF and provide anti ship and anti air capabilities. J-16 is Indigenous copy of the Su-30 MK2 and large enough to carry YJ-83 and YJ-62 missiles. These entered service with PLAAF in 2014, and could find its way into the PLANAF.

Bombers. China's bomber force is composed of variants of H-6 aircraft, domestically produced versions of the Soviet Tu-16 (Badger) bomber. Despite the relative age of its bomber force, China has worked to maintain and enhance the operational effectiveness of these aircraft:

- H-6G supports maritime missions and carries up to four YJ-83K/YJ-12 anti ship cruise missiles.
- H-6K, a modernized variant can carry six LACMs, giving the PLA a long-range standoff precision strike capability that can range Guam from home airfields in mainland China.
- More recently, H-6J has been introduced, a maritime strike version of the H-6K with six ASCMs (supersonic long-range YJ-12 ASCMs) and can attack warships within the Second Island Chain – significantly extending PLAN Aviation's reach. These will supplement the existing H-6G bombers capable of carrying up to four YJ-12 ASCMs.
- PLAAF is seeking to extend its power projection capability with the development of a new stealth strategic bomber.
- **Patrol Aircraft.** Y-8/ KJ-200 MPAs are small number of modified Shaanxi Y-8 transports (Russian AN-12 derivatives). There is a possibility of a Y-8Q (GX6) MPA for ASW role inducted into the North Sea Fleet. Its range is expected to be less than 6680 km, the range of base Y-8 and is expected to carry torpedoes, anti ship missiles, sonobuoys.

Unmanned Vehicles:

- *BZK-005*, 'Soaring Dragon' functions in an ISR role as a naval reconnaissance UAV. It is rumoured to have an electro optical, IR,

synthetic aperture radar, and SIGINT sensors as well as satellite communication systems allowing for real-time data transmission capability. It is unclear whether the PLA will equip this UAV with weapons, but such a modification would be possible.

- *Lijian*, 'Sharp Sword' stealth UAV is at the flight-testing stage and is designed for tracking and reconnaissance. The development of this UAV places China as the third country to possess stealth drone capabilities.
- *Long-range UAVs*. China is developing Long-range UAVs to conduct long-endurance ISR at extended distances from the Chinese mainland, enabling over-the-horizon targeting by long-range ASCMs and DF-21D ASBMs. Such UAVs would be useful for detecting, locating, tracking, and targeting high-value fixed and mobile targets.

The PLA Navy and PLANAF maritime strike aircraft and MPAs are currently limited in their role to SCS and East China sea for reasons of reach, ISR capability, AD cover, and targeting capability beyond SCS and Western Pacific. Their role is largely in support of A2/ AD function.

Major Surface Combatants²⁷

Since early 1990s the PLAN has sustained a robust shipbuilding program producing numerous new Classes of indigenously built surface combatants including new guided-missile cruisers, guided-missile destroyers, corvettes and a new Class of missile-armed patrol craft. China is also upgrading its older surface combatants with new weapons and other equipment. These assets will significantly upgrade the PLAN's air defence, anti-ship, and anti-submarine capabilities and will be critical as the PLAN expands its operations beyond the range of the PLA's shore-based air defence systems.

China's technological advancement in naval design is now comparable with that of other modern navies.

Destroyers

1(+7) Type 055 Renhai Class Cruiser/ Large Destroyer – (Fourth Generation Vessels)- 2019. China's latest warship, a cruiser (or large destroyer), Renhai-Class or Type 055 reportedly displaces between 10,000 and 13,000 tons and is 185m in length. As a comparison, U.S. Navy's Ticonderoga Class cruisers and Arleigh Burke Class destroyers (aka Aegis cruisers and destroyers) displace about 10,100 tons and 9,300 tons, respectively, while Zumwalt (DDG-1000) Class destroyers displace about 15,600 tons. The first Type 055 ship was commissioned in January 2020, and the eighth ship was launched 30 Aug 20. Reports suggest that the ship is equipped with 128 vertically launched missiles. It is claimed that the ship will be capable of firing YJ-100 long-range ASCM from these cells as well as anti-submarine and air defence missiles. Details of the YJ-100 remain speculative, although it may be a derivative of the CJ-10 LACM. This reflects a major increase over the 7,500-tonne Type 052D Luyang III Class destroyers, which are equipped with 64 VLS cells. These ships will likely be able to launch ASBMs and LACMs once these weapons are available. The Renhai CG will be China's premier carrier escort for blue-water operations.

13(+12) Type 052D/ Luyang III Class Destroyer (Third Generation Indigenous Vessels), (2014, 2x2015, 2016, 2x2017). China's most recent destroyer, Luyang III (Type 052D) Class is the third iteration of the Luyang-Class destroyer. It displaces 7,500 tons, has a range of 4,500 nm and can attain a top speed of 30 kt. The principal features include development of the Type 346 Dragon Eye phased-array E/F-band 3D radar and vertical launch missile systems (64 cells) capable of housing

SAMs, SSMs, and anti-submarine missiles. Type 052D carries the YJ-18, China's newest ASCM with a range of 540km and a supersonic terminal phase. These ships are being compared to the Aegis Class destroyers of the USN. The 25th ship was launched on 30 Aug 20. At present the PLAN likely fields 13 Luyang III destroyers in service; however in four to five years PLAN will likely field 40 aegis-type destroyers. They can carry up to two Harbin Z-9 or Kamov Ka-28 helicopters.

6 Type 052C Luyang II Class (2x2005, 2x2013, 2014, 2015). The Type 052C destroyer features PLAN's first phased-array radar, a new Chinese-developed vertically launched SAM and a new YJ-62 Anti-Ship Missile (400 km). A special feature of the third destroyer onwards is the use of indigenous gas turbines using DA80 technology transferred from Ukraine 10 years ago. These destroyers are important for accompanying China's future aircraft carriers. It will only be a matter of time before the PLAN Aegis-type fleet surpasses that of Japan in terms of quantity.

4 Sovremenny Class – Russian Built (1999, 2000, 2006, 2008):

- SSM – 8 SS-N-22 Sunburn (Moskit 3M-80E), 240km, 3 mach/4.5 mach for attack, sea skimmer.
- SAM – 44 SA-N-7 Gadfly (Uragan), 25km
- Torpedo – 4, 533mm.
- Two of the ships have been upgraded with Chinese-built equipment i.e SAM HHQ-16 and SSM YJ-12.

02 Type 052B Luyang I Class, 2004:

- CODOG, 2 Gas turbine from Ukraine, 2 MTU Diesels.
- SSM 16x YJ-83, 180 km at 0.9 mach

- SAM – 48 x SA-N-7B Grizzly (Shtil 1) 35 km.
- Torpedo – 6x324 mm, Type 7424, Yu-7 active/ passive homing 14 km, 42 kn.

2 Type 051C Luzhou Class (2006, 2007):

- Last steam turbine ship of PLAN.
- SSM – 8, YJ -83, 180km, 0.9 mach.
- SAM – 48 SA-N-20 Gargoyle (Rif M), 150km.
- Torpedo – 6, 324mm Yu-7 active/ passive homing 14kn, 42kn.
- Helicopters –Platform only.

1 Type 051B Luhai Class, (1999)

- 2 Steam turbines.
- SSM – 8 YJ-12, 500 km at Mach 2-4.
- SAM – HHQ-16, 32-Cell VLS, semi active radar homing 40km.
- Torpedo – 6x324 mm, Type 7424, Yu-7, 14 km, 42 kn.
- Sonar – Additionally towed sonar suite (passive line and active VDS) possibly H/SJG-311.

2 Type 052 Luhu Class (1994, 1996):

- Equipment and systems from US and Europe.
- CODOG 2 LM 2500/ Ukraine GTs and 2 MTU diesels.

- SSM – 16 YJ -83, 180 km, 0.9 mach.
- SAM – 32 HHQ-7 (Crotale) LOS guidance 13 km.
- Torpedo – 6, 324 mm Yu-7 active/ passive homing 14 kn/ 7.6 nm, 42 kn
- Sonar -Towed array.

Frigates

30 Type 054A Jiangkai II Class Frigate (4x2008, 3x2010, 2x2011, 4x2012, 3x2013, 3x2015, 4x2014, 2x2017, 3x2018). China since early 1990s has also put into service multiple new Classes of indigenously built frigates, the most recent of which is the Jiangkai II (Type 054A) Class which displaces about 4,000 tons. 30 Type 054As entered service between 2008 and 2019, and no additional Type 054As are currently under construction. Production is likely to switch to next generation frigate Type 054B. PLAN's sizable force of frigates has expanded in capability now that the mainstay Type 054A frigate is being produced in two shipyards. The Type 054A is the first ship to be equipped with a version of the new vertical-launched 9M317ME Shtil-1, with a bay for 32 missiles. The SSM is the YJ-83. ASW weapons include the CY-5/ Yu-8, Rocket assisted ASW weapon, fired from VLS, missile range 30km at 600 kn/1111 kmph. It is the Blue water workhorse of the PLAN deployed for counter piracy operations, overseas port visits, evacuating civilians from Aden in 2015.

2 Type 054 Jiangkai I Class Frigate (2005, 2006):

- Equipment and systems from US and Europe.
- Machinery – CODAD 4 SEMT Pielstick diesels.

- SSM – 8 x YJ -83, 180km, 0.9 mach.
- SAM – 32 HHQ-7 (Crotale) LOS guidance 13km.
- Torpedo – 6, 324mm Yu-7 active/ passive homing 14km, 42kn.

10 Type 053H3 Jiangwei II Class Frigate (1998, 4x1999, 2000, 2x2002, 2004, 2005):

- Machinery –2 Diesels.
- SSM – 8 x YJ -83, 180km, 0.9 mach.
- SAM – 8 HHQ-7 LOS guidance 13km or 8 HHQ-10 IR homing 9km.
- No torpedo.
- Four modified designs built for Pakistan (Sword Class).

12 Type 053H1 Jianghu I and 1 Type 053H2 Jianghu III Class Frigate (1970-1996):

- Machinery –Diesel.
- SSM – 4 HY2- 95km/ 8 x YJ -83, 180km.
- No SAM, No Torpedo, No Helicopters.
- Four sold to Thailand (1991-92), three to Bangladesh (1998, 2014), two to Myanmar in 2012.

Trimaran hull frigate (Future). At the IDEX show in Abu Dhabi in February 2017, the China Shipbuilding Trading Corporation (CSSC) revealed a new trimaran-hulled frigate concept, being built for the PLAN.

The vessel uses diesel engines that power a marine electric propulsion system that in turn drive three pump jets. Although lighter than China's Type 054A frigate, the trimaran carries a similar armament.

Corvettes/ Fast Attack Crafts

50+ Type 056/ 056A Jiangdao Class Corvettes – 2013-2020. China is also building a new type of corvette (light frigate) called the Jiangdao Class/ Type 056 (1,500 tons). It is the culmination of PLAN's desire to build a less expensive corvette-size surface combatant to better enforce territorial and EEZ claims in the East and SCSs. These are mainly aimed at littoral warfare, especially for operations in the East and SCS. Production is underway at a high annual rate at four shipyards and these ships will replace older Classes like Jianghu (Type 053) frigates, Houxin (Type 036G) attack craft. The first was commissioned in 2013. As of February 2020, more than 50 had entered service and another 15 were under construction. In June 2020, it was reported that China that month had commissioned its ninth Type 056 of 2020. Total of 70 vessels are expected to make up the Class. Some of these vessels are Type 056A ASW variants with a VDS. It is the equivalent of a Western off-shore patrol vessel (OPV) and it contributes to China's green-water navy protecting the nation's EEZ. The Type 056 is armed with an eight-cell launcher for HQ-10 short-range SAMs, 4 C-802/C-803 SSMs OR 4 ASROC type torpedo carrying missile body (possibly Yu-8), 76 mm main gun, and two 30 mm cannons. Flight deck supports a Z-9 helicopter (no hangar).

Type 022 Houbei Class. In 2004 the PLAN introduced new Class of stealthy, high-speed fast attack craft (FAC) called the Type 022, or Houbei Class. The PLAN built 60 of these till 2009 to replace older crafts. It is a wave-piercing catamaran hull design derived from Australian technology. It has a low-profile water-jet propulsion and 8 SSM (C802/ YJ 83).

Table: Comparison of PLAN and Indian Navy Surface Forces

PLA Navy	Indian Navy
Destroyers	
<p>(1+7) Type 055 Renhai Class Cruiser/ Large Destroyer – (Fourth Generation Vessels)-2019</p> <ul style="list-style-type: none"> • Displacement 10,000-13,000 tons • length 185m • 128 cell vertically launcher system missiles for a mix of land attack, anti ship and SAM • ASCM YJ-100 (details speculative) • YJ -18A ASCM- 540km • ASBMs and LACMs once available • Helicopters –2 HAIG Z-8/ Z-18 	<p>No Indian equivalent with comparable capabilities</p>
<p>13(+12) Type 052D/ Luyang III Class Destroyer (Third Generation Indigenous Vessels), (2014, 2x2015, 2016, 2x2017)</p> <ul style="list-style-type: none"> • Displacement 7,500 tons • VLS (64 cells) for SAMs, SSMs, and anti-submarine missiles. • YJ-18 ASCM- 540km, Torpedo – 6x324mm • Comparable to USN Aegis Class destroyers • Total 40 ships planned • Helicopters – Z-9C/D or Kamov Ka-28/31 	<p>No Indian equivalent with comparable capabilities</p>
<p>6 Type 052C Luyang II Class (2x2005, 2x2013, 2014, 2015)</p> <ul style="list-style-type: none"> • Displacement 7112 tons, Length 155m • First phased-array radar • 8xYJ-62 Anti Ship Missile, 280km • Torpedo – 6x324mm • Third destroyer onwards -indigenous gas turbines • Helicopters – Z-9C/D or Kamov Ka-28 	<p>3 Kolkata (P15A) Class Destroyers (2014, 2015, 2016)</p> <p>{+ 4 Visakhapatnam Class (P15B) } under construction</p> <ul style="list-style-type: none"> • Displacement 7292 tons, Length 164m • Machinery – COGAG • SSM – 16x Brahmos 290km • 32 MRSAM Barak 8/NG, 70km (Joint DRDO-Rafael-IAI Israel development) • Torpedoes – 4, 533mm • ATAS • Helo – 2 Seaking 42B / Dhruv

<p>4 Sovremenny Class, – Russian Built (1999, 2000, 2006, 2008)</p> <ul style="list-style-type: none"> • Displacement 8067 tons, Length 156m • 8 SSM, SS-N-22 Sunburn, 240km • Torpedo – 4, 533mm • Upgrade-Being fitted with Chinese equipment i.e SAM HHQ-16 and SSM YJ-12 (500km) • Helicopters –Kamov Ka-28 	<p>3 Delhi (P15) Class Destroyers (1997, 1999, 2001)</p> <ul style="list-style-type: none"> • SSM – 16x Uran, 130km, 0.9 mach • SAM- 48 x Kashmir 25km • Torpedoes – 5, 533mm torpedoes mix of SET 65E anti-submarine, 15km, 40kn, 53-65KE passive wake homing 19km, 45kn, • Sonar –HUMVAD/ HUMSA hull mounted MF, ATAS on D 62 • Helo – 2 Seaking 42B / Dhruv • Will be upgraded to Brahmos
<p>02 Type 052B Luyang I Class (2004)</p> <ul style="list-style-type: none"> • Displacement 7112 tons, Length 155m • 16x YJ-83, 180km • Torpedo – 6x324 • Helicopters – Z-9C/D or Kamov Ka-28 	<p>5 Rajput (Kashin) Class Destroyers (1980, 1982, 1983, 1986, 1988)</p> <ul style="list-style-type: none"> • Displacement 5054 tons, Length – 146m • COGAG – 4 Ukraine GTs • SSM – 4 x P21, 83km/ 45NM, 0.9Mach (on 3 ships), 8x Brahmos 290km, 2.6 Mach, (on 2 ships) • SAM- 44 RZ-61 Command guidance, 31.5km, 16 Barak 1, 10km
<p>2 Type 051C Luzhou Class (2006, 2007)</p> <ul style="list-style-type: none"> • Displacement 7112 tons, Length 155m • Last steam turbine ship • SSM – 8x YJ -83, 180km • Torpedo – 6, 324mm • Helicopters –Platform only 	
<p>1 Type 051B Luhai Class, (1999)</p> <ul style="list-style-type: none"> • Displacement 6096 tons, Length 154m • 2 Steam turbines • SSM – 8x YJ-12, 500km • Torpedo – 6x324mm • Helicopters – Z-9C/D or Kamov Ka-28 	

<p>2 Type 052 Luhu Class (1994, 1996)</p> <ul style="list-style-type: none"> • Displacement 4674 tons, Length 144m • Equipment and systems from US and Europe • SSM – 16x YJ -83, 180km • Torpedo – 6, 324mm • Helicopters –2 Harbin Zhi-9C Haitun 	
<p>Frigates</p>	
<p>30 Type 054A Jiangkai II Class Frigate (4x2008, 3x2010, 2x2011, 4x2012, 3x2013, 3x2015, 4x2014, 2x2017, 3x2018)</p> <ul style="list-style-type: none"> • Displacement 3963 tons, Length 134m • SSM - 8 x YJ-83, 180km • Helicopters –1 HAIG Z-9C 	<p>6+4 Talwar Class Frigates (2x2003, 2004, 2x2012, 2013)</p> <ul style="list-style-type: none"> • Displacement 4100 tons, Length – 125m • Machinery – COGAG • SSM – 8 Klub N (on 3 ships) 220km, 0.8 mach cruise, 2.9 mach attack, 8 Brahmos (on 3 ships) • SAM- 24, Kashmir, 25km • Torpedoes – 4, 533mm torpedoes • Sonar –HUMSA hull mounted MF, ATAS on D 62 • Helo – 1 Ka 28/ Ka 31 / Dhruv • Will be upgraded to Brahmos
	<p>3 Shivalik (Project 17) Class Frigates (2010, 2011, 2012)</p> <ul style="list-style-type: none"> • Displacement 6299 tons, Length 143m • CODOG, 2 LM2500 GTs and Two SEMT Pielstick diesels • SSM – 8 Klub N, 220km, 0.8 mach cruise, 2.9 mach attack, FCS Aparna • SAM- 24 Shtil, 25km, 32 Barak 1, 10km • Torpedoes – 6, 324mm, ILAS • Sonar –HUMSA hull mounted, Thales ATAS <p>Helicopter – 1 Skg 42 B / Dhruv</p>

<p>2 Type 054 Jiangkai I Class Frigate (2005, 2006)</p> <ul style="list-style-type: none"> • Displacement 3963 tons, Length 132m • Equipment and systems from US and Europe • SSM – 8 x YJ -83, 180km • Torpedo – 6, 324mm • Helicopters –1 HAIG Z-9C 	<p>3 Brahmaputra Class Frigates (2000, 2004, 2005)</p> <ul style="list-style-type: none"> • Steam turbines • SSM – 16 Uran 130km • SAM- 24 Barak 1, 10km • Torpedoes – 6, 324mm, ILAS • Sonar –HUMSA <p>Helo – 2 Skg 42 B</p> <p>1 Godavari Class Frigate (1988)</p> <ul style="list-style-type: none"> • Steam turbines • SSM – 4 P21 83km • SAM- 24 Barak 1, 10km • Torpedoes – 6, 324mm, ILAS • Sonar –APSOH <p>Helo – 2 Skg 42 B</p>
<p>10 Type 053H3 Jiangwei II Class Frigate (1998, 4x1999, 2000, 2x2002, 2004, 2005)</p> <ul style="list-style-type: none"> • Displacement 2286 tons, Length 111m • Diesel engines • SSM – 8 x YJ -83, 180km • No torpedo • Helicopters –1 HAIG Z-9C 	
<p>12 Type 053H1 Jianghu I and 1 Type 053H2 Jianghu III Class Frigate (1970-1996)</p> <ul style="list-style-type: none"> • Displacement 1729, Length 103m • Machinery –Diesel • SSM – 4 HY2-95KM • No SAM, No Torpedo, • No Helicopters 	
<p>Corvettes/ Fast Attack Craft</p>	
<p>50+ Type 056/ 056A Jiangdao Class Corvettes (2013-2020)</p> <ul style="list-style-type: none"> • Displacement 1500 tons, Length 89m • Total 70 expected 	<p>3 +1(8) Kamorta Class Corvettes (2014, 2016, 2017)</p> <ul style="list-style-type: none"> • Displacement 3150 tons, Length 109 m

<ul style="list-style-type: none"> • 4 C-802/C-803 SSMs (anti ship variant) • 4 ASROC type torpedo carrying missile body (ASW variant) • Helicopters –Platform for 1 HAIG Z-9C/D 	<ul style="list-style-type: none"> • CODAD 4 Pielstick diesels • SSM – Nil , • SAM- 16 Barak 1, 10km/ 5.5nm fitted for • Torpedoes – 4 533mm, Eurotorp MU-90 torpedoes • Sonar –HUMSA • 12 ships of the Class are planned <p>4 Kora Class (Project 25A) Corvettes (1998, 2x2001, 2004)</p> <ul style="list-style-type: none"> • Displacement 1483 tons, Length 91m, • 2 Pielstick/ Kirloskar diesels • SSM – 16 Uran 130km, FCS – Garpun • Helo – Deck only for Chetak/ Dhruv <p>4 Khukri Class (Project 25) Corvettes (1989, 1990, 2x1991)</p> <ul style="list-style-type: none"> • Displacement 1446 tons, Length 91m • 2 Pielstick/ Kirloskar diesels • SSM – 4 P21, 83km at 0.9 mach • Helo – Deck only for Chetak/ Dhruv
<p>60 Type 022 Houbei Class</p> <ul style="list-style-type: none"> • Wave-piercing catamaran hull design • Water-jet propulsion • 8 SSM YJ 83 	<p>8 Veer/ Prabal Class Missile Boats (1989- 2002)</p> <ul style="list-style-type: none"> • SSM – 4 P21, 83km (on 6 ships) 16 Uran 130km (on 2 ships)

Overview

China now indigenously manufactures all its warships and onboard systems including all weapons and sensors and have also demonstrated a robust shipbuilding capacity. The new generation destroyers and frigates of the PLAN i.e Type 055 Renhai Class cruiser, Type 52 destroyers and Type 054 frigates are capable of being deployed beyond the regional waters of

PRC and posing a challenge to Indian forces. These platforms make up the bulk of the PLAN inventory and their numbers are consistently on the rise. How many of these platforms would be sparable or deployed outside the PRC's near-sea region in the event of a conflict, would largely depend on the situation prevailing in the SCS/ ECS region and PRC's threat perception vis-à-vis US naval forces and her allies deployed in the region.

Amphibious/ Expeditionary Capability - PLA Navy²⁸

7Type071orYuzhao Class Amphibious Assault Ship (LPD Equivalent).

China's new Yuzhao or Type 071 amphibious ships displace 19,855 tons. Seven ships are already in service and the eighth is expected to be commissioned in 2020. The ships can accommodate four Z-8 helicopters, armoured fighting vehicles, boats, landing craft, and 600 to 800 troops. These ships are a key component of PLA Navy's plan to improve its sealift and power projection capabilities. They will allow for the initiation of beyond-the-horizon amphibious operations and the ability to participate in distant soft-power military diplomacy, peacekeeping, and humanitarian operations. Each ship can accommodate four locally built Type 726 Yuyi-Class hovercraft.

1 Type 075 Yushen Class Amphibious Assault Ship (LHA/LHD Equivalent).

In July/ August 2020, the first of a new type of amphibious assault ship the Type 075 Yushen Class commenced sea trials. It has an estimated displacement of 30,000 to 40,000 tons and is comparable with US Navy LHA/ LHD-type amphibious assault ships. As of August 2020, two more are under construction. The Type 075 is significantly larger than both the Australian Canberra Class (27,500 tons) and the South Korea Dokdo Class(18,800 tons). The Type 075 is expected to carry between 28 and 30 helicopters. Its complement of Marines is not

known but is likely to be much larger than that of the Type 071, which can carry between 600 and 800 troops, as well as their ground vehicles and other equipment. China had launched its first Type 075, LHD, within five months, after the first pictures emerged of its keel under construction underscoring the significant modernization and expansion underway within the PLAN. The new LHDs will dramatically transform PLAN's ability to conduct amphibious operations, including against Taiwan, especially if grouped together with other existing assets, such as the Type 071s and the massive Russian-made *Zubr* Class hovercrafts. The expanded amphibious capabilities of Type 075 could have significant impacts on China's military presence throughout the Asia-Pacific region, including its ability to assert its claims over disputed areas, such as the SCS. Coupled with a growing number of bases in foreign countries, they could be valuable for exerting Chinese influence further abroad.

Hospital Ship. China also operates one of the largest hospital ships anywhere in the world, its lone Type 920, which offers a relatively unique capability that could be essential for supporting expeditionary operations further from the Chinese mainland.

Type 076 Catapult-Equipped Amphibious Assault Ship. Possibly, China might be planning to build a new Class of amphibious assault ships, the Type 076 of around 40,000 tons that would be equipped with electro-magnetic catapults to support fixed-wing aircraft operations like a mini aircraft carrier. It is more likely that this catapult would support lighter drones. The new notional vessel which has yet to be officially approved by Beijing would also operate up to 30 helicopters plus UAVs.²⁹

PLA Navy Marine Corps. The PLAN's land combat arm is the PLA Navy Marine Corps (PLANMC). Its roles and missions principally include defending PLA bases in mainland China, the SCS and abroad, conducting

amphibious operations to seize and defend small reef and island outposts, and conducting non-war military activities (NWMA). Its focus has grown to include expeditionary operations beyond the First Island Chain. The PLANMC previously consisted of two brigades (approximately 10,000 personnel). In 2019, the PLANMC has enlarged to eight brigades with modernized capabilities for joint expeditionary operations—including operations beyond the First Island Chain. PLANMC is equipping its four new manoeuvre brigades in addition to the existing brigades, a Special Operations Force (SOF) brigade, and an aviation (helicopter) brigade. The PLANMC maintains a presence at the PRC's first overseas military base in Djibouti that extends Beijing's military reach and strategic influence in Africa and the Middle East.

PLAN's Auxiliary Ships³⁰

The PLAN now has a sizable force of highly capable logistical replenishment ships to support long-distance, long-duration deployments. In keeping with its ambition of becoming a credible blue-water navy, it continues to build a large number of seagoing auxiliary and support ships, including intelligence collection ships (AGIs), ocean surveillance ships (AGOSs), fleet replenishment oilers (AORs), hospital ships, submarine salvage and rescue ships, and various other specialized units.

8x Fuchi (Type 903) Class Large Replenishment Ships. Since 2004, PLAN has inducted eight new Fuchi (Type 903)-Class large replenishment ships (23,369 tons full load) capable of transferring liquid and solid stores.

2x Type 901 Fuyu Class Combat Support ship. PLAN has commissioned two Type 901 Combat Support ship in 2017 and 2018. The ships displace 48,000 tonnes and are built specifically to support aircraft carrier operations. These ships can replenish fuel, aviation fuel, stores, supplies, spares and air launched weapons.

Donghaidao Transport Ship. A semi-submersible ship, about 176 m long and an estimated full displacement of 20,000 tonnes with a cut-down submersible hull section with a crane at either end was commissioned into the South Sea Fleet in 2016. Apart from transporting hovercraft, it can be used as a forward operating base and/or repair centre.

Surface, Intelligence Collection Ships. PLAN commissioned its sixth Dongdiao-Class (Type 815) intelligence collection/ missile range instrumentation ship in January 2017. Six vessels are currently in service. China is also building a catamaran-type twin hull vessel which appears to be an ocean surveillance vessel similar to the USN's USNS Impeccable. The ship's hull is based on a design by Germany-based shipbuilders, Abeking & Rasmussen, to minimise vessel's signature. The vessel will most probably be deployed to conduct acoustic surveys and collect maritime data on behalf of the PLAN.

PLAN Research Vessels. The PLAN commissioned its fourth Type 909 Dahua-Class research ship in 2014. The Dahua Class is employed as a test platform for new naval weapons, sensors, and helicopters for China's fleet of major surface combatants. The induction of a fourth vessel could indicate that the PLAN is increasing efforts to evaluate or certify new weapons or systems to support the service's current rate of fleet expansion.

Table: Primary Blue Water Replenishment Ships and Auxiliaries

Major PLA Navy Auxiliaries/ Numbers, tonnage and Vintage	Role	Indian Navy Replenishment Ships
2 Fuyu (Type 901)- 48,000 tons-2017, 2018	Combat Support Ship	-
8 Fuchi (Type 903/903A)- 23,369 tons 2004, 2013-2016	Replenishment ship	2 Deepak Class- 27,941 tons , Fincantieri, Italy, 2011

		2 Aditya Class 24,994 tons, GRSE, Kolkata, 2000
1 Fusu (Type 908)- 37,594 tons, Russian, 1996	Replenishment ship	1 Jyoti Class 36,476 tons, Russian, 1996
2 Fuqing (Type 905)- 22,099 tons-1979, 1981	Replenishment ship	
1 Anwei (Type 920)- 14,200 tons, 2008	Hospital ship	
3 Dalao (Type 926)- 2010	Submarine rescue ship	
4 Dalang (Type 922)-1986	Submarine support ship	
3 Dajiang (Type 925)- 1979, 1980, 1982	Submarine support ship	
6 (+2) Dongdiao (Type 815)- 2010, 2015, 2017, 2018	Intelligence collection	
1 Donghaidao-20,000 tons, 2015	Transport ship	
4 Type 909 Dahua-Class 1997, 2012, 2014	Weapon trial ship	

Although PLAN operates primarily in China's home waters, Chinese navy ships are conducting increasing numbers of operations away from China's home waters, including the waters of the Western Pacific, the Indian Ocean, and the waters surrounding Europe, including the Mediterranean Sea and the Baltic Sea. A 23 Nov 2019, DOD news report quoted Admiral Philip Davidson, the Commander of the U.S. Indo-Pacific Command, as stating that China's navy had conducted more global naval deployments in the past 30 months than it had in the previous 30 years. Many of China's

long-distance naval deployments have been for making diplomatic port calls, some of them have been for other purposes, including training exercises and antipiracy operations in waters off Somalia. China has been conducting antipiracy operations in waters off Somalia since December 2008 via a succession of more than 30 rotationally deployed naval escort task forces. China's distant naval operations are supported in part by China's military base in Djibouti, which China officially opened in August 2017 as its first overseas military base.³¹

According to Chinese and Western military commentators, in the future, China's marines could play a critical role in manning its military bases around the world, including territories seized in the SCS. Marines and their armoured vehicles have already been deployed in the overseas base at Djibouti, according to Pentagon reports. Marines are also deployed on task forces PLAN sends on anti-piracy missions to the Gulf of Aden. Ian Easton, the senior director of the Project 2049 Institute, an Arlington, Virginia-based security research group has stated that "Ten years from now, China is almost certainly going to have marine units deployed at locations all over the world. The Chinese Communist Party's ambitions are global. Its interests are global. It plans to send military units wherever its global strategic interests require."³²

Comparison of Numbers – Major Combatants

As per the US Department of Defense Annual report of 2020 on China's military power "China is the top ship-producing nation in the world by tonnage. Their shipbuilding capacity is a huge advantage for them in a protracted conflict." With the ability to turn out ships faster than any other country, China could build up its force or rapidly replace its naval losses in a conflict. Gen. David Berger, the Commandant of US Marine Corps, assessed recently, "They have multiple shipyards building every

Class of ship, which is not really the case in the US Navy. It gives them some extra capacity if they need to do a build-up or ramp-up the navy or rebuild the navy in a conflict where they lose a lot of ships.”³³

About 65 percent of the increase since 2005 in the number of Chinese navy ships shown in the table below resulted from increases in missile-armed fast patrol craft starting in 2009 (35 ships) and corvettes starting in 2014 (42 ships). These are the smaller surface combatants. 60 new *Houbei* (Type 022) fast attack craft were constructed between 2004 and 2009 and 25 older fast attack craft were retired. 42 *Jingdao* (Type 056) corvettes have been inducted during the period. Most of the remaining increase since 2005 in the number of Chinese navy ships is accounted for by increases in destroyers (12 ships), frigates (11 ships), and amphibious ships (17 ships). Most of the increase in frigates occurred in the earlier years; the number of frigates has changed little since 2011. It is pertinent to note that even if the total number of ships has changed little over time, the percentage of more-capable modern designs ships has been growing over time.³⁴ The Indian Navy meanwhile is planning to field a fleet of 198 ships and submarines by 2027 as per its Maritime Capability Perspective Plan approved by the DAC in 2012.³⁵

Table: Comparison of Induction of Surface Combatants

Ship Types	PLA NAVY			INDIAN NAVY		
	2005	2019	Change since 2005	2005	2019	Change since 2005
Ballistic missile submarines	1	4	+3	-	1	+1
Nuclear-powered attack submarines	6	6	0	-	1	+1
Diesel attack submarines	51	50	-1	16	14	-2
Aircraft carriers	0	1	+1	1	1	-
Destroyers	21	33	+12	8	11	+3
Frigates	43	54	+11	9	13	+4
Corvettes	0	42	+42	8	11	+3

Missile-armed coastal patrol craft	51	86	+35	13	8	
Amphibious ships: LSTs and LPDs	20	37	+17	2	6	
Amphibious ships: LSMs	23	22	-1	6	3	-3
Total PLAN ships (does not include other types, such as auxiliary and support ships)	216	335	+119	63	69	+7
Total Indian Navy ships (does not include other types, such as auxiliary and support ships)	63	69	+7			

Space Capabilities ³⁶

The PRC designated space as a new domain of warfare in its 2015 Defense White Paper, and expects space to play an important role in future conflicts by enabling long-range precision strikes and in denying other militaries the use of overhead C4ISR systems.

The Department of the PLA Strategic Support Force (SSF), a theatre command-level organization operates at least eight bases, including those that launch and operate satellites vital to China's overhead C4ISR architecture. The SSF also runs tracking, telemetry, and command stations in Namibia, Pakistan, and Argentina. PLA today owns and operates approximately half of China's more than 120 reconnaissance and remote sensing satellites, most of which could support situational awareness of regional rivals, while monitoring, tracking, and targeting an adversary's forces. China seeks to enhance C2 in joint operations and establish a real-time surveillance, reconnaissance, and warning system. It is increasing the number and capabilities of its space systems, including various communications and intelligence satellites as well as the Beidou navigation satellite system.

PLAN Organisation ³⁷

The PLAN organizes, mans, trains, and equips the PLA's naval and naval aviation forces, as well as the PLA Marine Corps (PLANMC). In 2019, the PLAN continued to implement structural reforms that began in 2015. The PLAN headquarters and conduct of operations was brought under the purview of the PLA's joint Theatre Commands while the PLAN headquarters remains focussed on organizing, manning, training, and equipping naval forces.

The PLAN consists of three fleets with subordinate submarine flotillas, surface ship flotillas, aviation brigades, and naval bases. The PLAN's North Sea Fleet is subordinate to the Northern Theatre Command, the East Sea Fleet is subordinate to the Eastern Theatre Command, and the South Sea Fleet is subordinate to the Southern Theatre Command.

China in 2016 revamped the PLA structure to facilitate joint operations, improving PLA's joint combat readiness, adopting new operational concepts, and expanding the PRC's overseas military footprint. PLA was reorganized from seven army-based Military Regions to five joint Theatre Commands (Eastern, Southern, Western, Northern and Central Theatre Commands), which is still a work in progress and implementation of reforms continue. Each theatre command receives directions from the CMC and has operational authority over most PLA conventional forces within its theatre. They are responsible for operations within their area of responsibility. The strategic directions for the theatre commands are as follows:-

- Eastern Theatre Command – Taiwan, Japan, East China Sea;
- Southern Theatre Command – SCS, Southeast Asia;

- Western Theatre Command – India, South Asia, Central Asia, “counterterrorism” in Xinjiang and Tibet;
- Northern Theatre Command – Korean Peninsula, Russia;
- Central Theatre Command – Capital defense; surge support to other theatres.

Major Naval Units



(Source – Department of Defense, Annual Report to Congress, Military and Security Developments Involving the People’s Republic of China, 21 Aug 2020)

Eastern Theatre Command. In 2019, the Eastern Theatre Command focused on a series of training and exercises to improve joint operations and combat readiness, organizing exercises and drills consisting of long-distance training and mobilization, aerial combat, and live-fire training. PLA units located within the Eastern Theatre Command include three

group armies, a naval fleet, two marine brigades, two Air Force bases, and one missile base. The Eastern Theatre Command also likely commands all China Coast Guard (CCG) and maritime militia ships while conducting Senkakus-related operations.

Southern Theatre Command. The area of responsibility of the Southern Theatre Command covers mainland and maritime Southeast Asia, including the SCS. This implies that the Southern Theatre is responsible for securing the SCS, supporting the Eastern Theatre Command in any invasion of Taiwan, responding to territorial disputes, and assuring the security of the SLOCs vital to China's global ambitions. PLA units in this Theatre include two group armies, a naval fleet, two marine brigades, two Air Force bases, and two Rocket Force bases. The Southern Theatre Command is responsible for responding to US freedom of navigation operations in the SCS, and likely commands all CCG and maritime militia ships conducting operations within China's claimed 'nine-dash line'. China's first-domestically produced aircraft carrier is very likely based here in Yulin Naval.

Northern Theatre Command. The area of responsibility of the Northern Theatre Command includes China's borders with Mongolia and Russia, North Korea, and the Yellow Sea. PLA units located within the Northern Theatre Command are three group armies, a naval fleet, two marine brigades, two air bases, and one PLARF base. The Northern Theatre Navy would be responsible primarily for protecting the sea approaches to northern China, but could provide mission-critical assets to support other fleets.

Fleet Organisation.³⁸ The PLAN has three Fleet Headquarters (North Sea, East Sea, and South Sea). Each fleet has several subordinate bases and can be categorized into three types: support bases, test bases, and

training bases. Fleet aviation is at the same level. Of the total number of bases, the following eight are considered major support bases:-

- North Sea Fleet (NSF) – Qingdao, Lushun
- East Sea Fleet (ESF) – Zhoushan, Fujian, Shanghai
- South Sea Fleet (SSF) – Guangzhou, Yulin, Zhanjiang

The PLAN also has other specialized bases as follows:-

- Huludao is a missile test, R&D, and training base.
- Jianggezhuang is for the PLAN's nuclear powered submarines only.
- A third type of base, which may or may not be co-located with a support base, is a training base or training centre

Overview

The PLAN is continuously evolving into a global force and expanding its operational reach beyond East Asia and Western Pacific as it acquires larger and more advanced platforms and gains more experience operating in distant waters. PLAN's new and modernized surface and subsurface platforms are capable of operations beyond PRC's land-based defences. Its future aircraft carriers will have greater endurance and catapult launch system enabling longer operating ranges of various types of fixed-wing aircraft including EW&C and ASW. Once operational and integrated into their operational philosophy they will be able to provide air defence cover beyond coastal and shipboard missile systems enabling PLAN's power projection capabilities in distant regions.

PLAN's highly advanced and domestically produced ship, submarine, and aircraft launched ASCMs extend its strike range. The PLAN's pursuit of sea-based land-attack systems will further increase its power projection capability. Furthermore, the PLAN now has a sizable force of highly capable logistical replenishment ships to support long-distance, long-duration deployments, including two new Fuyu Class fast combat support ships built specifically to support aircraft carrier operations. PLAN's expanding fleet of large modern amphibious warships will enable it to conduct a wide range of expeditionary operations wherever PRC interests are threatened. PLAN also deploys high-capability intelligence collection ships in various parts of the world for gathering intelligence.

At present the PLAAF and PLAN Aviation have limited power projection capability. The new airfields and hangars on outposts in the SCS in the future could extend their reach even into the Indian Ocean. China's efforts to set up more bases after the one in Djibouti would enable global air operations. The PRC is seeking to establish more overseas logistics and basing infrastructure to allow PLA project and sustain military power at greater distances. Beyond the base at Djibouti, PRC is likely considering logistics facilities at Myanmar, Thailand, Singapore, Indonesia, Pakistan, Sri Lanka, United Arab Emirates, Kenya, Seychelles, Tanzania, Angola, and Tajikistan. The PRC has probably already made overtures to Namibia, Vanuatu, and the Solomon Islands. The focus is on areas along the SLOCs from China to the Strait of Hormuz, Africa, and the Pacific Islands.

Some areas where China is striving to improve include:-

- Production of reliable high-performance aircraft engines for which it largely relies on Western and Russian engines.
- Deep-water anti-submarine warfare capabilities diminish dramatically with distance and complexity of coordination.

Whether the PLA can collect accurate targeting information and pass it to launch platforms in time for successful strikes in sea areas beyond the first island chain is unclear.

- Reconnaissance, surveillance, command, control, and communications systems at the strategic, operational, and tactical levels to provide high-fidelity over-the-horizon information for targeting by ASCMs launched by surface and sub-surface launch platforms.

Some observers have brought out Chinese relative weaknesses and limitations in areas of personnel quality, training, operational experience, joint operations with other military services, and potential support from allies and partners.

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PART - III

OVERVIEW OF MILITARY REFORMS IN THE PLA AND IMPLICATION FOR PLA NAVY

Introduction

Section 1 of this part provides an overview of major reforms in the PLA during the Xi Jinping era that commenced in 2014, the objectives behind these reforms, as to how the objectives are being addressed, likely obstacles, and key changes anticipated in the future for consolidating these reforms. Section 2 highlights the impact of Military Reforms on PLA Navy.

SECTION 1 –REFORMS IN THE PLA

Erstwhile PLA/ Central Military Commission (CMC) Setup

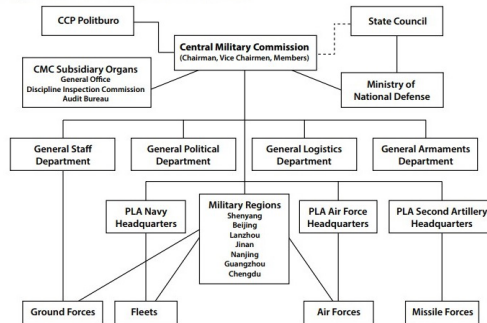
The CMC (chaired by the Party General Secretary), an arm of the CCP Central Committee, was set up to enforce a dual command system where unit commanders shared responsibility with political commissars (PCs); Party committees down to the company level exercising control over diverse matters including operations, officer selection, expenditures, personnel management etc; and discipline inspection commissions that ensured compliance with the Party rules and regulations. The four general departments - the General Staff Department (GSD), General Political Department (GPD), General Logistics Department (GLD), and General Armament Department (GAD)— led by army officers collectively supervised the ground forces. The Military Regions (MR) were ground force-centric organizations. The navy and air force were very nominally integrated into the MR structure and were controlled by respective service headquarters in Beijing. This structure was suited for Cold War-era operations, such as the 1962 border conflict with India and the 1979 Sino-Vietnam war, which primarily involved the ground forces. However, since early 1990s, PLA reformers have been advocating for comprehensive changes to the military structure primarily for two reasons:-

- First being the influence of joint operations concept employed by Western militaries particularly in the maritime and aerospace

domains. This required creation of a joint command and control (C2) structure to integrate the capabilities of all the services and their C4ISR assets. Security challenges beyond the terrestrial boundary viz. Taiwan independence movement; land and maritime territorial disputes with India, Vietnam, Philippines; North Korea and the likelihood of fighting a war with hi-tech adversary like the U.S. in a regional conflict drove this change.

- Second, the excessive power residing with the general departments and MRs and poor supervision thereof was leading to financial wastage and corruption in PLA. In addition there was a felt need for enhancing efficiency of the Defence R&D system that was not absorbing the advances in civilian science and technology.

Figure 1. PLA Structure Prior to Reforms



(Source: Chinese Military Reforms in the Age of Xi Jinping: Drivers, Challenges, and Implications, Joel Wuthnow and Phillip C. Saunders, Institute for National Strategic Studies (INSS), National Defense University Press, Washington D.C., Mar 2017)

The Reform Process

In 2015 and 2016, Xi announced the most ambitious reform of the PLA since the 1950s with two main objectives of modifying PLA's C2 structure for enabling joint operations among the services, and ensuring loyalty of PLA to the Party and Xi Jinping. In 2017, Xi set goals for the

PLA to “generally achieve mechanization” by 2020, to “complete military modernization” by 2035, and to “transform” the PLA into a “world-Class” force by 2049—the same year by which Xi envisions China achieving “the great rejuvenation of the Chinese nation”. CMC’s detailed reform plan was formalized in a document issued on January 1, 2016, titled “*Opinions on Deepening Reforms on National Defense and Armed Forces*”. It clarified that major structural reforms, a 5-year process (up to 2020), would be the first stage. Later reforms would address deficiencies in force structure and force composition, the professional military education (PME) system, the military legal system etc. However, the reforms originally slated to conclude by 2020 are likely to go on through 2021-2022. Stabilizing will likely take even longer.

Objectives of Reform. As per Western analysts, three key objectives driving the ongoing processes of PLA’s restructuring are:-

- Operational objective - improving joint operations capability of the PLA across multiple domains.
- Addressing corruption and increasing supervision over PLA.
- Technical Objectives – synergising “civil-military integration,” for improving the Defence R&D.

Summary of Major Changes:

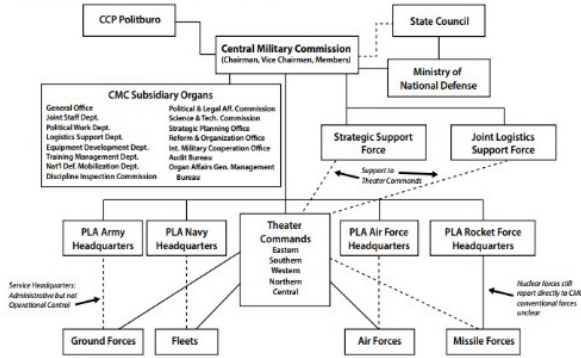
- The four General Departments (responsible for operations, political work, logistics, and armaments/equipment) were disbanded and replaced by 15 functional departments, commissions, and offices within the CMC, and a new ground force headquarters set up.
- Seven military regions were restructured into five theatre commands (TC) aligned against regional threats and responsible

for leading joint operations (on land, at sea, in the air, and in the space and cyber domains) in their respective regions.

- PLA service headquarters are focussing exclusively on “organize, train, and equip” missions and will no longer lead operations. PLA is however, still figuring out how the new relationships among the CMC, services, and theatres will work in practice.
- Separate national and theatre level ground force headquarters were established. Previously, the general departments served primarily as PLA army headquarters and only secondarily as a joint headquarters.
- The restructuring will also reduce PLA by 300,000 soldiers, cutting the ground forces and increasing the size of the navy and air force.
- A new joint C2 structure has been set-up with nodes at the CMC and theatre levels for coordinating China’s responses to regional crises and wartime operations.
- A Strategic Support Force (SSF) has been established to provide support in the information domain and a C4ISR umbrella to commanders and will be responsible for operations in the space, cyber, and electronic warfare (EW) domains.
- A Joint Logistics Support Force (JLSF) was created to provide logistics support to units within the theatres.
- The joint command system complements other recent changes supporting joint operations—including joint training, logistics, and doctrinal development.

Organisational Changes

Figure 2. PLA Structure after Reforms



The distinction between the types of the 15 functional organisations created under the CMC viz. *departments*, *commissions*, and *offices* is not entirely clear, but it appears that departments carry out operational and supervisory functions for the whole PLA, akin to the former general departments; commissions provide high-level oversight on select issues; and offices perform planning, managerial, and other specialized tasks. The grades of these organizations also vary, with departments and commissions generally higher than the offices.

Central Military Commission Reforms

Figure 3. New CMC Organizations



(Source: Chinese Military Reforms in the Age of Xi Jinping: Drivers, Challenges, and Implications, Joel Wuthnow and Phillip C. Saunders, Institute for National Strategic Studies (INSS), National Defense University Press,

Washington D.C, Mar 2017) The new bureaucratic structure under the CMC's direct supervision is depicted in *the* Figure above. It is likely that Sub-departments of GSD responsible for operations and intelligence analysis were assigned to the new Joint Staff Department (JSD). Other GSD sub-departments became full-fledged departments under the CMC, in particular, the GSD training, mobilization, and strategic planning departments became the Training Management Department, National Defense Mobilization Department, and Strategic Planning Office, respectively. Some other functions of GSD were assigned to the services - army aviation, and other army-related functions (such as the Army Command College) were placed under the new army headquarters, while signals intelligence and electronic warfare likely moved to the new SSF and possibly merged into a single entity. The other former general departments of GPD, GLD, and GAD were not impacted significantly and were largely subsumed in the new Political Work, Logistics Support, and Equipment Development departments, respectively.

Some other notable changes include:

- Some elements of the GLD, such as the Wuhan Rear Base, were transferred to the JLSF while others (such as the GLD's Finance, Capital Construction, and Hygiene Departments) were moved to the new Logistics Support Department.
- The GAD's Science and Technology Commission was placed under direct CMC oversight. The commission will promote civil-military cooperation in defence R&D and strengthen high-level guidance for the research, development, test, and evaluation system (RDT&E).
- The GAD's responsibilities for repair and maintenance appear to have been transferred to the services and not to the *Equipment*

Development Department.

- The *Organisational Affairs General Management Bureau* has consolidated management support functions of the four erstwhile general departments (for example, facilities).
- Some staff from the general departments moved to the new army headquarters to manage ground force political, logistics, and equipment matters.
- Of the 15 CMC departments, the *General Office* is listed first in protocol. Apart from the earlier functions of supervising the flow of information to and from CMC members and policy research, the General Office will likely also oversee implementation of the reforms and ensuring that Xi's and CMC's directives are followed across the CMC bureaucracy.

Reforms in the Services

Key service-level reforms included establishing national and theatre level ground force headquarters, renaming the SAF as the PLA Rocket Force and elevating it to full service status, and creating the SSF and the JLSE. Besides:

- *Separate Headquarters for the Army* (Ground Forces) was established in Beijing while the JSD and other general department successors were divested of their ground force responsibilities. Regionally, separate army headquarters were established within each TC. The TCs will also become “joint” organizations staffed, by personnel from all the services.
- The Second Artillery Force was renamed as *PLA Rocket Force* and elevated from an independent branch of the army to a full

military service. *The Rocket Force* commander continues to be an ex officio CMC member. However, a key change is that Rocket Force conventional units will have closer relations with the theatre commands.

- The PLA established a new *Strategic Support Force (SSF)* which will likely focus on supporting information operations and providing C4ISR support. The SSF will not be a standalone force but will operate in conjunction with the other services carrying out tasks such as early warning, managing space satellites (including the Beidou navigation satellites), and provide defense in the electromagnetic and cyber domains. The details remain speculation at this stage.
- A quasi-service called the *Joint Logistics Support Force* was created for PLA to overcome a number of weaknesses in the logistics sector, including rampant corruption, standardization challenges, lack of sufficient information systems to promote rapid and efficient logistics support, and lack of synergy between the military logistics system and the civilian economy. The force aims to reduce redundancies by consolidating logistics from the services. This effort was experimented in the Jinan MR. Other changes included budgetary and procurement reforms and professionalization of logistics personnel. A number of key uncertainties about this organization include the relationship between the JLSF and CMC Logistics Support Department, and the relationship between the JLSF, theatre commands, and service components.

Theatre Reforms

At the theatre level, the seven MRs were replaced by five Theatres - Eastern, Southern, Western, Northern, and Central Theatres - a transition from a

ground force centric Military Region to Theatre Command (TC) system for joint operations. The TCs are the highest joint headquarters in their respective theatres. The TCs will be mainly concerned with conducting joint training during peacetime and exercising command of theatre-based combat forces during wartime. TCs are aligned against specific threats within their respective region or “strategic direction”. The Eastern TC is focused on the Taiwan Strait and East China Sea, the Southern TC on SCS for defending China’s maritime rights and interests in the region and the Northern TC on the Korean Peninsula. The Western TC will handle challenges emanating from Central Asia, such as cross-border terrorism, and safeguard the Sino-Indian border. The Central TC will defend the capital and might provide support to other TCs as needed.



MR System Boundaries (Source: Annual Report to Congress: Military and Security Developments Involving the People's Republic of China (Washington, DC: Department of Defense, 2016))

Within the theatres, army, air force, and (where applicable) naval service component commands are operationally under the TC commanders. Administratively, they report to their respective service headquarters

in Beijing. The service component commanders are dual-hatted as TC deputy commanders. The Rocket Force has missile bases in each TC, but these are not subordinate to the TC headquarters, and missile base commanders have not been dual-hatted as TC deputy commanders. Geographically, only air force headquarters are located in the same cities as the TC headquarters, while army and naval headquarters are located elsewhere.



Approximate TC Boundaries (Source: Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China (Washington, DC: Department of Defense, 2016))

Table: Service Components Within the TCs

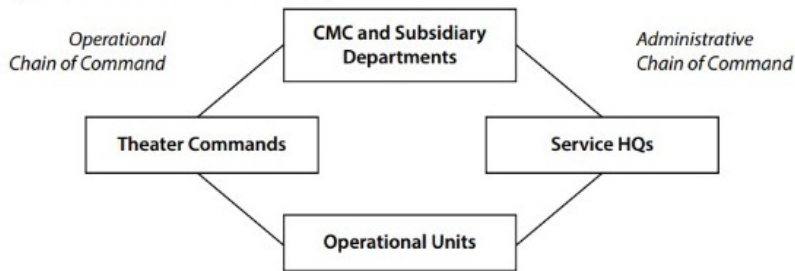
	Eastern TC	Southern TC	Western TC	Northern TC	Central TC
TC HQ	Nanjing	Guangzhou	Chengdu	Shenyang	Beijing
ArmyHQ	Fuzhou	Nanning	Lanzhou	Jinan	Shijiazhuang
Group Armies	1 st , 12 th , 31 st	14 th , 41 st , 42 nd	13 th , 21 st , 47 th	16 th , 26 th , 39 th , 40 th	20 th , 27 th , 38 th , 54 th , 65 th

Navy HQ	Ningbo	Zhanjiang	None	Qingdao	None
Navy Fleets	East Sea Fleet	South Sea Fleet	None	North Sea Fleet	None
Air Force HQ	Nanjing	Guangzhou	Chengdu	Shenyang	Beijing
Air Forces	Eastern TC AF (formerly Nanjing Military Region Air Force, MRAF)	Southern TCAF (formerly Guangzhou MRAF)	Western TC AF (merged from Chengdu and Lanzhou MRAFs)	Northern TCAF (formerly Shenyang MRAFs)	Central TC AF (merged from Beijing and Jinan MRAFs)

(Source: Chinese Military Reforms in the Age of Xi Jinping: Drivers, Challenges, and Implications, Joel Wuthnow and Phillip C. Saunders, Institute for National Strategic Studies (INSS), National Defense University Press, Washington D.C., Mar 2017)

Reforms in Hierarchy and Flow of Command

Figure 6. Bifurcation of Authority



(Source: Chinese Military Reforms in the Age of Xi Jinping: Drivers, Challenges, and Implications, Joel Wuthnow and Phillip C. Saunders, Institute for National Strategic Studies (INSS), National Defense University Press, Washington D.C., Mar 2017)

The restructuring altered the command relationships between the military's main components. As per the formula adopted at the November

2015 CMC reform work meeting the CMC would provide ‘general management’, the theatre commands would focus on operations, and the services would manage force building. Thus two separate chains of command flow down from CMC - an administrative chain to the services and an operational chain to the TCs and on to the troops. The service chiefs would thus focus on organizing, training, and equipping personnel, while the TCs would concentrate on joint training and operations. Routine, single-service operations would continue to be handled by the individual services rather than by TC commanders.



China's Southern Theatre Forces (Source: "China Military Power-Modernizing a Force to Fight and Win", DIA, 2019)

Limited operational role like evacuation of casualties from outposts in the SCS is likely retained by the navy headquarters. Since TCs only cover

territory within China and are aligned against regional threats just beyond China's borders, control of out-of-area operations such as in the Middle East or the Arctic would be with the JSD from Beijing.

The PLA remains a tool for carrying out the Party's decisions with CMC serving as the military's highest decision making organ, along with the infrastructure of Party control throughout the PLA (PC system and party committees). The dual command system of both unit commanders and Political Commissars exercising authority has been retained.

How Objectives of Reforms are being Addressed

Addressing Operational Objectives of 'Strengthening Joint Operations'. The restructuring seeks to enhance the PLA's ability to conduct joint operations. During the 1980s and early 1990s, Chinese observed that advanced militaries increasingly utilized joint campaigns in a number of regional conflicts (first Gulf War, where U.S. forces employed a joint force). The 1995–1996 Taiwan Strait crisis brought to fore the need for capability for joint amphibious, blockade, and firepower operations in order to deter high-tech adversaries in the modern battlefield. The restructuring seeks to strengthen joint operations by *inter alia* establishing a joint C2 structure, integrating C4ISR support, and joint training and logistics.

Establishing a Two-Level Joint C2 Structure (at the CMC and TCs). PLA non-ground force units were poorly integrated into the MR structure with relationship between the services and MRs defined by, "You don't listen to me, and I don't listen to you." Only during wartime *ad hoc* joint headquarters was to be established. In November 2015, Xi announced a military reform at a CMC meeting that a 'two-level joint operational command system' would be established, with key decision making nodes at the CMC and theatre levels. The system would be

seamless through peace time and war time. The CMC (through the JSD) will likely approve transfer of assets from one TC to another for cross-theatre training or operations. Other JSD duties associated with joint operations would include developing campaign plans, formulating military strategy, performing combat capability assessments, and ensuring combat readiness. JSD's Operations Bureau will directly oversee out-of-area operations through its Overseas Operations Office.

Within the theatres, TC commanders have been assigned operational authority over most combat forces in their areas of responsibility. Peacetime control of naval fleets and theatre air forces has been formally transferred from service headquarters to the TCs. During peacetime, theatres will likely focus on joint training, including testing and improving the joint C2 system at both levels. Some routine, single-service operations will continue with individual services, like the anti-piracy operations where the JSD Overseas Operations Office would only play a 'planning and coordinating' role. Most reserve and militia units will report through military districts to the *National Defense Mobilization Department* in Beijing, though during a contingency they would likely be allocated to TC commanders.

Rocket Forces. Earlier, the Rocket Force units were directly controlled by the CMC, however the TC commanders appear to have some control over conventional Rocket Force units within their theatres, although the exact nature of this relationship is unclear. One hundred Rocket Force personnel have been assigned to TC headquarters as staff officers, where they are likely to assist in joint operational planning and liaison. There is also increasing evidence of Rocket Force participation in theatre-based joint exercises. However, unlike the army, air force, and navy, no Rocket Force senior officers have been appointed as theatre deputy commanders, nor have new theatre-level command structures been established for Rocket Force units. CMC is expected to retain tight control over Rocket

Force units with nuclear weapons. Since most missile bases currently have both conventional and nuclear assets, the flow of command from TC commanders to Rocket Force units would need working out.

JOCC. At the heart of the joint C2 system are joint operations command centers (JOCC) that develop operational plans, coordinate combat forces, and link higher and lower echelons. Post reforms, PLA unveiled JOCCs at both the CMC and theatre level. The national command center was renamed the CMC JOCC. JOCCs have also been established within all five TCs. These are manned 24/7 and staffed by personnel from all the services, including the Rocket Force. The TC JOCCs enable communications with theatre service component headquarters (such as fleet headquarters) and with the CMC JOCC. These communications links are critical because most theatre service component headquarters are geographically separated from the theatre JOCC.

Integrating C4ISR Forces. Different services have been relying on different information systems and MRs were developing C4ISR capabilities that were incompatible with other MRs, and operations in the information domain were being managed by different organizations. In order to increase the speed and reliability, and to increase effectiveness of the PLA's over-the-horizon targeting capabilities the restructuring has established the SSF. This organization probably manages space, cyber, and electronic warfare forces, and provides C4ISR support. SSF will provide 'battlefield support' to combat forces in areas ranging from reconnaissance, to navigation, to communications. However, how the SSF will be integrated into the TC structure is unclear.

Improving Joint Training and Logistics.

- **Joint Training.** PLA has experienced many cases where PLA commanders were not well versed in the wide range of capabilities

at their disposal, failed to coordinate and demonstrated weak command and organization skill. For instance, the Stride-2015 exercise, based on a Taiwan scenario, exhibited ‘poor coordination’ between air and land forces. Another problem was that the Professional Military Education (PME) system offered only limited instruction on joint operations, exposing officers to the subject late in their careers, if at all. Accordingly, the reforms aim to improve joint training firstly by setting up the CMC Training Management Department and elevating it to a CMC department underscoring Xi’s emphasis on training. Secondly, while not part of the restructuring itself, the broader military reforms include changes to the PME system with greater emphasis on joint operations. For instance, the PLA NDU has established a course for joint commanders and is exploring ways to partner with theatres and services to improve joint training. Service command colleges will also emphasize joint training for both command and staff officers.

- **Joint Logistics.** The reforms in logistics were built upon earlier efforts in 1999 to establish a joint logistics system in the MRs by integrating the existing ‘fragmented’ logistics systems of the ground forces, navy, and air force. The problems faced then included lack of standardization, a small corps of logisticians, and excessive decentralization. There was also the issue of corruption in military supplies and PLA-owned land and facilities. The GLD was replaced with a Logistics Support Department (LSD) which will coordinate with the theatres and services to support joint logistics requirements. The reforms also created the JLSF, which will strengthen the logistics supply to operational units within theatre commands.

Addressing Objective of Party Control, Supervision and Tackling Corruption in the PLA

The Party, with the reforms, has further entrenched its control of the PLA through the restructuring of the CMC and the lines of authority. Many sub departments under the erstwhile general departments in the CMC have now been segregated equating them with the former, providing direct links with the CMC. This would provide autonomy and improved oversight over concerned subordinate echelons.

Party Control (PC). With regard to party control, an important change took place in 2018 when naval political commissars were given equal authority with the captain of warships as “mission commander”. The PC is expected to replace the captain if the captain is disabled by injury or sickness. The 2018 change was part of a program that began in 2016 throughout the military as the CCP (Chinese Communist Party) sought to improve its control over the military.

Corruption. Another reason for the 2016-18 reforms was to reduce corruption in the military. Chinese leaders have highlighted the corruption among the military leadership and low standards for training and discipline. In theory, political officers are supposed to prevent their commanders from getting involved in fiscal corruption, but often the political commissars themselves were involved in illegal money-making schemes. The CCP is trying to purge the political officer ranks of dishonest and unreliable elements. Corruption has been reduced, mainly through the use of unannounced audits by anti-corruption organizations that have been kept clean, so far. These audits continue to find a lot of theft and other misbehaviour. The anti-corruption crackdown may also make a military career more attractive and respected. This has helped officers who resent corruption or are unable to afford bribes for career advancement.

This should allow professional military criteria to become more important for career advancement, especially for the officer corps.

Low Standards of Training. Government investigators have found ground units reporting that they are well trained to operate all their modern equipment, while the reality is that commanders don't employ realistic training, especially the kind that might injure troops or result in damaged equipment.

Veteran Issues. How any military deals with its veterans has an impact on recruiting and morale of active-duty personnel. A new Ministry of Veterans Affairs was established to care for the PLA's 57 million retired personnel.

Technical Objectives - Addressing Civil-Military Integration for improving Defence R&D

Another driver of the restructuring is improving 'civil-military integration' (CMI), especially in defense R&D by integrating and synergising the defense and commercial industrial bases. Earlier efforts have been frustrated by several obstacles, including lack of information-sharing and coordination between military and civilian research communities, barriers to private enterprises into the defense market, poor CMI policies and corruption within the defense R&D and acquisition systems. The reforms will provide PLA greater access to civilian S&T advances as well as the civilian economy, which can then adopt dual-use technology initially developed for military purposes. The reforms seek to establish a development system "led by the state, driven by demand, and unified by market operations." The reforms aim to accomplish these goals by following means:-

- Firstly, moving the Science and Technology Commission (STC)

from the GAD to direct CMC supervision. The STC guides weapons R&D and consists of a range of sub-committees that incorporate civilian expertise in areas ranging from sensors to explosives to IT systems. The STC has reportedly set up an office for promoting defence innovation apparently modelled on the U.S. *Defense Advanced Research Projects Agency* (DARPA) which was closely studied by the Chinese analysts.

- Secondly, SSF has been created which will draw from civilian S&T strengths to develop and employ advanced technology. According to a *People's Daily* report, the SSF is already sponsoring 'multiple strategic projects' involving joint efforts of industry, civilian research institutes, and military academies. Some technologies incorporated into the SSF mission, such as satellite navigation equipment, have dual-use applications and their development will play an 'important role' in China's economic progress.
- By replacing the GAD, which was largely preoccupied with ground force modernization, with *Equipment Development Department (EDD)* in the CMC that will oversee weapons development for the entire PLA and institute reforms to the R&D and procurement systems. The EDD will coordinate with services and theatres to determine priorities and reduce duplicative development.

Key Changes Anticipated in Future

The structural changes announced in late 2015 and 2016 represent only the initial phase of a 5-year reform agenda. Although the reforms were originally slated to conclude by 2020, officials have more recently suggested they will be ongoing through 2021-2022. Institutionalizing the reforms' sweeping changes will likely take even longer. Key changes that are anticipated in the next stages of reform are brought out in the

following paragraphs.

Force Structure and Composition. Focus will likely be on reducing and streamlining the PLA ground forces. PLA's 18 group armies are being converted into a number of smaller, agile divisions, more deployable combat-focused ground force suited for joint operations. Ground forces are to bear the majority of the planned 300,000-person downsizing – mainly troops with outdated armaments, administrative staff, and non-combatant personnel. Navy, air force, and Rocket Force on the other hand are likely to grow in size.

Professional Military Education (PME). Shortcomings in officer education and training have been highlighted by official PLA media as “the five can not” - commanders who cannot judge the situation, understand the intention of higher echelons, make operational decisions, deploy troops, and deal with unexpected situations. The need for highly qualified commanders for effective joint operations is recognized by PLA and Xi Jinping in March 2016, at National Defense University (NDU) indicated that changes to the PME curriculum and research would be made to emphasize joint operations.

Table: PLA Officers Ranks and Grades

Grade for Military, Political, Logistics, and Equipment Officers	Grade for Special Technical Officers	Primary Rank	Secondary Rank
CMC chairman (军委主席) Vice chairmen (军委副主席)	N/A	N/A GEN/ADM	N/A
CMC member (军委委员)	Grade 1 (1级)	GEN/ADM	N/A
MR leader (正大军区职)	Grade 2 (2级)	GEN/ADM	LTG/VADM
MR deputy leader (副大军区职)	Grade 3 (3级)	LTG/VADM	MG/RADM
Corps leader (正军职)	Grade 4 (4级)	MG/RADM	LTG/VADM
Corps deputy leader (副军职)	Grade 5 (5级)	MG/RADM	SCOL/SCPT
Division leader (正师职)	Grade 6 (6级)	SCOL/SCPT	MG/RADM
Division deputy leader (副师职)	Grade 7 (7级)	COL/CPT	SCOL/SCPT
Regiment leader (正团职)	Grade 8 (8级)	COL/CPT	LTC/CDR
Regiment deputy leader (副团职)	Grade 9 (9级)	LTC/CDR	MAJ/LCDR
Battalion leader (正营职)	Grade 10 (10级)	MAJ/LCDR	LTC/CDR

Battalion deputy leader (副营职)	Grade 11 (11级)	CPT/LT	MAJ/LCDR
Company leader (正连职)	Grade 12 (12级)	CPT/LT	1LT/LTJG
Company deputy leader (副连职)	Grade 13 (13级)	1LT/LTJG	CPT/LT
Platoon leader (排职)	Grade 14 (14级)	2LT/ENS	1LT/LTJG

(Source: 'Recruitment, Education, and Training of PLA Navy Personnel', Kenneth Allen and Morgan Clemens, China Maritime Studies Institute, U.S. Naval War College, Aug 2014)

Personnel Policies. The PLA is also likely to overhaul its human resource system. In the existing system, officers simultaneously hold a *rank* as well as a *grade* (there being 10 ranks and 15 grades resulting more than one rank existing in certain grades). Grades are accorded greater importance for the purpose of seniority, benefits, and career progression. In December 2016, China announced that it would implement a “rank-centered military officer system,” with only one rank for each position. There are also discussions on “rotational” appointment system with officers rotating among different TCs, service headquarters, and CMC departments. It is however unclear whether a formal joint billet system will be adopted or if joint experience will be made a mandatory requirement for promotion.

Grey Areas

As the reforms progress there remain unanswered questions about the nature of authority and the roles and functions of certain organizations in the PLA.

Coordination between TC and Service Components. Theatre level headquarters of ground force, naval headquarters as well as Rocket Force bases, are not collocated with TC headquarters. How these will coordinate remains a question, though the new TC JOCCs (manned by personnel from all the services) are expected to maintain these communications links with the service component headquarters. More information is required on how TCs will exercise operational control over units.

Problems in Implementation of Jointness. Chinese Army being the senior service, the generals can overrule or interfere in navy matters. There are reports that these are already causing problems in joint issues. This is working as an obstacle for joint planning. This is when it is largely understood in China that its next war in all likelihood would be in the Pacific and not on mainland China. The navy should be in the lead but it isn't.

Role of the SSF. TC commanders have operational authority over army, navy, air force, and probably over conventional missile units in their area of responsibility. However, there is a lack of clarity over the role of the SSF in the theatres. One *PLA Daily* report on the Eastern TC JOCC, noted that personnel from SSF were not involved in the Center's operations, suggesting that SSF is not fully integrated in the TCs. There is as yet lack of clarity about the nature, purpose, and organization of the SSF.

Role of the Joint Logistics Support Force (JLSF). The JLSF was announced in September 2016, after most of the other elements of the restructuring were put into place. Therefore, a number of questions remain about relationship of the JLSF with Logistics Support Department of CMC, TCs, and service components and units within the theatres.

Overview

As historic military reforms are progressed in the PLA, some obstacles that have come to light are the continued ground force dominance, interservice rivalry during slowing budget growth, lack of combat experience for most PLA personnel etc. Many years of joint exercises and training will be needed for PLA officers and units to gain experience in operating under the new system. This could impede China's ability to conduct major combat operations during this period. Key indicators of the progress in reforms would include more joint assignments going to non-ground force

officers, expansion and deepening of joint training, and theatre commands exercising greater operational control over air, naval, and conventional rocket forces.

Additional reforms are anticipated in the officer assignment and military education systems for cultivating military leaders necessary to conduct effective joint operations in a restructured PLA.

In some respects however, PLA remains fundamentally unchanged - PLA remains an instrument of the Party with CMC exercising overriding authority. Party's control mechanism has been retained across the hierarchy of PLA through Political Commissars (PC) and party committees. The dual command system in which both unit commanders and PCs exercise authority is not affected by the reforms.

Once the reforms are implemented down to the functional level, PLA can be expected to become a more adept joint warfighting force that can field a joint force more capable of undertaking operations seamlessly across the spectrum of conflict against high-end adversary like the U.S. military, allied forces in the Western Pacific, and in Taiwan.

SECTION 2 – IMPACT OF MILITARY REFORMS ON PLA NAVY

This section highlights how the reforms in PLA Navy (PLAN) under the Xi Jinping regime affect the navy's ability to protect and advance China's maritime interests and its own organizational interests.

Earlier Reforms in PLA (Navy) capabilities

The PLA's limited ability to respond to the deployment of two US carriers during the 1995–1996 Taiwan Strait crisis shifted the Chinese strategic outlook towards the maritime domain. 'Taiwan invasion' or 'blockade scenario' in the face of US intervention became key driver for PLA reforms, force modernization, acquisition of advanced weapons systems.

Blue-Water Naval Force Modernization. Today PLA Navy has evolved into an approximately 350-ship navy fielding advanced platforms such as nuclear submarines, aircraft carriers, and large multi-mission surface vessels, giving China *blue-water capabilities* to conduct sustained operations and project power beyond China's near seas.

Operations and Exercises. PLAN has increased its operational tempo thereby augmenting realistic training of the force. Since December 2008, PLAN has continuously deployed an escort task force in the Gulf of

Aden for escort and counterpiracy operations and increased participation in international military exercises. The navy has increasingly participated in international military exercises including the multilateral exercises such as the US 'Rim of the Pacific' exercise. The navy has reportedly completed its 'first overseas joint beach landing drill' as part of the Joint Sea-2015 exercise in Russia. Sino-Russian naval exercises are being held in new locations, such as in the Baltic Sea, Mediterranean Sea, and Sea of Okhotsk, expanding the operational horizons of the navy. Submarines have been undertaking significant operations without additional senior officers onboard. Naval aviation began introducing greater 'pilot autonomy' in 2013, marking a shift from 'nanny-style' control of pilots by superior officers. The PLA marines corps participated in their first overseas exercise in Thailand in 2010.

Implications of Xi-Era Reforms on PLA Navy

Western Analysts have assessed that the reforms are likely to have implications on PLA Navy's autonomy, its ability to conduct blue water operations in the far seas, its force building plans for blue-water operations beyond the geographical limits of TCs etc. Increasing competition among the services for greater maritime roles and functions has also been brought out stating that it will undermine navy's role in the maritime domain and lead to increased competition for budget. These western analyses are highlighted in the succeeding paragraphs.

Implication on Operational Role of Naval Service and Blue Water Capability. Apparently, the navy's role has been relegated to force-building and training and its operational role has reduced. However, navy appears to be taking measures to retain some operation roles as in the case of counter-piracy deployments to the Gulf of Aden. The naval headquarters role in naval training also allows the navy to use training exercises to

maintain an operational role. Navy has used the geographic constraint of theatre command to lead some operations, for example the Indian Ocean, falls outside of the geographic jurisdiction of the theatre commands, giving the navy headquarters a strong case for continued leadership in counter-piracy operations. Port calls and exercises with foreign militaries also fall outside the geographic responsibilities of the theatre commands. The navy headquarters also appears to be using tri-fleet exercises, which do not fall under the responsibility of any particular theatre command, as another way to hold onto some operational responsibilities.

Navy's Autonomy. The PLAN will benefit from the reduction in traditional ground force dominance, but the reforms may also drive naval modernization efforts in a directions that could undermine an independent navy. With theatre commands in charge of operations, navy's autonomy in conducting operations has reduced. It complicates naval operations to protect China's maritime sovereignty claims by adding another bureaucratic actor into the mix. This may also have an impact on blue water operations that navy might have to undertake independently beyond the jurisdiction of the theatre commands.

Conflicting Priorities with Theatre Commands. Conflict of interest with theatre commands could be expected in terms of distinct priorities. For example, for the Eastern Theatre Command which would deal with Taiwan crisis, platforms like land-based aircraft are more relevant than the blue-water platforms such as aircraft carriers. Also, while navy headquarters can operationally task its components, theatre commands may have different priorities.

Naval Component of a Joint Force. A joint force of the PLA can respond effectively to the maritime challenges of war against a high-tech adversary in the near seas. However, the level of jointness achieved as on date is

questionable.

Increased Competition for Maritime Missions. PLA's new "active defence" strategy saw a shift in focus from China's immediately periphery toward "open seas protection". The 2013 edition of the *Science of Military Strategy* argued that, "the main threat of war has already shifted from traditional inland direction to the ocean direction." Therefore, defensive operations should be pushed farther away from Chinese territory by "pushing forward the strategic frontier" into the maritime strategic space. With the emerging priority of maritime missions, the air force, army, and even the rocket force are attempting to carve out new maritime responsibilities (and associated budget claims). For the PLAN, conduct of operations via joint command and control structures implies a reduction in PLAN autonomy and increased competition for maritime roles and missions from other services. For example:-

- The air force has taken significant steps towards operations over water, the traditional domain of the navy and naval aviation. The air force is undertaking flights over the Western Pacific through new air corridors, PLAAF H-6K bombers are practicing attacks on Guam, and deploying advanced aircraft, such as the Su-35, to the SCS.
- In order to expand its maritime capabilities, the air force is acquiring Y-20 long-range transport, that can carry paratroopers to remote physical features in the SCS and upgrading tankers, such as the IL-78/MIDAS, to augment its small and aging fleet of tankers. The rumoured development of a tanker variant of the Y-20, would increase the range of PLAAF fighters, surveillance aircraft, and bombers, improving their ability to operate far over the ocean from land bases in China.

- Army amphibious units have traditionally focused on the conquest of Taiwan, where there is a need for large numbers of ground troops while PLAN marines have primary responsibility for amphibious operations involving smaller physical features, such as the land features that dot the SCS. However, the Army has recently suggested that it could too have a role in capturing and holding smaller islands.
- Even the rocket force, is pushing into the maritime domain through land-based anti-ship ballistic missiles (ASBM) to “use the land to control the sea”. PLAN analysts meanwhile have been more pessimistic about the weapon’s value.

Implication of Reforms on Inter-agency Operations (PLAN, Maritime Militia and Coast Guard):

- The PLA has frequently cooperated with civilian actors and bodies of the government like the coast guard, maritime militia, Ministry of Foreign Affairs and state-run media. It has also utilized a network of bases and outposts throughout the SCS to respond to maritime and territorial sovereignty disputes and naval clashes in the East China Sea and SCS. Two examples are the *Impeccable* incident in March 2009 and HYSY-981 oil rig incident in May–July 2014.
- While the reforms have allowed the navy to strengthen capabilities to conduct inter-agency operations, establishment of new joint theatre commands will require adjustments in command and coordination mechanisms of navy with the other agencies. For the time being, navy will likely have to coordinate directly with the maritime militias and coast guard and then coordinate joint

operations with the other services on behalf of China's maritime forces.

Dual Command Structure of Chinese Crews:

- An important change took place in 2018 when naval political commissars were given equal authority with the captain as "mission commander". The PC is expected to replace the captain in case of disability by injury or sickness. This change was part of a program that began in 2016 to improve CCP control over the military. Thus, Chinese warships (more than 2,000 tons), have dual commanders and a dual naval command system. The political commissar on a warship is the same rank as the ship's captain and can overrule the ship commander. The political commissar can end the career of the captain, XO or any other officer by rendering uncomplimentary reports. Naval officers who spend their entire careers learning how to run a ship, eventually as captain, have to accept being overruled by a less experienced political officer.
- The American captains have been warned that their Chinese counterparts will probably not react as quickly to a situation and that should be taken into account, or taken advantage of.
- Junior naval officers who are active CCP members become a political commissar. CCP leaders know that many officers join simply for advantages to be gained by being a party member and are discovering that many young party members are more opportunists than anything else. Political commissars and dual command system may improve political control but it is an impediment in the chain of command in a ship and does little to improve operations of the ships.

Overview

As with any military, there is disagreement among the services, and even between different branches of the same service, as to how the force should develop. There is expected to be continued tension between the PLAN's desire to create a blue-water navy optimized for independent operations in the far seas and the desire of the CMC and theatre commands for a naval component that is optimized for joint operations and executing theatre contingency plans. Conduct of operations via a joint command implies reduction in PLAN autonomy and increased competition for maritime roles and missions from other services. It also undercuts navy's ability to conduct its own operations in the far seas. How the independent requirements of the navy as a service and navy as a component of a joint command are progressed needs to be seen.

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PART - IV

PLA NAVY OPERATIONS, TRAINING AND BILATERAL/ MULTILATERAL EXERCISES

Introduction

This Part brings out the drivers and evolving strategic directions of the PRC leadership that have shaped the evolution of operations, operational training as well as bilateral and multilateral exercises which the PLA Navy has undertaken or participated in the past decade. Specifically, the operations and exercises since 2013 have been collated year-wise to depict the trend vis-à-vis their scale and complexity. In the past decade PLA has endeavoured to conduct joint and trans-regional exercises to narrow the gap between training and combat experience to overcome its lack of experience in actual combat operations. The exercises are used to enhance warfighting, competencies, evaluate tactics, develop and refine integrated joint operations command structures and concepts, and evaluate proficiency of the services. The increasing complexity reveal insights into specific missions or contingency operations the PLA may be preparing to conduct in China's near seas or beyond.

In addition, China has increased the number and type of military exercises it participates in with other countries. These exercises include non-traditional security challenges including counterterrorism, antipiracy, and humanitarian assistance/ disaster relief.¹

Evolution of PLA Exercises for Joint Operations and Far Seas Operational Deployments

While the development of joint integrated operations has been a focus of PLA modernization objectives since the late 1990s, it was not until the Tenth Five-Year Plan (2001 to 2005) that the PLA initiated its program to develop a credible joint operation concept. Between 2006 and 2008, China continued to refine and experiment with joint operational concepts. PLA's *Outline on Military Training and Evaluation*, originally released in January 2009, provides training guidance to the PLA emphasizing on realistic training, joint training, and training under complex electromagnetic environments. Between 2009 and 2010 PLA progressed standardized development and testing of concepts of joint operations. The exercises included focus on civil-military integration, air force and naval force projection, joint training methods, and command and control in the war zones.

In 2018, the PLA published a *new Outline of Training and Evaluation*. The outline emphasizes realistic and joint training across all warfare domains, addresses changes in the PLA post recent military reforms, incorporates a global perspective, includes missions and tasks aimed at “strong military opponents.”² There is an increased focus on multi-service exercises, long distance manoeuvres and mobility operations, and the use of professional “blue force” opponents. The new outline also implemented standards for training based on experiences of foreign militaries.³ The exercise *Joint Action*, held since 2014, has emphasized theatre command

and control, PLA joint planning, information operations, logistics, ground-air integration, sea-air-land integration, maritime operations, and civil-military integration for conducting joint operations.⁴

Military Strategic Guidelines⁵

Top-level directives derived from China's military strategy are among the primary drivers for the trends in PLA Exercises. In 2015, China's leadership directed the PLA to be capable of fighting and winning "informatized local wars" with an elevated emphasis on "maritime military struggle," re-orienting its guidance on the type of war the PLA should be prepared to fight. This indicates China expects significant elements of a modern conflict to occur at sea. Earlier in 2004, one of the 'new historic missions' articulated by Chinese President Hu Jintao for PLA was to support China's overseas interests and diplomacy.⁶ The PLAN's focus has consequently evolved from 'off-shore waters defence' to a mix of 'off-shore waters defence' and 'open seas protection', reflecting the increasing interest in a wider operational reach.

In 2000, China's armed forces rarely operated away from its shores, as of today, it sustains regular rotations of PLAN task forces conducting anti-piracy patrols off Somalia since 2008. During transit to these six-month deployments, PLAN task forces typically pay calls to a number of Indian Ocean ports for presence and diplomatic tasks.

Indian Ocean Far Sea Deployments⁷

PLA's increasing interest in operational reach is clearly reflected in the PLAN deployments in the Indian Ocean. In early 2014, Chinese surface combatants carried out far sea training, during which they transited through the SCS, into the eastern Indian Ocean, and then sailed back to China through the Philippine Sea. During the 23-day deployment, the PLAN

conducted training associated with anti-submarine warfare (ASW), air defence (AD), electronic warfare (EW), and expeditionary logistics. In addition to ongoing anti-piracy operations in the Gulf of Aden, China has been deploying intelligence gathering ships and research vessels to the Indian Ocean since 2012, and also nuclear and conventionally powered submarines.

Exercises with Foreign Navies

Over the years PLA Navy has increased participation in bilateral and multilateral exercises with foreign navies to gain exposure in operations which fall in both non-traditional and traditional security domains. Of significance is the increasing engagement of the PLA Navy with the Russian and Pakistan Navy.

Sino Russia Exercises.⁸ The bilateral defense relationship of China and Russia has grown significantly with first joint military exercise in 2003. More than 30 of these have been conducted since. These exercises have seen a steady increase in frequency, complexity, and geographic scope. In the absence combat experience for decades these exercises allow the PLAN to learn from the more experienced Russian Navy, which possesses highly developed capabilities and skills in mine warfare, submarine operations, and long-range maritime strikes with land-based bombers.

Naval 'Joint Sea' Exercises – China and Russia. Since 2012, China and Russia have held an annual bilateral naval exercise known as 'Joint Sea' to improve tactical and operational capabilities, joint operations, and interoperability. These exercises have increased in complexity and interoperability in recent years. The first Joint Sea, held in the Yellow Sea in April 2012, saw relatively unsophisticated ASW operations and simulated rescues of hijacked vessels. Joint Sea 2016 saw drills to seize and control islands and reefs for the first time, plus other amphibious, air

defence, Anti-Submarine Warfare (ASW), and search-and-rescue (SAR) operations. The two navies also used a unique command information system for the first time in 2016. During Joint Sea 2019, live-fire AD exercise for engaging cruise missiles with SAMs was conducted.

These exercises are however assessed by western experts to be constrained by their limited scope, duration and interoperability. Although the *joint command information system* used for Joint Sea 2016 improved efficiency and coordination between the two navies it could only exchange radar and sonar data when compared to the sophisticated data link systems used by US military and NATO. It is assessed that the two navies are therefore yet to consolidate capability for joint naval operations against a peer adversary.

Recent Joint Sea exercises have been held in the Baltic (2017), Mediterranean Sea and the Sea of Japan (2015), and SCSs (2016). Exercises in these locations are considered provocative and signal support by either states for the others security interests and territorial claims. The 2016 exercise in the SCS likely signalled Sino-Russian unity in opposition to ruling by the Permanent Court of Arbitration, which held invalid China's sovereignty claims in the SCS.

Sino-Russian Multilateral Naval Exercises with South Africa.⁹ In Nov 2019, China and Russia conducted their first tri-lateral naval exercises 'Mosi' with South Africa off South Africa's coast, marking PLAN's first operation off the Southern tip of Africa. The exercise focused on navigational security and included surface gunnery exercises, cross-deck helicopter landings, boarding operations, anti-piracy drills and disaster control exercises. PLAN fielded one Type 054A guided missile frigate for the exercise.

Sino-Russian Multilateral Naval Exercises with Iran.¹⁰ In Dec 2019, China and Russia held a joint naval exercise 'Maritime Security

Belt' with Iran in the Gulf of Oman and Indian Ocean. The drills included addressing terrorism threats, rescue operations and defending against pirate attacks. The timing of the exercise during heightened tensions between the United States and Iran, signalled China and Russia's support for Iran against US interests in the region.

PLA Navy Operations, Training and Exercises in 2013¹¹

China's 2013 Defence White Paper titled 'The Diversified Employment of China's Armed Forces', reflected Beijing's drive to become a major maritime power and emphasised the need for blue-water naval capabilities in protecting China's sovereignty, sea lines of communication and maritime resources. A new doctrine was introduced, emphasising joint operations using all units and integrating new capabilities from all services. Missions were expanded from the mainland and the coast to well beyond. By late 2013, the Chinese aircraft carrier *Liaoning* commenced its third set of sea trials, including deck landings of the J-15 naval fighter aircraft. The second aircraft carrier was also in the early stages of construction.

China deployed maritime paramilitary forces to apply pressure over its claim over the Japanese-controlled Senkaku/Diaoyu islands. PLAN also undertook deployments within Malaysia's Exclusive Economic Zone (EEZ) in the SCS, where Malaysia is a claimant and in South Korea's EEZ in response to its dispute over the Socotra Rock in the Yellow Sea. Indonesia does not claim contested features in the SCS, but since 2010 Chinese fishing boats and maritime-agency vessels have been intruding into the EEZ around its Natuna Islands, off the north western coast of Borneo.

Unit training in all services increased in intensity under the slogan 'train as you fight and fight as you train'. Force-on-force, confrontational training was regularly employed seeking to improve 'warfighting capabilities based

on information systems'. Training however was still constrained, because most units were still using a mix of old and new equipment and because the PLA has not conducted an external campaign for more than 30 years.

The navy doubled the number of exercises in the past five years taking its surface task forces farther out to sea than before. Extended submarine patrols also reportedly increased. Complex, multi-service exercises such as the Jinan Military Region's 'Joint' exercises between 2006 and 2010 improved area air-defence and anti-submarine capabilities. Air force exercises became larger, over dispersed areas, including operations over water.

Notable Bilateral/ Multilateral Naval Exercises-2013

Date	Exercise	Location	Aim	Participants
5–10 Jul 2013	<i>Maritime Joint Ex 2013</i>	RUS	Naval Exercise	PRC, RUS
05–12 Jul 2013	<i>2013 Joint Sea 2013</i>	RUS	Naval Exercise	PRC, RUS
04–08 Mar 2013	<i>Peace 13</i>	PAK	Naval Exercise	PRC, AUS, BGD, IDN, ITA, JPN, MYS, PAK, PRC, SRI, TUR, UAE, UK, US (+obs)
17–20 Jun 2013	ADMM Plus - <i>2ND ASEAN Militaries HADR Ex</i>	BRN	HADR ex	ASEAN states, AUS, IND, JPN, NZL, PRC, ROK, RUS, US

PLA Navy Operations, Training and Exercises in 2014 ¹²

China's assertive approach in the East and SCSs continued in 2014 notably the deployment of an oil rig and associated fleet of civilian and paramilitary vessels south of the Paracel Islands between May and July. Counter-piracy

patrols in the Indian Ocean continued with the 18th PLAN task force deployed in August 2014 and included a submarine for the first time. The presence of a submarine, host of port visits and diplomatic events, represented efforts to increase presence and gain experience in far seas deployments.

Overseas exercises became more frequent and ambitious. In Feb 2014, the first Chinese exercise in the south eastern Indian Ocean took place. PLAN also sent four ships to the world's largest multinational naval exercise, the US-led Rim of the Pacific (RIMPAC), for the first time in 2014.

Selected Bilateral/ Multilateral Naval Exercises-2014

In July the PLA made its debut in the annual, US-led RIMPAC naval exercise. Other selected exercises are tabulated below:-

Date	Exercise	Location	Aim	Participants
23–25 Apr 2014	<i>Maritime Cooperation</i>	PRC	Naval Exercise	PRC, BGD, BRN, IDN, IND, MYS, PAK, SGP
20–26 May 2014	<i>Joint Sea 2014</i>	PRC	Naval Exercise	PRC, RUS
26 Jun–01 Aug 2014	<i>RIMPAC 2014</i>	US (Hawaii)	Naval Exercise	AUS, BRN, CAN, CHL, COL, FRA, IDN, IND, JPN, MYS (pl), MEX, NLD, NZL, NOR, <i>PRC (four ships)</i> , PER, PHL (staff), ROK, SGP, Tonga (pl), UK, US (obs BNG, BRZ, DNK, GER, ITA, PNG)

PLA Navy Operations, Training and Exercises in 2015¹³

China released its Defence White Paper, 'China's Military Strategy', in 2015 wherein the PLAN, and growing Chinese maritime ambitions, were given prominence underlining that the mission of '*off-shore waters defence*' is now combined with that of '*open seas protection*'. The White Paper indicated a growing emphasis on maritime security stating that the Chinese armed forces will highlight '*maritime military struggle and maritime preparation for military struggle*', in line with the 'evolving form of war and national security situation'.

In 2015 China adopted an increasingly assertive posture over its territorial claims in the East and SCSs. During 2015 China accelerated construction on features it occupied in the SCS as it reclaimed about 12 square kilometres of territory 17 times that reclaimed by all other claimants combined, representing 95% of all reclaimed land in the Spratly Islands. The US Navy expanded its 'freedom of navigation' patrols in the SCS, to challenge assertions of sovereignty that were not recognised in international law. The encounters between the US Navy and PLAN began when, the *Freedom Class* LCS, USS *Fort Worth*, was closely followed by a Chinese navy frigate near the Spratly Islands on May 2015. In October the destroyer USS *Lassen*, supported by maritime-patrol aircraft, entered the 12 nautical mile territorial waters claimed by China around the Subi and Mischief reefs as a Chinese navy destroyer shadowed the US ship. The Chinese navy warned that further forays into the waters claimed by China might 'trigger eventualities'. In the *East China Sea*, there were continued brief incursions by the Chinese coast guard into Japanese territorial waters around the Senkaku islands.

PLAN forces were also more active in the Indian Ocean littoral in 2015. Nuclear and conventionally powered submarines engaged in patrols and

port visits. Chinese forces were operationally deployed farther than ever before. A PLAN task force joined Russian units on unprecedented joint naval exercises in the Mediterranean, while a Chinese flotilla entered northern Pacific waters near the Aleutians.

The number of joint exercises held during the 2015 training season was the highest in PLA history till then. The navy conducted at least three large-scale exercises in the Western Pacific in 2015, which brought together ships and aircraft from all three fleets, while the air force performed four long-range missions over the Western Pacific using multiple aircraft types, including H-6K bombers. Air-force and naval-aviation assets trained together under air-force led exercise *Sharp Sword-2015*.

Selected Bilateral/ Multilateral Naval Exercises-2015

In 2015, China and Russia held naval and amphibious assault exercises in the Sea of Japan and a smaller naval drill in the Mediterranean.¹⁴ In May 2015, China and Russia held exercise 'Joint Sea 2015', first-ever joint naval exercise in the Mediterranean Sea with nine ships from both countries. Chinese forces included two Type 054A frigates and a Type 903 replenishment ship *Weishanbu*. The navies conducted live-fire drills, underway replenishment and escort operations. The naval drill signalled to the West that the Mediterranean was no longer the domain of NATO.¹⁵

In Aug 2015 Russia and China participated in naval exercise 'Joint Sea II' in the Sea of Japan and off the Russian coast in Primorsky territory.¹⁶ The exercise for the first time included a joint Sino-Russian amphibious assault drill with 22 vessels, 20 aircraft, 40 armoured vehicles and 500 marines. Exercise at sea included anti-submarine, anti-surface and air defence drills. The naval exercise named 'Joint Maritime Transportation Protection and Joint Landing Missions' practiced amphibious and airborne landing of

Russian and Chinese troops in the southern Primorye Territory - first such operation on the Russian soil. It was also the first time that PLAN units participated in military drills in the Sea of Japan.

Date	Exercise	Location	Aim	Participants
May 2015	Joint Sea 2015	Mediterranean Sea	Naval Exercise	PRC, RUS
20–28 Aug 2015	Joint Sea II	Sea of Japan	Naval Exercise	PRC, RUS
17–22 Sep 2015	Peace and Friendship	Malaysia	Naval Exercise	PRC, MAL

PLA Navy Operations, Training and Exercises in 2016¹⁷

Highlight of the year 2016 was a series of military reforms. The planning and conduct of joint exercises and operational deployments at sea and in the air started shifting to theatre-command headquarters.

In May 2016, a large PLAN task force conducted an extensive deployment through the SCS, eastern Indian Ocean, and Western Pacific Ocean. The force conducted island assault training in the Spratly Islands and maritime interdiction training in the Indian Ocean before linking up to conduct an opposition-force exercise in the Philippine Sea. The deployment demonstrated the PLAN's growing capability to coordinate operations involving disparate subordinate elements over a wide area.

Beijing continued to consolidate its presence in the SCS in 2016, notwithstanding the judgements against China by the UN Permanent Court of Arbitration in July. Employing a hybrid-warfare campaign, a series of incursions by more than 300 Chinese fishing boats believed to be from the maritime militia, supported by China Coast Guard vessels took

place in the East China Sea around the Diaoyu/ Senkaku Islands inside Japan's EEZ in August 2016. Chinese military aircraft also closed the Japanese airspace a record number of times (571 times) during the year.

PLAN's blue-water capabilities was augmented further by commissioning of three more Type-903A large replenishment ships in 2016 to strengthen PLAN's logistic support.

Training and Bilateral/ Multilateral Naval Exercises-2016¹⁸

In summer 2016, the navy conducted multiple exercises integrating assets from all three fleets as well as a mobile-logistics-support exercise to defend 'strategic locations at sea'. In June, air-force H-6K bombers set new endurance records for flight times and ranges over the ocean. In August, the PLAN conducted an exercise in the Sea of Japan where a task group returning from the US RIMPAC exercise acted as an opposing force. PLAN Aviation bombers flew through the Sea of Japan for the first time as part of this training.

PLA units also took part in a number of bilateral and multilateral exercises with foreign armed forces, to practise non-traditional military tasks, such as disaster relief and counter-terrorism, including the 26 nation RIMPAC exercise. PLA was also involved in bilateral exercises focusing on missile defense and sea and air combat (some involving live-fire drills) with close defense partners, including Russia and Pakistan. The PLA in 2016 conducted its first naval exercises with Cambodia.¹⁹

Amid tensions arising from territorial disputes with Southeast Asian countries, China and Russia conducted an eight-day-long naval exercise 'Joint Sea-2016'—with five Russian and ten PLA Navy ships as well as Chinese submarines participating - in the northern portion of the SCS near Hainan Island in September 2016. The Chinese contingent also

included 11 fixed-wing aircraft, eight helicopters, and 160 marines. The exercise focused on “island-seizing,” and other drills including amphibious operations, air defense, anti-submarine warfare, and search and rescue; while utilizing a common command information system. This was the PLA’s fifth naval exercise with Russia since 2012 and the first to occur in the SCS. 2015’s Joint Sea-2015 II drill in the Sea of Japan also emphasized forced incursions and island landing.

Selected Bilateral/ Multilateral Naval Exercises-2016

Date	Exercise	Location	Aim	Participants
30 Jun– 04 Aug 2016	<i>RIMPAC 2016</i>	US	Multilateral Naval Exercise led by US PLAN participation- frigate, destroyer, hospital ship, replenishment ship, submarine rescue ship	26 countries. PLAN participated in HA/DR, submarine rescue, maritime blockade, and anti-piracy training but restricted by U.S. law from engaging in combat drills in surface warfare, air and missile defense, and amphibious operation
15–19 Sep 2016	Joint Sea-2016	RUS	Annual Joint Sea exercise since 2012	PRC, RUS
12 Apr 16-16 Apr 2016	KOMO-DO-2016	Indonesia	Maritime peace-keeping, HADR, anti surface live-fire drills	Hosted by Indonesia (16 countries participated). Frigate and salvage ship participated.

Date	Exercise	Location	Aim	Participants
21 May -10 Jun 2016	Blue Strike-2016	Thailand	Counterterrorism, NBC warfare, live-fire drills	3 rd major bilateral ex. PLAN – One Warship, nine amph armoured vehicles, marines
	Unnamed	Singapore	Maritime	PRC, Singapore
	Unnamed	South Africa	Maritime	PRC, South Africa
31 Dec 2015 - 01 Jan 2016	Naval Exercise with Pakistan	East China Sea	Naval Exercise (Two missile frigates)- Manoeuvres, SAR, surface and anti air live-fire drills, asw, antipiracy	Pakistan. First naval exercise between the two countries in the East China Sea
Mar 2016	Joint Evacuation-2016	Nanjing, China	Non combatant evacuation operation	PRC, UK. First Table top exercise together.
02 May 16-12 May 2016	ADMM Plus- Maritime Security and Counter terrorism	Singapore and Brunei	Maritime security and counterterrorism drills	ASEAN states, US and seven other countries

PLA Navy Operations, Training and Exercises in 2017 ²⁰

In July, following Vietnam's refusal of China's demand to halt drilling by a Spanish oil company on Vanguard Bank, an area Vietnam claims as its EEZ, China deployed fishing vessels, accompanied by PLAN and coastguard ships, close to Pagasa, the largest feature occupied by the Philippines in the Spratly Islands. In 2017 Chinese military aircraft continued to close national airspace of Japan and included a group of six H-6K bombers which, in August, flew close to Japan's southern island of

Okinawa. PLAN began regular transits by surface ships and, sometimes, naval-aviation assets of the Miyako Strait separating Okinawa and the lower Ryukyus from Taiwan. In 2016 and 2017, PLAN's aircraft carrier Liaoning and escort ships conducted flying operations and undertook transits of the Taiwan Strait and through the Philippine Sea indicating increasing confidence in carrier borne aviation capabilities.

PLAN continued to sustain rotation of ships for anti-piracy patrols in the Gulf of Aden. Formal opening of China's first overseas military facility in Djibouti and an increased tempo in out-of-area operations in 2017 highlighted its increasing maritime emphasis. The facility in Djibouti supports Chinese anti-piracy operations in the Gulf of Aden, but also provides replenishment facility for ships and aircraft bound for the Mediterranean Sea and European waters. In April 2017, Chinese special forces, under the cover of an Indian naval helicopter, boarded a hijacked cargo ship and rescued the crew. PLAN continued to conduct deployments into the Western and Southern Pacific and Indian Ocean, and for the second time in 2017, in the Bering Sea. In February 2017, a task force from the PLAN's South Sea Fleet conducted an extended deployment to the Indian Ocean and Western Pacific and engaged in opposing force exercises with forces from the East and North Sea Fleets.

PLAN began a steady deployment of submarines and submarine tenders to the Indian Ocean ostensibly in support of its counterpiracy patrols underscoring China's interest in protecting SLOCs beyond the SCS. Chinese submarines conducted port calls in Seppangar, Malaysia and Karachi, Pakistan, but they were denied a port call in Colombo by Sri Lanka. A dozen Chinese warships were reported in the Indian Ocean in July, when tensions rose between India and China over the Doklam Plateau border, although this probably included the Gulf of Aden task force.

Chinese AGIs (intelligence collection ships) operated well beyond the first island chain in 2017; one Type 815A DONGDIAO-Class AGI was deployed to the *Coral Sea* in July to collect intelligence against a joint Australian-U.S. naval exercise, while another operated off *Alaska*, likely to monitor a live test of the THAAD missile defense system.

Training and Exercises

In 2017, the PLA continued to focus training to execute large-scale, complex joint operations. This included evaluating PLA unit performance during force-on-force confrontations against dedicated opposing force units, strengthening strategic campaign training, and executing long-distance manoeuvres and mobility operations. In August 2017, the PLA held a largescale, multi-fleet live-fire exercise simultaneously in the Yellow Sea and Bo Hai, with naval ships, submarines, aircraft and coastal defense units, as well as PLAAF participation. These were possibly tied to tensions on the Korean Peninsula.

Selected Bilateral/ Multilateral Naval Exercises-2017

The PLAN undertook its annual joint exercise 'Joint Sea 2017' with Russia in the Baltic Sea for the first time in Jul 17 - although this was not the PLAN's first deployment to the Baltic. Three PLAN ships participated.²¹ The two navies exercised air defense and anti-submarine operations and submarine rescue operations. The two navies also conducted exercises in the Sea of Japan and the Sea of Okhotsk in September 2017. The two navies exercised submarine rescue, joint air defense, and anti-submarine operations.

Date	Exercise	Location	Aim	Participants
21–28 Jul 2017	Joint Sea 2017	Baltic sea	Maritime	Bilateral exercise with Russia
Feb 2017	AMAN 2017- Hosted by Pakistan.	Karachi	Maritime Security	Naval assets from 9 countries participated – China, Australia, Indonesia, Turkey, Sri Lanka, UK, US, Japan, Russia
	Unnamed		Maritime	Bilateral exercise with Vietnam
	Unnamed		Maritime	Bilateral exercise with Iran
	Unnamed		Maritime	Bilateral exercise with Burma
	Unnamed		Maritime	Thailand, the Philippines, Cambodia, Myanmar, Laos, and Brunei
	IMMSAREX		Maritime	Hosted by Bangladesh (32 countries participated)

PLA Navy Operations, Training and Exercises in 2018²²

Although in 2015 Xi Jinping had promised then US president Barack Obama that China would not militarise its reclaimed features in the Spratly Islands, it developed, in the three largest of the Spratly Islands (Fiery Cross Reef, Mischief Reef and Subi Reef) 3-km-long runways, hangars for combat aircraft, ammunition bunkers, barracks, large berthing facilities, anti-aircraft guns and close-in weapons systems and over 40 radar facilities on the seven reclaimed Spratly Islands. Jamming equipment was also installed on Mischief Reef in the Spratlys. In the Paracel Islands group, HQ-9 air-defence systems and probably YJ-62 ASCMs, as well as J-11B combat aircraft were deployed on Woody Island. In May 2018, an

H-6K bomber landed on Woody Island being a first on one of China's SCS islands.

In Apr 2018 the aircraft carrier Liaoning embarked with J-15 fighters and its escorts conducted operations for the first time outside the First Island Chain in the Philippine Sea. During the year, China maintained a presence of typically four China Coast Guard ships in the territorial waters around Senkaku Islands. China continued to conduct counter-piracy operations in the Gulf of Aden as the 29th task force escorted 40 Chinese and foreign ships during its six-month deployment. The task force made port calls in Cameroon, Gabon, South Africa, Germany, and Poland.

PLAN also continued submarine deployments to the *Indian Ocean*, demonstrating increasing familiarity with operating in that region and underscoring China's interest in protecting SLOCs beyond the SCS. One Type 815 DONGDIAO-Class AGI was deployed to *Hawaii* to collect against the US led RIMPAC exercise.

Training and Bilateral/ Multilateral Naval Exercises-2018

PLAAF started expanding the scope and scale of its missions over sea. There were multiple flights into the Pacific, some circumnavigating Taiwan, with many aircraft types. The PLAAF increased its interaction with the PLAN's surface and aviation assets to develop jointness. PLA also conducted a joint amphibious exercise in the Eastern Theatre. In addition, it conducted significant training events throughout the year, including its largest ever fleet review.

In July 2018, the PLAN conducted a large-scale, multi-fleet live-fire exercise in the East China Sea, north of Taiwan likely as part of an effort to deter Taiwan independence. The PLAN Marine Corps conducted a

long distance manoeuvre exercise from March to June 2018, deploying approximately 10,000 personnel to training areas in Yunnan and the Shandong Peninsula likely aimed at improving the PLAN Marine Corps' expeditionary warfare capabilities.

The Eastern Theatre Command conducted combat drills focused on naval operations throughout the year in the East China Sea. In October 2018, a PLAN flotilla conducted a series of drills, including ASW.

In 2018, the US disinvented China from the 2018 RIMPAC exercise, citing China's militarisation of the SCS as the reason.

Selected Bilateral/ Multilateral Naval Exercises-2018

Exercise Name	Type of Exercise	Participants
China-ASEAN Joint Maritime Exercise	Maritime	Singapore, Thailand, Brunei, Vietnam, the Philippines, Cambodia, Indonesia, Malaysia, Burma
Peace and Friendship 2018	Maritime	Malaysia, Thailand

PLA Navy Operations, Training and Exercises in 2019²³

China's second aircraft carrier Shandong was commissioned in December 2019 - China's first locally built aircraft carrier.

In March 2019, Beijing sharply escalated its military pressure against Taiwan when two Chinese fighter aircraft crossed the median line of the Taiwan Strait for the first time since 1999 bringing a serious new challenge to cross-Strait stability. This was followed up by a series PLA training events on a scale not seen since 1990s. PLA carried out an exercise for a "joint firepower assault" near Taiwan using bombers, naval

ships, amphibious platforms, and helicopters. PLAN conducted multiple exercises in the East and SCSs, as well as near Taiwan.

In July, PLA for the first time conducted simultaneous large-scale exercises in two locations near Taiwan since the Taiwan Strait Crisis of 1995–1996, which included an amphibious “beach raid”, and a first salvo-launch of anti-ship ballistic missiles in the SCS. China also increasingly employed ‘hybrid’ or ‘grey zone’ activities, highlighted by deployment into Vietnam’s EEZ of a survey vessel with coastguard escort.

In 2019, Beijing for the first time acknowledged the existence of theatre-level joint exercises, code-named ‘North, East, South and West’. In July 2019 the PLA conducted a nation-wide exercise across all five-theatre commands that included all four services, the SSF, and the JLSF. Conducted from CMC’s Joint Operational Command Centre (JOCC), the exercises tested joint operations of all five military commands while probably simulating a Taiwan or a Senkaku contingency. The PLANMC also participated in a maritime amphibious assault exercise with amphibious armoured vehicles, incorporating the PLANMC in joint operations.²⁴

Bilateral/ Multilateral Naval Exercises-2019

‘Joint Sea-2019’. This combined naval exercise between navies of China and Russia was held in April/ May 2019 in waters near Qingdao, and included first ever combined live-fire missile defense drills.

Sino-Russian Multilateral Naval Exercises with South Africa.²⁵ In Nov 2019, China and Russia conducted their first tri-lateral naval exercises ‘Mosi’ with South Africa off South Africa’s coast, marking PLAN’s first operation off the Southern tip of Africa. The exercise focused on navigational security and included surface gunnery exercises, cross-deck helicopter landings, boarding operations, anti-piracy drills and disaster

control exercises. PLAN fielded one Type 054A guided missile frigate for the exercise.²⁶

Sino-Russian Multilateral Naval Exercises with Iran.²⁷ In December 2019, China and Russia held a joint naval exercise “Maritime Security Belt” with *Iran* in the Gulf of Oman and Indian Ocean. The drills included addressing terrorism threats, rescue operations and defending against pirate attacks. The timing of the exercise during heightened tensions between the United States and Iran, signalled China and Russia’s support for Iran against U.S. interests in the region.²⁸

Exercise Name	Type of Exercise	Participants
Joint Sea-2019	Sino-Russian bilateral Naval Exercise off Qingdao	Russia, China
Mosi	Sino-Russian Multilateral Naval Exercise with South Africa off South Africa	Russia, China and South Africa
Maritime Security Belt	Sino-Russian Multilateral Naval Exercise with Iran off Gulf of Oman	Russia, China and Iran

PLA Navy Operations, Training and Exercises in 2020²⁹

In general, the PLAN and China’s other maritime security agencies, including the coast guard, increased assertive deployments in and around the SCS as the corona virus pandemic unfolded. The carrier *Liaoning* was also deployed close to Taiwan and in the East China Sea. In 2020, China attempted to assert its primacy in its maritime littoral. Maintaining pressure on its main SCS adversary, Vietnam.

From February onwards, Chinese combat aircraft flew close to or within Taiwan’s Air Defence Identification Zone (ADIZ), crossing the ‘median line’ in the Taiwan Strait numerous times. In September on one occasion

19 Chinese aircraft entered Taiwan's airspace. Chinese government said that it did not recognise a median line in the Taiwan Strait. During April, the Chinese aircraft carrier Liaoning with escorts sailed close to Taiwan as part of a month-long deployment as demonstration of China's growing power projection capacity.

In April, a vessel from the China Coast Guard (CCG) sank a Vietnamese fishing boat near the Paracel Islands. Vessels from the CCG and China's maritime militia probed EEZ of Malaysia and Indonesia using facilities on Chinese occupied features in the Spratly Islands as forward bases. Malaysia also saw a month-long intrusion by a Chinese survey ship into its EEZ in April–May 2020. In the East China Sea in May, CCG ships harassed a Japanese fishing boat inside the territorial waters of the Senkaku/ Diaoyu islands (administered by Tokyo, but claimed by Beijing), leading to a stand-off with the Japan Coast Guard (JCG), which reported presence of Chinese government vessels close to the Senkaku/Diaoyu islands for a record 70 consecutive days.

In August 2020, Chinese conducted four ballistic-missile tests with splash points between Hainan and the Paracel Islands. These could be interpreted as deterrent signals to the aircraft carriers and other large ships of US Navy if they intervened in a SCS conflict. In August, the first of the new Type-075 (*Yushen*) 30–35,000-tonne large amphibious ships (LHDs) embarked on sea trials. With another one launched in April 2020, and a third under construction, these ships would add considerably to the PLAN's ability to project power.

Training and Exercises

Exercises involving all of China's military theatre commands continued for a second year in 2020.

The PLA continued to test its reformed structure and new capabilities. Exercises in the Eastern and Southern theatre commands focused primarily on Taiwan scenarios. In May 2020, a large area of the Bohai Sea was cordoned off for a series of opposing-force live-fire exercises which included training for the seizure of islands and air-defence and anti-missile manoeuvres, possibly for messaging of an amphibious operation on Taiwan's coast. On 18 and 19 September, PLA sent 37 fighters, bombers and anti-submarine warfare aircraft into the northern and southern sections of Taiwan's ADIZ. PLA drills at the northern and southern ends of the Taiwan Strait became common in 2020, as did air incursions across the median line.

PLA Eastern Theatre Command, in Aug 2020, conducted large scale drills over areas of Taiwan Straits; featuring many military branches in a joint operation that could have involved military aircraft, warships, amphibious troops, artillery and missiles; to test and improve PLA joint combat capability.³⁰ PLA Navy also conducted near simultaneous exercises in four sea regions i.e., SCS, East China Sea, Yellow Sea and Bohai Gulf in Aug 20, a rare move designed to signal its readiness to handle confrontation with the United States and Taiwan. These exercises intended to showcase PLA's ability of major mobilisation of forces across multiple sea areas. PLA expects any future war to happen in multiple places at once, a key reason why China was holding different naval drills at the same time.³¹

The air force, along with other service arms, increased activity and training around Taiwan which included mixed sorties of J-10, J-11, J-16 fighter and H-6 bomber aircraft. There has also been evidence of coordination between air-force units and naval-aviation anti-submarine warfare units.

J-15 Carrier Based Fighters Night Buddy Refueling.³² PLAN continued to integrate the Carrier in their concept of naval operations as J-15 fighter

jets successfully completed night in-flight buddy refuelling training. This demonstrated growing confidence of the Chinese in Carrier based aircraft operations and long-range combat capability.

Bilateral/ Multilateral Naval Exercises-2020

Sea Guardians-2020, China Pakistan Navies Joint Exercises.³³ Joint exercise of navies of China and Pakistan in the Arabian Sea in Jan 2020 included submarines for the first-time and involved anti-submarine and submarine rescue training, indicating a high-level of strategic mutual trust. This is the sixth joint naval exercise between China and Pakistan but it is the first time the exercise was named 'Sea Guardians'. 'Sea Guardians' is expected to become a regular naval feature akin to 'Warrior' joint land exercises and the 'Shaheen' joint air exercises. The PLAN participation was mainly from Southern Theatre Command Navy and included a destroyer, frigate, comprehensive supply ship, submarine rescue ship, two shipborne helicopters and 60 Chinese Marines. The focus of the exercises was on air defence, maritime interception, anti-submarine and live-fire exercises at sea. India should expect increased presence of Chinese submarines on the Western shores from here on necessitating an increased ASW surveillance by the Indian Navy and consolidation of its minesweeping capability.

CONCLUSION

Over the last decade, China has included protection of overseas interests as its historic mission and enunciated ‘winning local wars in informatized conditions against a major adversary’, ‘near-seas defence’ and ‘open-seas protection’ as missions for the PLA. Fighting local wars under a joint command and control architecture to enable seamless transition from peace to war scenario has been at the core of the PLA reforms over the past few years. PLA has been actively training to ensure effective coordination amongst its forces post the transition in 2016 to the five joint theatre commands and control structure. It is conducting increasingly larger-scale and complex joint exercises, service-level exercises, numerous mission-oriented force-on-force exercises, live-fire exercises, and skills-based competition exercises. Notable is the PLA’s focus on realistic combat training using dedicated ‘blue force’ opponents, training simulation technology, and efforts to strengthen and evaluate commanders’ ability to conduct joint operations. In 2019, the PLA conducted a nation-wide exercise across all five-theatre commands that included all four services, the SSF, and the JLSF. Led by the CMC’s Joint Operational Command Centre, the exercises tested joint operations of all five military commands while probably simulating a Taiwan or a Senkaku contingency.³⁴

Routine deployments of Chinese naval and air forces abroad also help improve their ability to operate overseas. The PLA Navy regularly makes port calls and conducts exercises with other navies in far seas, including in the Mediterranean Sea, Baltic Sea, Gulf of Aden, and the waters off

Australia. The PLA's port calls and participation in exercises with other militaries in the Western Hemisphere in recent years further demonstrate the PLA Navy's growing global presence.³⁵ The PLA also derived important lessons on overseas operations from its anti-piracy patrol in the Gulf of Aden since 2008, evacuation of Chinese citizens from Libya in 2011 and Yemen in 2015. These are not combat operations, but they do provide the PLA with opportunities to practice and improve capabilities that could be applied to a range of future missions, including combat operations.³⁶

Training activities, operations, deployments and bilateral exercises of the PLA indicate a focussed approach towards building capabilities and competencies to achieve the assigned strategic missions and to consolidate military reforms that were initiated in 2016.

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