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„Geopolitical Evolution in East Asia: Landpower and enabling forces in a maritime environment."

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Ulf Michael Steindl, BA BA

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diplomatische akademie wien
Vienna School of International Studies
École des Hautes Études Internationales de Vienne

ABSTRACT

This thesis assesses the geopolitical structure and dynamic of the regional system East Asia under the framework of offensive realism, and provides a macro- to micro-level analysis of the impact of geography on great power behaviour, defence policy, and military acquisitioning. Assessing military strategy and acquisition under geographical aspects fills a gap in the theoretical body of offensive realism, since the theory does not sufficiently explain the role of landpower and its projection in a maritime environment. Support forces such as the navy and the air force, but also conventional missile and amphibious forces, are upgraded to enabling forces. A closer look on the priorities of Chinese and Japanese armament confirms this. So do reforms pushed by the US Pacific Command that are assessed as well. The states in East Asia, including the two regional great powers China and Japan are heavily dependent on sea lines of communication. The Chinese ambition of creating an anti-access area-denial zone (A2AD) in the Western Pacific that impedes US power projection into East Asia is directly driven by vulnerabilities created by this dependency. Likewise, Japan's slow abandonment of pacifism is a reaction to China's emergence as a seapower in this specific geographical context.

Diese Masterarbeit untersucht die geopolitische Struktur und Dynamik im regionalen System Ostasiens im Rahmen des offensiven Realismus. Sie basiert auf einer Analyse auf mehreren Ebenen, die den Einfluss von Geographie auf das Verhalten von Großmächten, ihre Verteidungspolitik und ihre Aufrüstung aufzeigt. Dabei wird ein Schwachpunkt des offensiven Realismus behoben, da dieser die Rolle von Landstreitmächten und ihrer Projektion in einer maritimen Umgebung nicht adequat wiedergibt. Unterstützungskräfte wie die Marine, die Luftstreitkräfte, aber auch konventionelle Raketentruppen und amphibische Einheiten, erhalten eine wichtigere Rolle, da sie Machtprojektion erst ermöglichen oder ihr entgegenwirken können. Ein genauerer Blick auf die Prioritäten der chinesischen und japanischen Aufrüstungspolitik bestätigt dies. Auch die Reformen die das US Amerikanische Pazifikkommando vorantreibt passen ins Bild. Die Staaten Ostasiens, inklusive der Großmächte China und Japan, sind von maritimen Verkehrswegen schwer abhängig. Das Streben Chinas eine „anti-access area-denial" (A2AD) Zone im Westpazifik zu etablieren ist getrieben von der Verwundbarkeit durch diese Abhängigkeit. Auch Japan's langsame Abkehr vom Pazifismus ist unter dem spezifischen geographischen Kontext Ostasiens eine Reaktion auf Chinas Verwandlung in eine Seemacht.

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Maps that do not state a specific source have been created by the author by using blank maps from D-maps.com.

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GLOSSARY

A2AD	Anti-Access Area-Denial
ADIZ	Air Defence Identification Zone
ALCM	Air-Launched Cruise Missile
AMID	Amphibious Mechanized Infantry Divisions (AMID)
ASBM	Anti-Ship Ballistic Missile
ASCM	Anti-Ship Cruise Missile
ASDF	Air Self-Defense Force (Japan)
ASEAN	Association of Southeast Asian Nations
ASuW	Anti-Surface Warfare
ASW	Anti-Submarine Warfare
ATACMS	Army Tactical Missile System
BMD	Ballistic Missile Defence
CPEC	China-Pakistan Economic Corridor
GNI ATLAS Method	A calculation method by The World Bank Group for GNI, which uses the Atlas conversion factor that reduces the impact of currency fluctuations by using three year averages and improves cross-country comparisons.
C^4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance
CSBA	Center for Strategic and Budgetary Assessments
DF-21C/D	Dong-Feng 21C/D
DF-26	Dong-Feng 26
DPRK	Democratic People's Republic of Korea
EMP	Electromagnetic Pulse
Fortress Fleet	A fleet that is primarily assigned to defend one or more coastal fortresses, with strategic emphasis on the importance of the latter.
Fleet in Being	An inferior fleet that evades battle on the opponent’s terms, and restricts his freedom of movement by indirectly threatening operations.
FSA	Force Structure Assessment
GLCM	Ground-Launched Cruise Missile
GNI	Gross National Income

GNP	Gross National Product
HIMARS	M142 High Mobility Artillery Rocket System
ISR	Intelligence, Surveillance, Reconnaissance
JAM-GC	Joint Concept for Access and Maneuver in the Global Commons
GSDF	Ground Self-Defense Force (Japan)
Jieitai	Japanese Self-Defense Forces
JSDF	Japanese Self-Defense Forces
LACM	Land-Attack Cruise Missile
LCS	Littoral Combat Ship
LHA	Landing Helicopter Assault (Ship)
LRASM	Long-Range Anti-Ship Missile
MIRV	Multiple Independently Targetable Re-entry Vehicle
MRBM	Medium-Range Ballistic Missile
MBT	Main Battle Tank
MSDF	Maritime Self-Defense Force
NIFC-CA	Naval Integrated Fire Control-Counter Air architecture
OBOR	One Belt One Road
OTH	Over the Horizon
PGM	Precision Guided Munition
PLA	People’s Liberation Army
PLAAF	People’s Liberation Army Air Force
PLAGF	People’s Liberation Army Ground Force
PLAMC	People’s Liberation Army Marine Corps
PLAN	People’s Liberation Army Navy
PLARF	People’s Liberation Army Rocket Force
PPP	Purchasing Power Parity
PRC	People’s Republic of China (Mainland China)
RIMPAC	Rim of the Pacific Exercise
RMA	Revolution in Military Affairs
ROC	Republic of China (Taiwan)
ROK	Republic of Korea (South Korea)
SAG	Surface Action Group
SAM	Surface-To-Air Missile

SEA	Southeast Asia
SEZ	Special Economic Zone
SIPRI	Stockholm International Peace Research Institute
SLCM	Sea-Launched Cruise Missile
SLOC	Sea Lines of Communication
SRBM	Short-Range Ballistic Missile
SSM	Surface-to-Surface Missile
SSGN	SSN with Guided Missiles / Cruise Missile Submarine
SSN	Nuclear-Powered General-Purpose Attack Submarine
STUFT	Ships Taken Up From Trade
TEL	Transporter Erector Launcher
UAV	Unmanned Aerial Vehicle
USMC	United States Marine Corps

1. Introduction

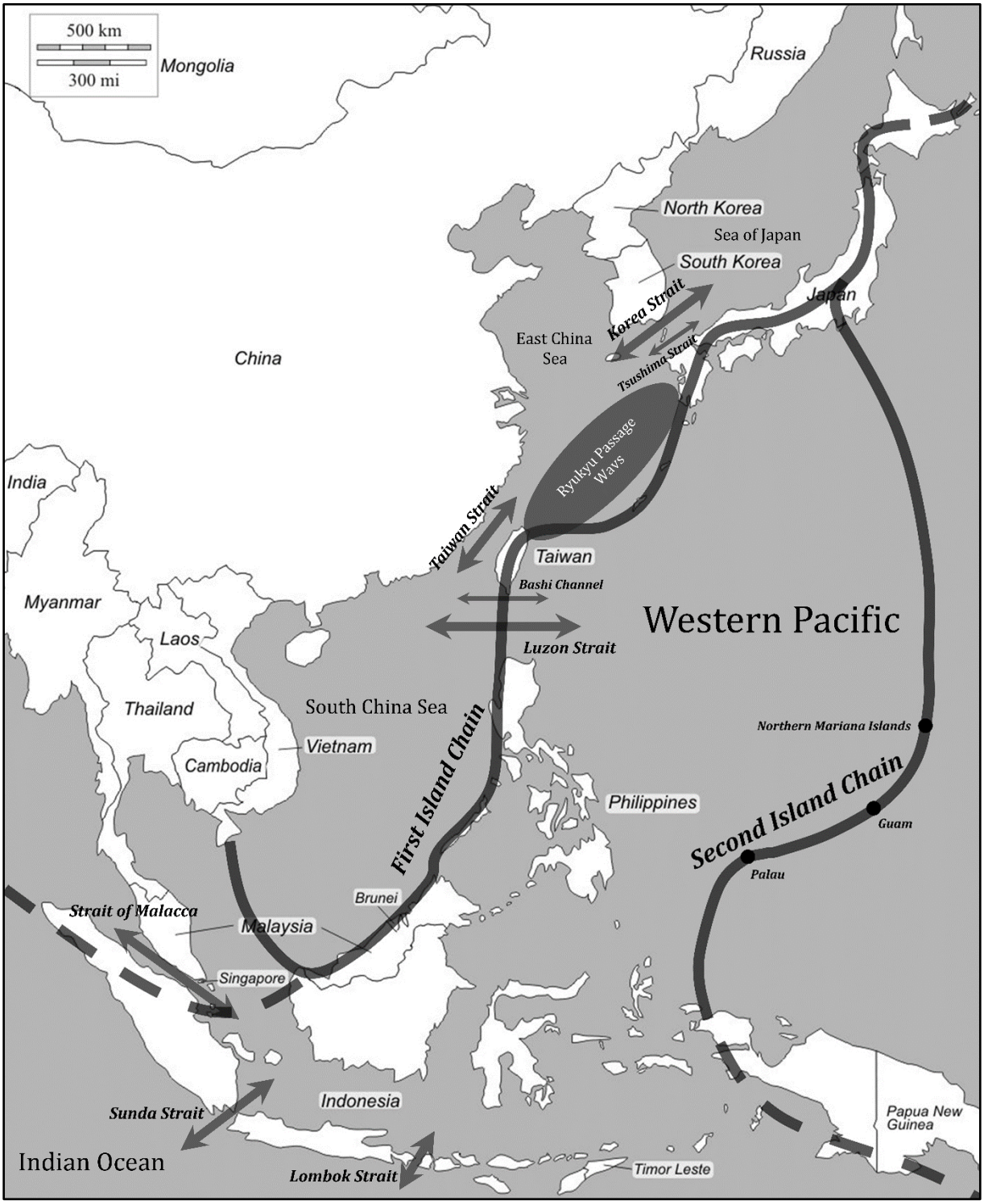
It becomes more and more apparent that the 21st century is characterized by a shift of the global economic centre of gravity towards the Indo-Pacific and the decline of the short-lived unipolar system, centring on the United States, which appeared after the fall of the Soviet Union in 1991. In stark contrast to Francis Fukuyama's "end of history", a new age of instability is on its way.[1] The United States will remain the most powerful country in the world, punching far above her demographic weight, but indicators point towards the emergence of a multipolar system. While contours of this new geopolitical landscape are already visible, it remains open which countries will be able to establish themselves as additional poles. Following John J. Mearsheimer's theory of offensive realism, we see the rise of regional powers in various global sub-systems that strive for regional hegemony. Other powers, most importantly the United States, the only country that has achieved regional hegemony and can focus all resources on projecting power in other regional systems, will attempt to prevent such regional hegemons from rising out of the fear that they might project power into their own region in turn.

There is a number of aspiring powers around the globe, including what at some point had been summarized as the BRICS, consisting of the first-comers Brazil, India, and South Africa and the revisionist powers Russia and China, and other regional powers such as Nigeria or Iran. This thesis focuses on the biggest challenger for the US unipolar system, China, and her impact on the East Asian subsystem and the provoked reaction by the regional power Japan. China is not only a rising peer-competitor for the United States, but also located in a region that is the centre of global trade flows, with more than half of the world's annual maritime trade passing the South China Sea alone.[2] Rapid growth since the late 1970s has not only multiplied China's latent power, but also allowed there to transform it into hard power and power projection capability. This process is accompanied by rising tensions with Japan, and smaller nations bordering the South China Sea. Japan has embarked on a process of "normalization", returning from a unique form of strategic military disengagement that was enabled by Japan's geographical position and the alliance with the United States. "Normalization" refers to a re-emergence of Japanese hard power and an interest orientated foreign policy.

A watershed moment for East Asia's regional powers was the third Taiwan crisis in 1995/1996. Together with the first Iraq War in 1991, and subsequently by the NATO intervention in Yugoslavia in 1999, the Taiwan Strait crisis displayed US superiority to the strategists of the

[1] Fukuyama 1992
[2] Fensom 2016

People's Liberation Army. The events significantly shaped the modernization of China's military. Despite common misconceptions that the US Navy sent to two carrier battle groups through the Taiwan Strait to display resolve, they only operated in the vicinity of the island.



Map 1 – Introduction to East Asia's maritime geography

Coastal defence was a main task for the PLA and her navy since their creation.[3] Since the carriers were out of range of Chinese shore-based missiles, but could have still engaged with their air wing, it underlined the need for Chinese long-range stand-off weapons. Japan on the other hand observed Chinese missile tests in the East China Sea with concern. The archipelagic power herself had slowly begun increasing her defensive military capability due to alliance obligations, but the PLA's demonstration of a ballistic missile programme was a first indicator of an emerging Chinese threat to Japan's southwestern islands in the Ryukyu passage ways.[4] This threat would rapidly expand in the years afterwards, triggering Japanese acquisition of de-facto offensive weapons to defend her territory. The United States was at first not directly impacted, as it took more than a decade for China's countermeasures to become visible, but her military started working on an offset as soon as the extent of Chinese military modernization became clear.

1.1 Aim of the Thesis: Offensive Realism and Geography

While Mearsheimer includes Japan and the rise of China in outlining his theory of offensive realism, his groundwork in "The Tragedy of Great Power Politics" primarily focuses on the case of European great power politics and the emergence of the United States as one, while handling Imperial Japan on the side. By including geography, offensive realism provides the analytical tools to understand the dynamics in how great powers leverage their hard power. Large parts of contemporary international relations literature unfortunately turn a blind eye on geography. While Mearsheimer outlines that large bodies of water present an obstacle for power projection, he does not apply this insight on contemporary East Asia in depth. This thesis therefore fills the gap by analysing power projection and national interest in the maritime environment of East Asia. The analysis focuses on answering the following questions.

How does maritime geography transform the core tenet of offensive realism that landpower determines great power status?

What are the main drivers of China's military modernization, and why does it result in Japan's 'normalization'?

What impact do the geographically determined shifts in the East Asian balance of power have on specific weapon systems and military reforms?

[3] Kondapalli 2000, 2038
[4] Hughes 2004, 45

To answer these questions, chapter 2 first assesses how the region of East Asia is defined, what its geographical characteristics are, and what regional powers are present in the sub-system. It also outlines the transformation of landpower projection in a maritime environment. Chapter 3 outlines the conceptualization of East Asia's geography from the Chinese perspective, how China's security environment and defence posture have evolved after the creation of the People's Republic, and what specific strategies and weapon systems China employs to counter perceived threats. Chapter 4 directly connects to the insights from chapter 3, summarizing the adaption of the United States military to China's military modernization, why Japan has moved from buck-passing to balancing with the US, and how this affects Japan's defence policy and behaviour as a regional great power. In this context buck-passing refers to Japan's behaviour of promoting US deterrence against the Soviet Union while staying on the sidelines, while balancing describes the evolving policy of increasing and subsequently adding Japanese hard power to that of the United States in order to offset China's rise.

The main approach of this thesis is to integrate macro- and micro-levels of security analysis, by tracing the influence of geography and geopolitics through the perceived security environment of East Asian powers and their defence posture, down to the (re-)organization of their army and the acquisition of new weapon systems.

1.2 Limitations of the Thesis

The focus on geopolitics, military strategy, and weapon systems is accompanied by various limitations. For this thesis three major obstacles had an impact: Data/Information availability, deception and lack of experience, and bias.

Data/Information availability. There are four main areas that the thesis draws information from to answer the research questions. First, academic discussions surrounding offensive realism. These sources are easily accessible. Second, statistical data for assessing the balance of power in East Asia. Data availability in this regard is good, although differences in the purchasing power parity of various countries complicate the interpretation of economic data. Additionally factors such as experience and technology prevent a simple comparison of military statistics. The third source are official documents outlining military strategy. Japan's Ministry of Defence displays high transparency and the needed documents are available in English. While the United States military only publishes shortened versions, as many documents are classified, the gaps can generally be filled by using other sources, such as public statements of commanders, press releases, and reports to congress. The most complicated situation arises in regard to China.

There is only a very limited number of military documents available, and the language barrier presents another obstacle. To bridge this gap interpretations by Western military analysts have been used instead. This increases the danger of a misconception of actual policy.

Deception and lack of experience. Deterrence and secrecy play central roles in military strategy. Any open source assessment of military capability, as I do in this thesis, does therefore run into problems in that regard. To solve the problem, I outline the acquisition policy of military technology by the United States, China, and Japan, and its declared purpose, but do not make a judgement in regards to actual capability. To a large extend even militaries themselves have only limited knowledge about the future success of strategy and technology, as long as they have not been employed against an enemy. While exercises and weapon tests make sure that they function as intended, the actual success always depends on overcoming countermeasures employed by the opponent. The US military's Millennium Challenge 2002 is a prime example, how even in a globally leading military force commandants have rigged an exercise to provide the desired results.[5] This is also the reason why military statistics cannot be simply compared, as mentioned above.

Bias. My open source analysis draws information from established magazines such as The Diplomat, The National Interest, Defense News, Popular Science, Foreign Affairs, and Foreign Policy, all of which provide comprehensive updates on military and geopolitically related events in East Asia. But deception and lack of experience have also a direct impact on observers. The combination of information shortage and deliberate ambiguity in military affairs, combined with chauvinism, often lead to overconfidence in the observer's origin or favoured country's military capabilities. Common clichés found are "Copycat China", the invincibility of US supercarriers, but also hysteria about China's "Wunderwaffen" (wonder weapons). This also affects members of the military themselves.

These limitations do not prevent the analysis of the geopolitical situation in East Asia, but require awareness and restraint throughout the analysis.

[5] Zenko 2015

2. The Western Pacific under Offensive Realism

Before engaging the thesis's main topic and the analysis of Chinese and Japanese policy shifts and their drivers, it is necessary to provide the theoretical bedrock first. There is a number of theories available to conceptualize the international system, and each holds its merit. For this specific topic, the analysis of the shifts in military power in East Asia, offensive realism as developed by John J. Mearsheimer is most applicable. As I show throughout chapters 2 and 3, Chinese behaviour develops as predicted by offensive realism. Peter Toft identifies four points of critique on offensive realism that have been stated by other academics and that I engage first.[6] The first two are interrelated and therefore I focus on them first, before engaging the third and fourth point on the next page.

First, critics state that Mearsheimer does not sufficiently explain why states strive for power maximisation instead of focusing on gains in relative power. Second, some respondents of the theory argue that power maximisation behaviour creates balancing coalitions, which in turn decrease the odds for any aspiring great power to start a successful hegemonic war. As states are rational actors, facing odds against them would force them to abandon their assertiveness. Ironically this critique is based on the defensive realist assumption that balancing is an iron law of international relations. Mearsheimer rebuts this argument by showing that cost-sensitive states tend to buck-pass to other powers instead of forming a coalition. He proves this at hand of the empirical record, though critics continue to state that there is no example of a successful hegemonic war by an aspiring power in modern history. While this is true, the fact that aspiring hegemonic powers such as Nazi Germany and Imperial Japan embarked on a hegemonic war in the first place, shows that they perceived that the odds were in their favour, as no balancing coalition deterred them from such an attempt. Only after total war broke out, did outside powers such as the US engage to prevent regional hegemons in Europa and Asia.

For the demographic behemoth China, it is quite obvious that in the medium and long run the odds are in her favour due to the potential latent and military power that can be developed out of her population size and due to the current rapid economic development. The Chinese regime also acts rational as it is assertive against individual opponents, but not in a way that has created any countering coalition yet. Nonetheless already now long-term development plans for the People's Liberation Army Navy (PLAN) exist. A blueprint for expansion of the PLAN to a global blue water navy was announced during the late 1980s, and current Chinese acquisition

[6] Toft 2005, 392-394

policy still follows this outline.[7] The modernization of the People's Liberation Army (PLA) force in the maritime realm and the strategy of anti-access area-denial are not solely aimed at securing Chinese interests and establishing hegemony in East Asia, but are also set to enable China to project power globally. Chapter 3 outlines how China's power maximisation maxim goes hand in hand with the extension of strategic frontiers. Throughout the last decades, the PLA's doctrine has been driven by the redefinition of strategic frontiers.[8] The growth of Chinese latent power goes hand in hand with an expansion of national interest and paradoxically an increasing insecurity due to the dependency on sea lines of communication (SLOC), driving the PRC's strategic frontiers south- and westwards towards the Indian Ocean. During the last decades China's resolve in securing these new strategic frontiers has led to armed clashes with Viet Nam around the Paracel and Spratly Islands, a standoff with the Philippines at Scarborough Shoal, and increased deployments of naval assets in the Indian Ocean. The vulnerability of her economic centre of gravity on the coast on the other hand has led to an extension of the strategic frontier eastwards into the Pacific. As explained in sub-chapter 2.4, this vulnerability arising from dependency on the high seas and the sea lines of communication running through them affects other actors, specifically Japan and Korea, even more.

The third and fourth critical points question Mearsheimer's integration of geography in his theory, especially the missing delimitation of regional systems, as well as the role of location. I limit my definition to the delimitation of the East Asian regional system, as used in this thesis. Chapter 2.1 further outlines my rationale, and consecutive sub-chapters describe why this regional system has tripolar characteristics. The role of location, specifically the nature of the stopping power of water, and the factors altering it, is further assessed in sub-chapter 2.4 and chapter 3.

2.1 The Regional System East Asia

As mentioned above, Mearsheimer's offensive realism provides the best theoretical framework to rationalize the balance of power in East Asia. According to offensive realism the international system can not only be assessed globally, but also regionally. It is useful to define regional great powers that do not hold this status on the global level. In fact, great powers aspire to become regional hegemons first, before leveraging this freedom to project power into nearby regions, with the goal of preventing the rise of regional hegemons there that in reverse could become a

[7] Kondapalli 2000, 2039-2040
[8] Shambaugh 2002, 68

threat for the own region. As regions are not closed systems, but rather sub-units of the global system, great powers will project power in nearby regions already before achieving hegemony.[9]

A hegemon is by Mearsheimer's definition "*a state that dominates the other states in the system*"[10]. While there are strong indicators that the world since 1991 is shaped as a unipolar system, there is no global hegemon as defined by offensive realism. Despite that the United States is the only great power able to project power globally and giving the international system therefore unipolar characteristics, she is not able to dominate all other great powers. This is due to the fact that there are powers in the system that would be able to sustain a serious war against the US if necessary, such as Russia or the People's Republic of China (PRC).[11] While being capable of restraining other great powers, the United States has been unable to prevent or reverse the annexation of Crimea and Chinese island reclamation in the South China Sea. As the United States controls the sea lanes in East Asia, it makes here the dominating power, as I further outline in sub-chapter 2.4. Nonetheless the US is also an outside power, therefore an offshore balancer, which diminishes her power projection capability. Looking at latent and hard power distribution in the system, East Asia has in fact tripolar characteristics.

East Asia can be divided in two subsystems: North East Asia and South East Asia. In terms of political entities this includes North East Asia with China, Japan, Mongolia, Taiwan, and the two Koreas, and South East Asia (SEA), compromising of both mainland SEA (Myanmar, Thailand, Laos, Cambodia, Viet Nam, Malaysia) and maritime SEA (Singapore, Indonesia, Timor Leste, Brunei Darussalam, Philippines). As maritime and mainland SEA are geographically defined, both Malaysia and Singapore can be included in either of the two. In general the region can be delimited at hand of geographic and economic features. Geographically, both Northeast Asia and Southeast Asia have two seas in their centre, the East and South China Seas. Map 3 on page 18 shows how the demographic centres of gravity of the nations in East Asia are concentrated in the wider coastal area of these seas. The unifying element of these two regions is China, which borders both seas, as well as the sea lines of communication (SLOCs) that run along the East Asian continental shelf.

[9] Mearsheimer 2001, 60-62
[10] Mearsheimer 2001, 60
[11] Mearsheimer 2001, 108

Map 2 – East Asia with subsystems and SLOCs (generalized; SLOCs identified on MarineTraffic)

There are also fringe states to this definition, such as Laos, Timor Leste, Myanmar, Mongolia, and Russia. I argue that they are part of the Southeast Asian system due to their political and economic integration. Landlocked Laos is in the heartland of the Southeast Asian mainland, and shares cultural similarities to Thailand, as well as it is integrated into an economic region along the Mekong, and is part of the Association of Southeast Asian Nations (ASEAN).[12] Timor Leste is similarly "island-locked" inside the Indonesian archipelago. Most remote are Myanmar and Russia, which both do not border the two central seas.

Considering her integration in the political and economic system, I consider Myanmar still as a part of the sub-region Southeast Asia. After all it is part of ASEAN, and her main export and import partners are East Asia nations. As of 2015 India, the great power in the South Asian regional system, only accounts for 7.8% of Myanmar's exports and 4.8% of her imports. China and Thailand, the two biggest trading partners, account for 67% of exports and 74% of imports. While India is Myanmar's third largest export destination, Singapore surpasses India as import

[12] Asian Development Bank 2017

origin by 7%.[13] Myanmar is therefore geographically a fringe state of both South and Southeast Asia, but politically and economically integrated in the latter. Russia on the other hand has territory in North East Asia, and is connected to the SLOCs there by the port of Vladivostok.[14]

I do not include Papua New Guinea as a fringe state, as it geographically belongs to Oceania, not the Asian continent. Mongolia on the other hand is a fringe state of the North East Asian sub-system, as in 2015 75% of her exports went to China, and nearly half of imports came from China, Japan, and South Korea.[15] Geographically very much on the inland edge of East Asia, Mongolia could also be integrated as a fringe state of a Central Asian regional system. As this thesis primarily focuses on great power dynamics, the regional system East Asia as defined is sufficient. Further research would be needed to conclude if the notion of fringe states between regional systems can be held up. As a next step I explain why East Asia has, despite the large number of political entities, tripolar characteristics.

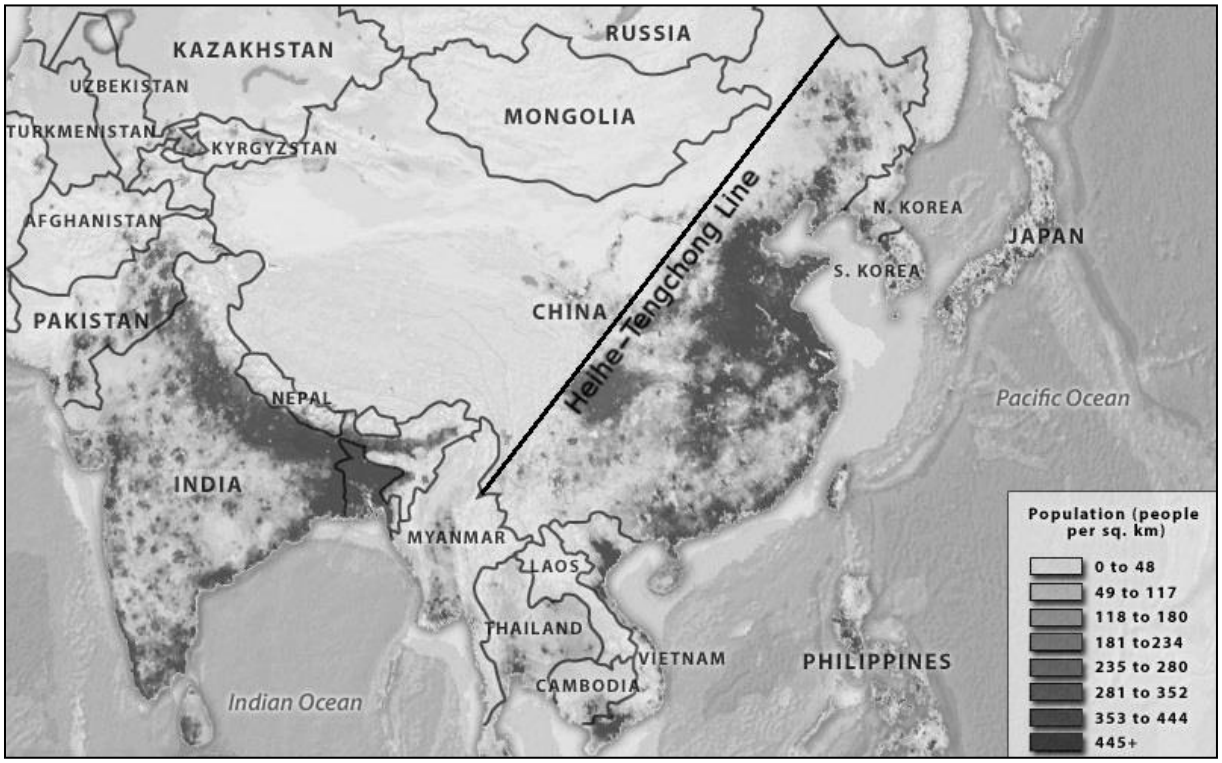
2.2 The Primacy of Landpower in a Maritime Environment

A central premise of offensive realism is the primacy of landpower. According to it great power military capability should primarily be measured by the size and capability of land armies. This obviously contradicts the assumption of Japan as a regional great power, as her land army is despite the technological advantage relatively small. Landpower is valued more by offensive realists, as only these forces are able to occupy and hold territory. Naval and air forces are important support elements that can provide firepower, transport ground troops, project landpower overseas, and severely damage an enemy's economic and transport infrastructure, but they cannot take territory themselves.[16]

While this generalisation makes sense on a global scale, it is not useful when assessing a maritime environment such as East Asia. The utilization of landpower is very much defined by geography. At land, mountain ranges and rivers represent barriers and determine how landpower can be projected. Space itself plays a role, as the size of a country determines the amount of landpower required to effectively control it. Both Napoleon and Hitler were not only ill prepared for the Russian winter, but the vastness of the country itself led to an overreach of their troops. In a maritime environment featuring archipelagic states, the stopping power of water possesses a widely extended role. Compared to continental environments, where the sea

[13] Observatory of Economic Complexity
[14] MarineTraffic
[15] Observatory of Economic Complexity
[16] Mearsheimer 2001, 105-109

functions as limitation rather than focal point, the stopping power of water is omnipresent. There are three reasons for this.



Map 3 – Population distribution in East and South Asia (Source: Stratfor 2012; Heihe-Tengchong Line added)

First of all, despite the practice of dividing East Asia (specifically South East Asia) in maritime and mainland areas, the military geography of the region is shaped by the sea. The three most populated countries after China, which are Indonesia, the Philippines, and Japan, are all island nations. On the continent itself, the bulk of the population is centred along the coasts as Map 3 displays. In the year 2000 90.8% of China's population were living southeast of the so called Heihe–Tengchong Line, resulting in the area having 22 times the population density of the area northwest of it. Due to the migration of Han-Chinese into Western China this number has fallen by 8% since the line was identified by Hu Huanyong in 1935, but this does not change the fact that aside from the Sichuan Basin the coastal plains of Western China remain her demographic and economic centre of gravity.[17]

This is also valid for the Korean peninsula, which is on three sides surrounded by the sea. For South Korea the peninsula actually turns into an island, as she has no land access to the rest of the continent due to the confrontation with the northern sister state. Viet Nam's population is

[17] Yue et al. 2003, 157

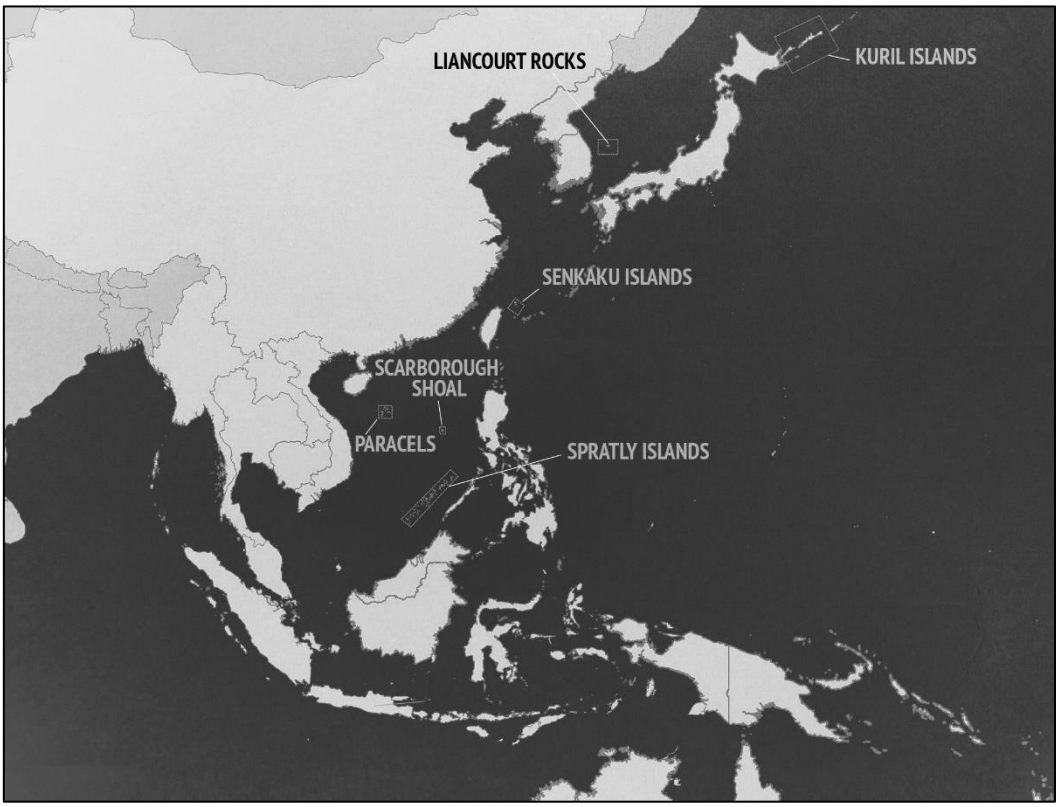
centred in the delta plains of the Red River and the Mekong, as is Thailand with the population centre Bangkok located in the Chao Phraya Delta.

Second, more than half of global maritime trade passes through the Straits of Malacca, Sunda, and Lombok, the geographical chokeholds separating the contested South China Sea from the Indian Ocean and East Asia from markets further in the West.[18] In 2014 China, South Korea, Japan, Indonesia, Thailand, Taiwan and Viet Nam belonged to the top 10 exporters of containerized cargo. Except for Thailand, all of them were also listed as members of the top 10 importers.[19] China, Japan and the Republic of Korea are also the three largest shipbuilding countries in the world.[20] Of their fossil fuel consumption, Japan imports 90% and South Korea 98%.[21] About two thirds of their oil imports pass through the South China Sea.[22] China on the other hand was the fifth largest oil producer in the world in 2016, but nonetheless has to import 60% of her oil consumption.[23] 82% of these imports travel through the Strait of Malacca, with roughly another 9% coming along other sea-lanes.[24]

The third reason is the nature of the territorial disputes between the great powers today. While there is a number of maritime disputes, two major flashpoints exist in the East and South China Sea. In the East China Sea Japan and China are in a direct confrontation regarding the Senkaku/Diaoyu Islands. The situation in the South China Sea is more complex, as five nations have various claims on parts or the whole of the Spratly Islands. The main contenders are China, Viet Nam and the Philippines, with Taiwan, Malaysia, and Brunei playing side roles. Outside powers such as the United States and Japan increasingly take over roles as offshore balancers and have increased cooperation with countries affected by assertive Chinese behaviour. Counted together, the Spratly Islands only add up to an area of ~7.8 km². Many of the features are submerged at high tide.[25] Nonetheless the small reefs are the key for promoting legal claims and establishing de facto military control. Driven by the interest in rich fisheries and potential oil and gas deposits, the involved countries have attempted to increase their foothold on the island chain. While in recent years the most extensive island reclamation has been conducted

[18] U.S. Energy Information Administration 2013, 8
[19] World Shipping Council: Trade Statistics
[20] UNCTAD 2016
[21] U.S. Energy Information Administration 2017a, 1 and U.S. Energy Information Administration 2017b, 1
[22]Kaplan 2014, 33
[23] CNN 2016: World's top oil producers and The World Factbook, 2015
[24] Bender and Rosen 2015
[25] U.S. Energy Information Administration 2013, 1

by China, Viet Nam, Malaysia, Taiwan and the Philippines have also enlarged some of the occupied islets.[26]



Map 4 – Maritime disputes in East Asia (Source: Center for Strategic and International Studies 2015; adapted)

The geography of East Asia fuses state survival with securing sea lines of communication (SLOC) at sea and the control of littoral areas, and gives the support forces navy and air force a different status. Prime example are the maritime disputes about various island features located in the South and East China Seas. In this case not one, but all contenders are confronted with the stopping power of water. Water has insofar stopping power as it impedes power projection and the use of landpower.[27] Usually this primarily affects offshore balancers.[28] In the specific case of maritime disputes though, both parties are affected by the stopping power of water. I elaborate on the example of the Sino-Japanese dispute in the East China Sea below.

For the maritime environment of East Asia the stopping power of water requires a reconceptualization beyond Mearsheimer's definition of it. He only provides a general description of how large bodies of water have historically impeded power projection. There are

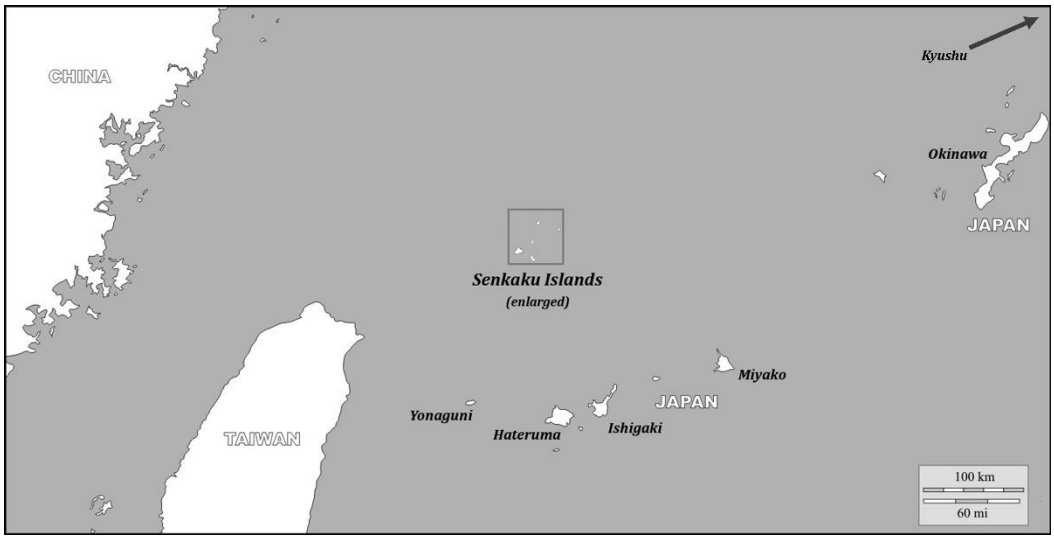
[26] Ratner 2017
[27] Mearsheimer 2001, 140
[28] Mearsheimer 2001, 275

few examples of amphibious landings, or assaults if opposed, against strongly defended territories during great power conflicts before the Second World War. The successful landings during the Second World War on the European continent on the other hand were enabled by strong fire support by the attacker's air force, as the Allies enjoyed air superiority at this point. Likewise, during the early phase of the Pacific War the Japanese were able to conduct a large number of amphibious landings and assaults due to their air superiority and weak opposition by regional forces. During the US "island-hopping" counter-offensive, amphibious assaults were bloody, but successful, as control of sea and air enabled the US forces to cut SLOCs between the contested islands and the Japanese home-islands, as well as provide massive firepower to the landing troops.[29]

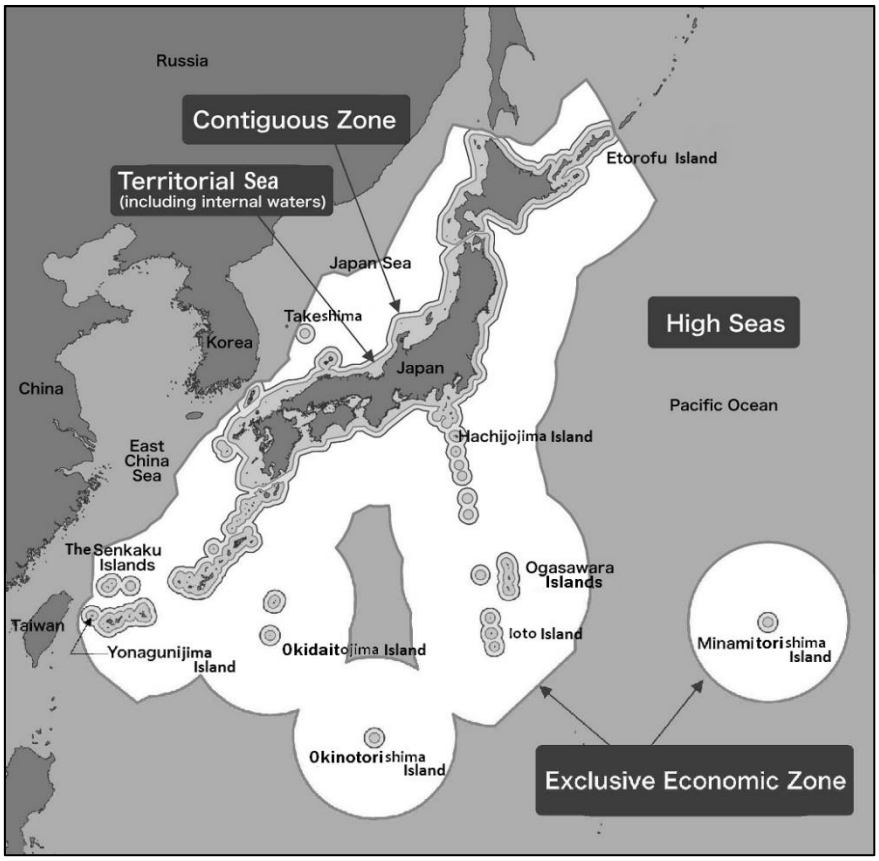
The stopping power of water can therefore be conceptualized as a function of distance, geography as it influences the available landing sites, and the power balance between defending and assaulting forces. This specifically includes the enablers of landpower projection, naval and air forces. Carrier strike groups have enabled the US Navy to project American power efficiently all around the globe. Her operations were even more eased as during the last seventy years the land-based opposition the US was confronted with had no or very limited capability to actually impede the use of American seapower. In fact, carriers have not fought an enemy that could seriously threatened them since Okinawa in 1945.[30] Considering the rising importance of land-to-sea power projection, new weapon systems that can be employed against maritime targets are altering this situation. The PLA's increased capabilities in this area are a focus of chapter 3.

Applied on East Asian island disputes, the importance of enablers can be further illustrated. The eight islands that are referred to as Senkaku/Diaoyu-Islands have an area of 5.53 km². The distance to the closest inhabited Japanese island, Yonaguni Island, is 150km. The distance to Okinawa increases to 410 km². And while the Senkaku/Diaoyu Islands are 170 km from Taiwan and 330 km from the Chinese mainland located, the closest Japanese main island Kyushu is nearly 900 km away.[31] Until the JSDF built and manned a radar station on Yonaguni Island in 2016, the Jieitai had no coastal observation in the area.[32]

[29] Mearsheimer 2001, 146-152
[30] Vandenengel 2017
[31] Ministry of Foreign Affairs of Japan 2016; distance to Kyushu measured with Google Earth
[32] Kubo and Kelly 2016



Map 5 – Location of the Seknaku/Diaoyu-Islands



Map 6 – Japanese geography with territorial waters and exclusive economic zones (Source: Akiyama 2013)

The situation is fundamentally different for archipelagic states such as Japan. Would Japan only consist of her four main islands, landpower might be sufficient to control the territory. Due to her island territories stretching hundreds and even thousands of kilometres from the main island group, naval enablement for landpower projection is essential. Keeping control of such small peripheral islands might appear secondary for state security. However, Japan is lacking major

resource deposits and is dependent on free SLOCs to the world market. Despite efforts to increase it, Japan's food self-sufficiency rate (calories) has remained as low as 39% in 2015. While agricultural output increased slightly due to government efforts, fish catches declined. Therefore Japan has to import about 60% of consumed calories and is heavily dependent on access to global fisheries.[33] The island nation is also heavily dependent on raw imports for her industry, aside from the nearly 100% import rate of primary energy carriers mentioned above.[34] The dependency on the import of raw materials gives additional significance to the findings of rare earth deposits in the exclusive economic zone (EEZ) of Japan's most remote island Minamitorishima.[35]

At its core, Japanese survival depends on the ability to access the global seas. The American blockade against Japan during World War 2 is in fact the only naval blockade recorded in history that was actually able to cripple a state's economy.[36] With the emergence of a Chinese blue water navy and henceforth an increased power projection capability into the Western Pacific, Japan likewise has not only to foster her control over the Senkaku Islands, but also peripheral islands, even those lying in her backyard in the Western Pacific.

While landpower remains the most important criteria for great power status, its projection is defined by geography. At land this primarily means how landpower can be leveraged, but in maritime environments dominated by archipelagic features leading to state interests being intertwined with access to the high seas, landpower projection is dependent on enabling forces. This means that support forces such as the navy, but also the air force and conventional missile forces, are upgraded to enablers of landpower projection. Japan is the prime exemplary case of a nation that is confronted with the stopping power of water when she exercises sovereignty over her territory, and is dependent on land-to-sea power projection to secure the SLOCs that in fact represent her life-lines.

As the stopping power of water is a function of distance, available landing sites, and balance of opposing forces, the enabling forces not only have an offensive, but also a defensive role, as they can impede hostile power projection. As the geographical features – distance and landing sites – are constant, only shifts in the balance of opposing forces are relevant for threat perception. Specifically amphibious forces stand out in importance, as they are needed for

[33] The Japan Times 2016
[34] The World Factbook, 2017
[35] Nikkei 2014
[36] Mearsheimer 2001, 114

amphibious assaults against shores that are held by opposing forces. Chapter 3 therefore concentrates on the build-up of Chinese amphibious and enabling forces, specifically the PLAN, during the last decades and how this has impacts the balance of power in East Asia. As this build-up represents a shift in the balance of opposing forces, Japanese threat perception has changed as well. Chapter 4 outlines how Japan has adapted her military doctrine and repositions her troops to offset these shifts.

2.3 The Latent Power Balance

The material preconditions that constitute a great power can be split into latent power and effective military power. Latent power comprises of the material and demographic capacity a state has. Therefore great powers are marked by a large population and great wealth. Mearsheimer suggests gross national product (GNP) to measure latent power, as it integrates not only wealth, but also population.[37] The World Bank has replaced the term GNP with gross national income (GNI), therefore I refer to this indicator instead.

Due to problems with data availability, Taiwan and North Korea are not included in table 1. Considering their small populations and economies, the missing data is of little relevance. While they have over proportionally strong militaries, their power projection capability is very limited as well. While Russia has to be seen as a great power on the global level, she is not a great power in East Asia. In 2015 Russia's Far East, which comprises one third of the country, was only inhabited by 6.1 million people, making it smaller than Hong Kong.[38] Despite its wealth of natural resources the region also only contributed 5.7% to Russia GDP, making the Far East economy only slightly larger than Myanmar's.[39] While considerable forces are stationed in Russia's Eastern Military District it is unlikely that they could be utilized for effective power projection, as they are overstretched considering the vastness of the region. As GNI for the Far East was not available, Russia is not included in the table.

GNI is both included as The World Bank's ATLAS method, as it better suits cross-country comparisons, and with purchasing power parity, to reflect domestic arms acquisitions. As these numbers can't be added up, China does not include the economies of Hong Kong and Macao.

[37] Mearsheimer 2001, 82-88
[38] Higgins 2016
[39] Trickett 2017

Country	GNI (ATLAS); bn US $	GNI (PPP); bn US $	Pop; M
United States	17994.15	18496.03	321.4
China	10838.15	19630.58	1371.2
Japan	4931.12	5371.12	127.0
Korea, Rep.	1389.47	1761.86	50.6
Indonesia	886.16	2752.71	257.6
Thailand	388.47	1054.68	68.0
Philippines	357.64	899.84	100.7
Malaysia	320.65	794.51	30.3
Hong Kong SAR, China	299.50	422.72	7.3
Singapore	288.31	450.31	5.5
Viet Nam	182.61	525.01	91.7
Myanmar	62.40	265.76	53.9
Macao SAR, China	39.47	60.22	0.6
Cambodia	16.68	51.40	15.6
Brunei Darussalam	16.09	34.76	0.4
Lao PDR	11.80	36.71	6.8
Mongolia	11.46	33.19	2.96
Timor Leste	2.71	5.39	1.18

Table 1 – East Asian countries by GNI (ATLAS), GNI (PPP), and population (Source: World Bank Open Data; 2015)

Regarding wealth, Japan is clearly in a different category than other states in the region. Its GNI (ATLAS) is greater than of all the other nations in the region aside from China. While the picture changes a little when considering PPP, Japan's wealth still nearly amounts to the combined GNI (PPP) of the next three wealthiest countries, South Korea, Indonesia, and Thailand. Additionally, these three countries together have a population three times the size of Japan. Japan's relatively small population, which in the region only comes in third behind Indonesia and is nearly as small as the Philippines', is also the main counter argument for her great power status. With an average age of nearly 47 years, which is 10 years higher than in China and 9 years higher than in the US, Japan is not only confronted with rapid overaging, but as a consequence also with a shrinking population.[40] According to a prognosis of the World Bank, sometime between 2030 and 2050 Japan will be overtaken in population size by both the Philippines and Viet Nam.[41]

Nonetheless, Japan is a high income country, a status reflected by the relation between its great wealth and relatively small population size. Aside from Japan, only South Korea, Taiwan and Brunei qualify as high income economies (aside from Macao and Hong Kong). The three nations rivalling Japan in population size are all low income economies. Likewise, China is a

[40] Central Intelligence Agency 2016
[41] The World Bank Group 2016

middle income economy, and this status as well as her huge population size diminishes the fact that her GNI is twice (ATLAS) or even fourfold (PPP) of Japan's.[42] Therefore, considering the large wealth, but also the demographic limitations of Japan, in economic terms she qualifies as a regional great power.

2.4 The Military Power Balance

The central criteria when it comes to hard power is actual military force. In 2016 out of the ten nations worldwide with the highest military expenditure, three are located in East Asia: China, Japan, and South Korea. The United States outspends not only the next eight nations combined, but also spends more than all countries in East Asia together.[43] Nonetheless, American global engagement and the stopping power of water limit US power projection in East Asia. The stopping power of water represents the diminishing effect of large bodies of water on landpower projection. I engage the concept of the stopping power of water further below.

Considering the size of armed forces, Japan has only the 8th smallest army in the region. The country not only gets overshadowed by demographic heavyweights such as Indonesia and Viet Nam, but also by smaller nations such as Thailand and by both of the Koreas. The numbers are deceiving though. Some countries have relatively large paramilitary forces that are counted to the overall size of armed forces. Indonesia for example has 280.000 paramilitaries, which is 41% of her overall military strength. Japan has one of the smallest armies in terms of percentage of its labour force, a result of the country's long standing pacifism, privileged island position that does not require a large land army, and reduced threat perception due to the Treaty of Mutual Cooperation and Security with the United States that enabled Japan to buck-pass during the last decades.

Due to the maritime environment and its characteristics a look at the maritime forces is helpful. Considering the number of soldiers serving in the Navy alone, the gap closes. Japan's Maritime Self-Defence Force currently has 45,350 members (excluding amphibious forces that are subordinated to the ground forces), while South Korea's navy numbers 70,000 soldiers, which includes marines. Other nations field similar naval forces, with 40,000 men serving in Viet Nam's, 65,000 in Indonesia's, and 44,000 in Thailand's naval forces. China's PLAN consists of 235,000 men.[44] While the two Koreas remain focused on land battles along the Demarcation

[42] The World Bank Group 2017
[43] SIPRI 2017
[44] Institute for Strategic Studies 2017, 278-338

Zone (DMZ) and sustain relatively large armies, other nations like China and Viet Nam have begun modernization and are cutting down numbers.

	Armed Forces			% of Labour force		Spending (Bn. US$)***		
Country Name	**1995***	**2017****	**% diff**	**1995***	**2015***	**1995**	**2016**	**% diff†**
United States	1,635,600	1,347,300	-17,63%	1,19%	0,83%	278.86	611.19	41%
China	4,130,000	2,843,000	-31,16%	0,60%	0,35%	12.61	215.18	720%
Japan	251,500	259,800	3,30%	0,38%	0,40%	49.96	46.13	16%
Korea (ROK)	641,000	634,500	-1,01%	2,99%	2,40%	16.09	36.78	84%
Taiwan	–	232,000	–	–	–	11.47	9.92	-16%
Singapore	65,500	147,600	125,34%	3,72%	4,70%	3.67	9.96	89%
Indonesia	460,500	675,500	46,69%	0,53%	0,54%	2.48	8.18	188%
Thailand	420,500	454,550	8,10%	1,31%	1,14%	3.85	5.88	20%
Viet Nam	622,000	522,000	-16,08%	1,72%	0,94%	–	5.02††	–
Malaysia	140,300	133,600	-4,78%	1,70%	0,93%	2.44	4.17	63%
Philippines	149,000	165,500	11,07%	0,53%	0,37%	1.70	3.9	61%
Korea (DPRK)	1,243,000	1,379,000	10,94%	9,35%	8,75%	–	–	–

** World Bank Open Data*
*** Institute for Strategic Studies 2017, 278-338 (consistent with The World Bank Group Databank 2015 statistics)*
**** SIPRI 2017*
† constant 2015 US$
†† estimated by SIPRI

Table 2 – Chosen East Asian and US armed forces, absolute and relative size, and defence spending (Sources in table)

The second central indictor is defence spending. Defence spending is in fact even trickier, as data availability is a major problem, specifically considering areas not covered by the official budget. Viet Nam does not provide official data as it is considered a state secret, and therefore only estimates exist. The Philippines' defence budget on the other hand includes a fund for veterans and hence is slightly overstated (according to SIPRI). In developed countries higher wages and pensions often eat up large shares of the budget and purchasing power parity plays a role for assessing domestic defence acquisitions. To display the overall trend of military expenditure, the last column to the right displays the changes between the 3rd Taiwan crisis in 1995 and the most recent data of 2016 in constant 2015 US$.

It appears Taiwan is the only country that actually has cut military expenditure. Japan displays a much smaller rise than her neighbours, but considering her status as a high-income country this translates in a considerable absolute rise. The ROK and Singapore have quite clear threat scenarios that triggered their increasing military expenditure, which I do not engage closer here. The relevant point is that other states in the region are not simply arming, but modernizing their militaries in a form that neither Japan nor Taiwan have to, due to the advanced technology status their forces already have. While both nations have their own major acquisitions pending, their military is not as outdated as the Chinese and Vietnamese Soviet-era systems. Absolute

military expenditure has massively grown due to economic development, but its relative share in percent of GDP has in many nations in fact declined or stagnated. The notable exception of course is the PRC and Japan with an increase of +0.2%, and +0.1%.

	Exp. % GDP		Exp. per capita	Exp. per soldier	
Country Name	**1995**	**2016**	**2016**	**2016**	**rel. to Japan**
United States	3,6%	3.3%	1886	453638	2.6
Japan	0,9%	1.0%	365	177546	1
China	1,7%*	1.9%*	156*	75686	0.43
Singapore	4,2%	3.4%	1749	67475	0.38
Korea (ROK)	3,1%*	2.7%	729	57423	0.33
Taiwan	4,1%	1.9%	424	42776	0.24
Malaysia	2,8%	1.4%	136	31208	0.18
*Philippines**	2,3%*	1.3%*	38*	23559	0.13
*Thailand**	2,3%*	1.5%	86	12936	0.07
Indonesia	1,2%	0.9%	31	12115	0.07
*Viet Nam***	–	2,3%	53	9612	0.05

** numbers in cursive are SIPRI estimates*
*** highly uncertain data*

Table 3 – Military expenditure of chosen East Asian countries and the US, percent of GDP, per capita, and per soldier (Source: SIPRI 2015)

Russia's Eastern Military District fields 8 armoured and 3 mechanized brigades, supported by various combat support elements, as well as air-defence. The Russian Pacific Fleet currently deploys 23 submarines, 7 principal surface combatants (of which 3 are in refit), and a number of coast guard and patrol vessels, as well a small contingent of amphibious and mine warfare vessels.[45] While Russia plans to increase the number of troops stationed on the Kuril Islands directly in the North of Japan, the troops have to be seen primarily in a defensive role.[46] Not only do they have to cover an extensive part of Russian territory, but the flight structure and size do not allow offensive operations. Russia also lacks the latent power in its East to play a major role in East Asia. Therefore I consider do not her a regional great power in East Asia.

Although Japan's per capita expenditure falls short of other high-income economies, there is little doubt that this is a deliberate choice rather than due to inability. In fact it shows the potential latent power that Japan could channel into the military if necessary. An important concept for modern militaries is force multiplication. Force multiplication refers to technology that enhances soldiers and increases their capabilities.[47] There is no statistic for force multiplication, so I use expenditure per soldier as an indicator. After all, the explosion of

[45] Institute for Strategic Studies 2017, 222-223
[46] Gady 2017
[47] Collins and Futter 2015, 4

defence spending goes hand in hand with the demand for high-technology on the battlefield. As the column on the right shows, Japan spends per soldier more than twice as much as China and 2.5 the amount of Singapore, with other nations lagging behind even more. As high-income economies have to spend more on wages and pensions, the gap might be slightly smaller for middle- and low-income nations than it appears. Nonetheless it is clear that Japan's Self Defence Forces (JSDF) have the highest force multiplier of the region's militaries.

2.5 East Asia as Tripolar System

As outlined, East Asia can be delimitated as regional system based on geography and the resulting economic features. The two subsystems Southeast and Northeast Asia are connected by the presence of China in both, as well as by the main sea lines of communication running along the continental shelf. East Asia is characterised by two important seas, the East and South China Seas, each a central node of one subsystem. Furthermore population and economic centres are concentrated along the coast, either because the nations are archipelagic states or because urban conglomerations have formed in river deltas and along coastlines.

This demographic and economic geography is intertwined with the dependence of all nations in the system on the sea lines of communication, for trade but also food imports. For the nations situated on the continent wealth and security depend on the SLOCs, for archipelagic states this dependency is ramped up and equates to state survival itself. As wealth, state survival, and power projection depend on naval and air forces, these support elements are promoted to enabling forces. States in the system cannot project power without them. In conclusion this means that the control of East Asian SLOCs enables regional hegemony. As all nations in the system are militarizing, although this is linked to more economic power, amphibious forces gain extra relevance. If the coast is strongly defended, or if the area of contestation is narrowed down to islands, amphibious forces are the only ones that can threaten or conduct an amphibious assault so that landpower can be projected afterwards. As the stopping power of water is a function of geography and the balance of power (projection), enabling forces are the alterable variable. Variations in it can explain shifts in the regional great power dynamic.

There are three great powers present in the system: China, Japan, and the United States. The United States is an offshore balancer, but possesses great naval strength and forward bases in Japan and the Western Pacific, China is a great power due to her rising latent power, based on a large population and rapid economic development, and the paralleling increase in hard power. Japan is a regional great power as well, since she has latent power based on a relatively large

population and a highly developed economy. While she has only limited landpower, her military forces are very modern and have she has a high level of spending per soldier. Additionally Japan's military is focused on her enabling forces, underlining her advantages and disadvantages as an island nation. Though not possessing nuclear weapons herself, experts assess that Japan could fairly quickly develop a nuclear deterrence if desired.[48] While Russia is present in the sub-system, she has minimal demographic and economic power in the relevant part of her territory, and her military forces are overstrained due to the vastness of her territory. Therefore she is not a great power in this sub-system.

[48] Topaloff 2017

3. China's Quest for Security

When it comes to the modernization of China's People's Liberation Army and its service branches, the last decade has seen the emergence of one single frame that is applied by most observers. This so called anti-access area-denial (A2AD) can be defined as strategy or as capability. It is important to note here that the term has been introduced by US defence analysts, since there are no official PLA documents that mention such a term.[49] Despite that, A2AD has proven to be a useful framework to assess the PLA's modernization and acquisition policy. Nonetheless it is worth remembering that not every PLA activity fits in this framework.

3.1 The Concept of Layered Defence: Anti-access Area-Denial

As the name already implies, the concept of A2AD consists of two each other supplementing components. While anti-access is applied to impede an opponent's forces from entering a contested area, or at least delay it, area-denial attempts to restrict the movement of such forces within such an area.[50] Observers assess that the People's Liberation Army (PLA) intends to implement such a strategy through its strategic missile, air, and naval forces, although it also extends into the realm of cyber- and anti-satellite warfare. It appears that these efforts take the form of a layered defence based on power projection into the Western Pacific. A2AD follows the core military maxim of defence in depth.

The People's Republic of China has a history of applying defence in depth when it comes to protecting the mainland. During the 1960s and 1970s, the leadership under Mao Zedong attempted to use the country's vastness as an asset and concentrated strategic industries further inland. The use of China's territorial and demographic size was ingrained in Mao's protracted war fighting strategy, which outlined a strategic retreat before taking the counter offensive against a superior, but at the turning point overstretched opponent.[51] With Deng Xiaoping's economic opening policy and the utilization of special economic zones (SEZ) located along the Chinese coast, this advantage vanished.[52] The reconceptualization of adjacent seas in Chinese defence thinking can be traced throughout the historic development of the PLA's naval strategy. During the first three decades after the establishment of the PLA Navy (PLAN), the naval forces were guided by the "coastal defence strategy". This strategy followed the three doctrines of safeguarding the waters, consolidating seashores, and defending cities. In 1953 Mao defined

[49] Cliff 2007, iii
[50] Krepinevich, Watts and Work 2003, ii
[51] Huang 1994, 13
[52] Cheng 2013

the PLAN's tasks as clearing the coast from nationalist forces, defending the same coast against a foreign invasion, and in assisting the army during a future invasion of Taiwan.[53] The limited Chinese naval power was therefore concentrated on the Chinese littoral, not beyond it. The continuing inability of the PLA to invade Taiwan also displays how Chinese naval power was not sufficient to project landpower on an island close by. It also displays the relevance of enabling forces in the stopping power of water's function. This balance is continuously shifting in the PRC's favour though.

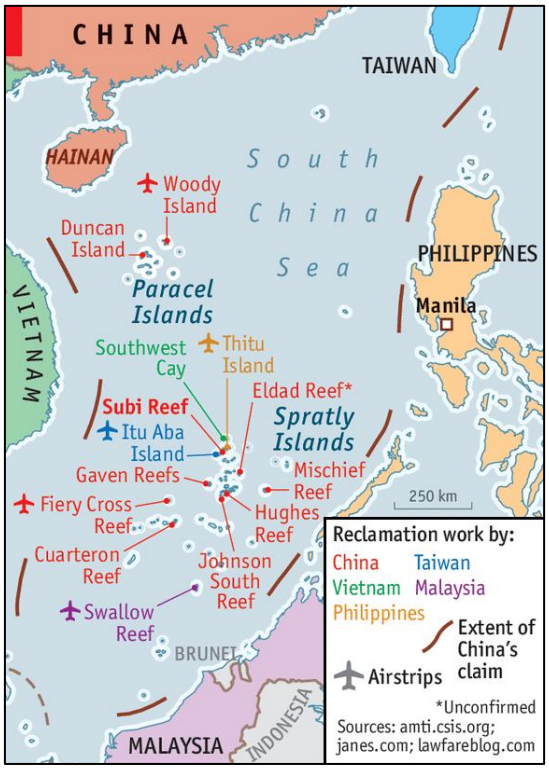
The strategic situation fundamentally changed during the 1970s. The Sino-Soviet split, including skirmishes on the Ussuri River, established a major threat on China's northern and western land borders. At the height of the tensions 44 Soviet divisions confronted the PRC on her northern border, and the Soviet Union issued threats against China's nuclear programme as well as the use of her own nuclear weapons.[54] Additionally to her massive land army, the Soviet Union had established herself also as a major naval power. The Soviet Okean 75 exercises, including large-scale amphibious operations, displayed the new maritime threat to China and were one of the main reasons for a PLA modernisation programme, including the navy, which was started in 1975. Other reasons included the rapid growth of China's merchant fleet, increased attention to island disputes, and the newly found interest in offshore oil deposits.[55]

With the creation of Special Economic Zones (SEZs) and Economic and Technological Development Zones under Deng Xiaoping in 1979, Chinese dependence on sea lines of communication (SLOCs) rapidly increased. As the PRC's economic center shifted towards the coast, so did the role of the PLAN evolve. Between 1982 and 1986 a strategy shift from "coastal defence" to "offshore defence" occurred. The PLAN commander at the time, Admiral Liu Huaqing, also announced a blueprint for the development of the Chinese navy. Until the year 2000 the PLAN was supposed to concentrate on training and improvement of its conventional forces to confront regional threats. During the current phase that started in 2000 and ends in 2020, the acquisition of several light aircraft carriers is planned, which will enable the PRC to project power into the Western Pacific and explore the global oceans. The acquisition of the former Soviet carrier "Liaoning" and the commissioning of the first domestically built carrier Type 001A "Shandong" are indicators that the PLA still follows the blueprint. For the current

[53] Kondapalli 2000, 2038
[54] Lüthi 2010, 341-342
[55] Huang 1994, 16

phase at least four carriers are planned, with one confirmed to be in construction.[56] During the final stage until 2040, the PLAN is set to evolve as a global seapower.[57] These benchmarks were later pushed back for 10 years, therefore the current phase will now end in 2030.[58]

Throughout the 1980s China's strategic frontlines were pushed further out, as the leadership became concerned about potential Indian hegemony in the Indian Ocean. The attention on South East Asian SLOCs and the importance of the Spratly Islands grew in kind.[59] Already in 1988 Chinese observers described the occupation of the Spratly Islands as paramount. Losing the Spratly Islands, so one author, would cut China's offshore defences down to 100 nautical miles. Considering Deng's economic test run in 14 coastal city and the rise of China's new "gold coast", this loss and following vulnerability of China's economic centre of gravity would equate being at the mercy of foreign powers once again. The article also draws a Malthusian picture of a future when national survival will be dependent on access to food, minerals and fossil fuels found in these maritime areas.[60]



Map 7 – South China Sea with occupied island features (The Economist 2015a)

[56] LaGrone 2017b
[57] Kondapalli 2000, 2039-2040
[58] Shambaugh 2002, 67
[59] Shambaugh 2002, 69
[60] Shen and Xiao 1988, 4-5 (JPRS translation 12-14)

The Chinese resolve to use power vacuums and secure the South China Sea by force and coercion if necessary can be seen at hand of the Battle of the Paracels in 1979 and the Johnson South Reef Skirmish in 1988, with both time Viet Nam playing the opponent, and the Scarborough Shoal stand-off that transferred control of the feature from the Philippines to the PRC in 2012.[61]

With the disintegration of the Soviet Union in 1991 the dynamic changed again. For once the strategic situation had completely shifted, as the land based Soviet threat had disappeared. The circumstances on the northern border additionally eased when the PRC signed a number of encouraging treaties with the successor state Russia. From a cooperative strategic partnership, to a demilitarization of the border, the collaboration evolved to the "Treaty of Good-Neighbourliness and Friendly Cooperation between the People's Republic of China and the Russian Federation". [62] While the treaty did not establish any form of alliance, under Article 9 it established an information exchange in the case of a third party threat to one of the two nations.[63] This threat, the main threat for the PRC at this point, came now solely from the high seas in form of the US Navy.

The First Gulf War provided valuable lessons for PLA strategists, as it displayed America's technological lead on the battlefield. Despite the exhaustive ground warfare that PLA observers expected after the Soviet debacle in Afghanistan, and the Iraq-Iran War, US forces declassed the battle-hardened Iraqi Army in a matter of days and weeks with the help of precision-guided munitions (PGM) and electronic warfare. To close the gap, China initiated a major arms acquisition from Russia during the first half of the 1990s. It also initiated a departure from her massive land army, towards a smaller, more professional, modern army. The accompanying cuts in manpower were already mentioned in chapter 2. Alarmed by the events in the Middle East, Chinese observers were quick to catch-up and follow the evolving discussion about a new revolution in military affairs through information warfare.[64]

NATO engagement in the Western Balkans during the Yugoslavian wars not only amplified Chinese fears that the United States was attempting to impose global hegemony, but reminded PLA planners of the implications of America's revolution in military affairs (RMA). Aside from the technological advance and the need to catch-up with it, the PLA cadre was relieved to

[61] Japanese Ministry of Defense 2016c, 4
[62] Shambaugh 2002, 287
[63] Ministry of Foreign Affairs of the People's Republic of China 2001
[64] Shambaugh 2002, 69-76

see that Serbian forces were able to develop countermeasures to the sustained bombing campaign by Western forces. They noted how Serbian forces were able to protect their air defence by spreading it out along highways, hiding it in caves, and only turning it on sporadically.

Applied for China, with her much vaster geography, it reduced the threat of a devastating air campaign. Nonetheless, problems remained such as the range of air power projection, enabled by cruise missiles and other stand-off PGMs, and the US ability to destroy electronic equipment with EMP (electromagnetic pulse) weapons. During the intervention US stealth bombers operated from bases as far away as North America and coalition jets used stand-off missiles that enabled them to evade Serbian pin-point defences. Subsequently the PLA adapted its warfighting strategy. First of all the three attacks (against stealth bombers, cruise missiles, and armed helicopters) and three defences program (defence from hostile recon and surveillance, PGMs, and electronic interference) were adopted. Second, it revised the role of strategic air defence and the utilization of offensive weapons against remote targets. Third, and most importantly, the PLAN was envisioned to obstruct hostile preparations in staging areas.[65]

3.2 Geography Revised: The Role of Island Chains

A core concept in East Asian maritime geography are so called island chains. The concept can be traced back to the early phase of the Cold War, when US planners conceptualized the Japan, Taiwan, and the Philippines as a barrier to check Soviet power projection.[66] Today Chinese as well as American sources define three islands chains, but there is no coherent approach.

Map 8 on the next page displays one version of the two islands chains located in the Western Pacific. In all conceptualizations Japan, the Ryukyu Islands and the Philippines are core elements of the first island chain. Others include South Korea, Taiwan, the northern coast of Borneo, or the Strait of Malacca. In very extensive versions, the first island chain is extended to Diego Garcia in the West and Kamchatka in the Northeast.[67] This follows the opinion of some PLA strategist that perceive even the Persian Gulf as a strategic frontier for China.[68] The second island chain lies further to the East and is drawn from the Japanese to the Mariana Islands and southwards to New Guinea. More extended versions extend the line towards Australia and New Zealand in the South, and the Aleutians in the North. A rarely mentioned

[65] Shambaugh 2002, 85-88
[66] Erickson and Wuthnow 2016, 6
[67] Erickson and Wuthnow 2016, 7-9
[68] Shambaugh 2002, 67

third island chain starts in the Aleutians, and crosses the Pacific southwards over the Hawaiian and Line Islands.[69]

Map 8 – East Asia with the First and Second Island Chains

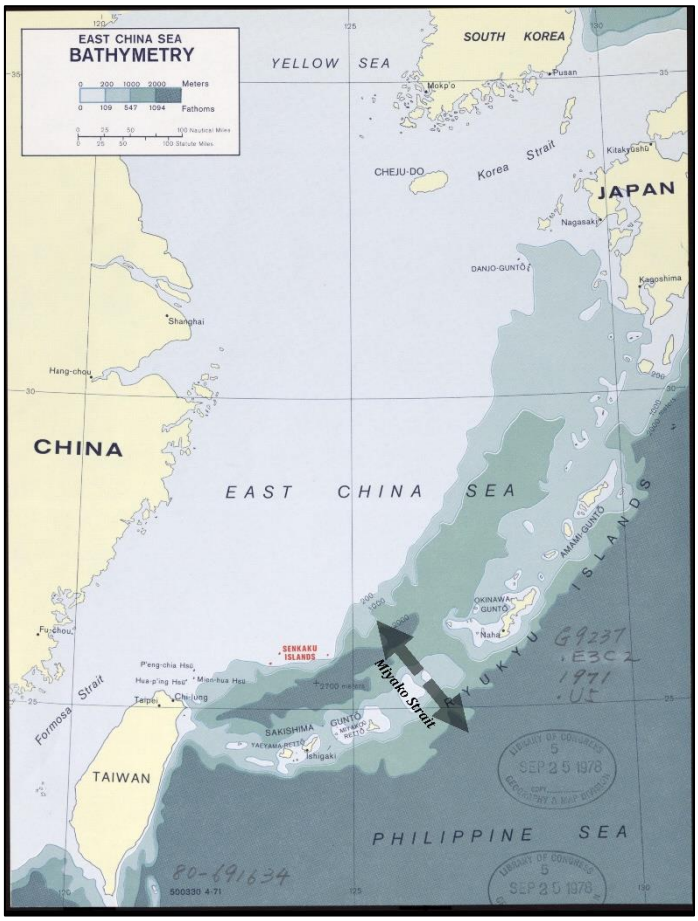
When it comes to Chinese strategic thinking, the island chains appear the first time in Admiral Liu's previously mentioned announcement outlining the switch to offshore defence. He only names the Ryukyu Islands and Taiwan as elements of the chain, and calls for the PLAN to strive for control of the waters between the chain and the Chinese mainland.[70] Since then islands chains have been mentioned in various forms by a large number of Chinese government, military, academic and media sources. Rather than the island chains as a whole, often specific elements within them are attributed with significance and varying roles are attributed to the islands chains. A study that assesses the use of the terms in Chinese sources identifies three broad interpretations for the island chains: barriers, springboards, and benchmarks.

The conceptualization of the chains as both barriers and springboards follows the perception that they are or could be utilized by foreign powers, specifically the US. As barriers, specifically

[69] Erickson and Wuthnow 2016, 7-11
[70] Ai 1988, 14

the first island chain is seen as blocking Chinese passage to the high seas. According to one PLAN senior captain, the US uses the chains to create a barrier that centres on Taiwan, and is anchored in South Korea, Japan, the Philippines, and Australia.

As Taiwan is seen as the lock in this chain, controlling or losing the island determines if China remains constrained to the west of the first island chain. Guam on the other hand is seen as springboard, which with its recently extended facilities would act as staging area to support the war effort in the first island chain. The extension of military facilities on Guam is by some observers seen as a reaction to growing Chinese ballistic missile capabilities that threaten US bases in the first island chain. Guam plays the same centre role in the second island chain as Taiwan does in the first, but with less significance.



Map 9 – Ryukyu passage ways and Miyako Strait (Source: Central Intelligence Agency 1978; adapted)

The Miyako Strait, which is part of the Ryukyu passage ways, and the Bashi Channel, part of the Luzon Strait, have received more and more attention by both the PLAN and the JSDF. Recent years have seen a rise in the number of Chinese incursions in the Western Pacific using these two strategic routes, with the aircraft carrier Liaoning doing so in late 2016. A pattern has

established in which the Japanese forces scramble jets in response to the passage of Chinese ships and aircraft through the Miyako Strait south of Okinawa.[71]

It is apparent in Chinese media as well as military literature that there is perceived shift in the balance of power. State media notes that the PRC increasingly overshadows Taiwan's military, but also that the island is economically more and more integrated with the mainland. At the same time the Philippines are perceived as a weak spot in the first island chain, as their military capability is very limited. The recent appeasing shifts towards China in the foreign policy of the Duterte government will most likely confirm this assessment.

Sources from various branches of the military outline the use of forces in relation to the island chains. Already in 2004 a military magazine described the wartime deployment of a destroyer flotilla along the first island chain, while submarines could engage targets in the second island chain. The PLA's "Science of Strategy" book imagines the area between the two chains as monitoring and deterrence zone. A 2011 book by China's Academy of Military Sciences on the other hand provides a blueprint for the use of carrier strike groups and nuclear attack submarines operating beyond the first island chain with support from the PLARF's land-based missile batteries and the PLAAF's (PLA Air Force) strategic strike units.[72] While these capabilities are yet missing, their acquisition is in process as examined in detail below. In the context of growing deployments of naval assets beyond the first chain, and the training for such future tasks, the island chains are also seen as benchmarks for growing Chinese capabilities.[73]

3.3 Storming the Beaches: The PLA's Amphibious Forces

The central indicator for landpower projection in a maritime environment are amphibious forces, as only they can conduct an amphibious assault and establish a bridgehead for following ground troops. Both the PLAGF (PLA Ground Force) and the PLAN command amphibious units, with the PLA Marine Corps (PLAMC) being subordinate to the latter. While working closely together, the PLAGF has concentrated its trainings on a Taiwan contingency, while the PLAMC focuses on operations against smaller islands, such as those in the South and East China Seas.[74] For a potential invasion of Taiwan, the PLA would have to commit all these resources. Until now though, the amphibious forces of PLAGF and PLAN lack a joint command structure.[75]

[71] Johnson 2017
[72] Erickson and Wuthnow 2016, 11-14
[73] Erickson and Wuthnow 2016, 14-15
[74] Office of the Secretary of Defense 2017, 83
[75] Gady 2017c

In the frame of her current reform programme, the PLAN has committed considerable resources to strengthen her amphibious warfare capacities. Through restructuring troops, China has already nearly doubled the size of the PLAMC to 20.000 marines. In a second much more massive push, the PLAMC will be increased to 100.000 marines. During the last decade the Corps has also received new armoured vehicles and fields now the ZTZ-96A main battle tanks (MBT) and the ZLT05 tracked amphibious assault vehicle, which is one of the fastest models of its class in the world.[76]

After the enlargement the PLAMC will consist of 6 brigades. Part of these troops will be stationed in China's newly acquired base in Djibouti, and a potential future base in Pakistan's Gwadar where a Chinese owned port represents a strategic node between the China-Pakistan Economic Corridor (CPEC) and the maritime leg of China's One Belt One Road (OBOR) initiative.[77] Therefore it appears to follow in the footsteps of the US Marine Corps (USMC). China's evacuation of her citizens in Yemen in 2015, conducted by the PLAN, is often cited as example for an expeditionary-type operation that is fairly new for the PLA and an evolving task for the PLAMC. The PLAMC is conducting year round exercises in various climates, reaching from desert to jungle, preparing for future missions all around the world. Some observers are worried that the PLAMC could also be used to engage in Southeast Asian countries under the pretext of protecting Chinese minorities.[78]

The PLAGF's amphibious mechanized infantry divisions (AMID) already underwent a major enlargement in 2015, which brought their number from 2 to 4 divisions and 30.000 to 60.000 soldiers. Each division fields 300 armoured and amphibious vehicles. For offshore operations, e.g. against Taiwan, the AMIDs are dependent on the amphibious transport capacity of the PLAN. While capable of conducting smaller offshore operations, the PLAN has not acquired the capacity yet to deploy all 4 AMIDs at the same time.[79] There are numerous reports that China is currently working on an amphibious assault ship, named Type 081. Amphibious assault ships are helicopter carriers, examples are the Japanese Izumo- and American America-classes. With about 40.000 tones the Type 081 would be about one and a half times the size of ships of the Izumo-class, but about 5.000 tones smaller than ships of the America-class.[80]

[76] Gady 2017c
[77] Chan 2017
[78] Newsham and Collin 2016
[79] Gady 2015
[80] Heginbotham et al. 2015, 204

Type	*Designation*	*Number*	*Capacity*
Landing Platform Dock			
Type 071	Yuzhao	4	4 Yuyi LCAC plus support vehicles; 800 troops, 60 armored vehicles, 4 helicopters
Landing Ship, Medium			
Type 073II	Yudeng	1	5 tanks or 500 troops
Type 074	Yuhai	12	2 tanks; 250troops
Type 073A	Yunshu	10	6 tanks
Landing Ship, Tank			
Type 072IIG	Yukan	4	10 tanks; 200 troops
Type 072II/III	Yuting I	10	10 tanks; 250 troops; 2 helicopters
Type 072A	Yuting II	9	4 LCVP; 10 tanks; 250 troops
Type 072B	Yuting III	6	4 LCVP; 10 tanks; 250 troops
Landing Craft			
Type 074A	Yubei	11	10 tanks or 150 troops
LCM		+117	PLAGF
LCU		+31 | 67	PLAGF | PLAN
LCAC	Yuyi/Zubr	3/2	PLAN
UCAC	Payi	12	PLAN
LC/M/U/AC/UCAC	Landing Craft/Medium/Utility/Air Cushioned/Utility Craft Air Cushioned		

Table 4 – PLA amphibious forces in 2017 (Source: Institute for Strategic Studies 2017, 280-282)

The PLAN also works on extending her cargo-transport capacity by acquiring heavy-lift ships like the H1183, which dramatically extend the radius that the new air-cushioned landing-craft of the Zubr-class (limited to 300km) can be deployed. In 2015 the Chinese government also issued legislation that obligates shipbuilders to technically prepare cargo and carrier ships for mobilization during wartime. Specifically roll-on/roll-off (RO/RO) ships could function as an important asset to expand a bridgehead, as follow-up armoured units can quickly unload and drive the offensive, once a primary amphibious assault gained foot on the coast. In using ships taken up from trade (STUFT) for the war effort, China follows in the footsteps of the British Royal Navy that has a long tradition of doing so, the last time during the Falklands War.[81]

A 2015 study has concluded that US capability to impede an invasion of Taiwan by attacking Chinse transports with submarines is continuously declining. The growth of the PLAN's fleet and her improving anti-submarine warfare (ASW) capability decrease the chances of halting a Taiwan campaign with submarines only.[82] While not yet being able to do so, the PLA gets closer to its goal of waging a quick campaign against Taiwan and establishing a "fait accompli" before international support can arrive. The PLAMC would already be able to conduct successful operations against small islands in the South China Sea or the Senkaku/Diaoyu

[81] Lin and Singer 2015a
[82] Heginbotham et al. 2015, 26

Islands.[83] Any amphibious operation is not only dependent on naval transport, but also the support by the enabling elements that add to their firepower, but also provide coverage.

3.4 The Ascent of China's Enabling Forces

Parallel to the People Republic of China's rapid economic growth and therefore growing interests offshore, and the aligning development of strategy, her military has continuously modernized and enhanced its capabilities. This sub-chapter takes a closer look at relevant developments in the area of Chinese enabling forces, but also the PLA's capacities to diminish foreign power projection in East Asia. As outlined before, active defence has moved towards engaging hostile forces offshore as early as feasible. Defensive A2AD capabilities can therefore play a role in enabling offensive actions, such as an invasion of Taiwan. Though all services of the PLA have seen major modernization efforts, only a handful of systems are relevant for the topic of this thesis. This chapter does therefore not provide a full overview of Chinese military modernization.

The central concern for US observers has been the rising importance of the PLA Rocket Force (PLARF), formerly called the Second Artillery Corps. The PLARF is a separate service branch of the PLA and is responsible for China's nuclear and land-based conventional ballistic missile arsenal. [84] The commissioning of new conventional surface-to-surface missiles (SSMs) increasingly threatens US bases and naval assets, especially aircraft carriers, in East Asia and the Western Pacific. Due to the focus on a Taiwan contingency the PLARF has already established a long-standing and extensive arsenal of short-range ballistic missiles (SRBMs) that is primarily aimed at the island. With the Dong-Feng 16 as latest addition, this arsenal of SRBMs continues to be modernized and extended.[85] Additionally to that the recent decade has seen a growth in the number of medium-range ballistic missiles (MRBMs) and cruise missiles.

Specifically the Dong-Feng 21 (DF-21) and DF-26 missiles have amended the PLARFs capability to strike against bases in the first and second island chains, as well as against opposing naval forces operating in the vicinity of them. The DF-21 is deployed in DF-21C land-attack and DF-21D anti-ship ballistic missile (ASBM) versions. The DF-21D is supposedly capable of sinking a US supercarrier with one strike, but there are differing opinions in how far the missile can actually overcome defensive measures and hit a moving target at sea.[86]

[83] Office of the Secretary of Defense 2017, 83
[84] Office of the Secretary of Defense 2017, 31
[85] Panda 2017
[86] Office of the Secretary of Defense 2017, 31

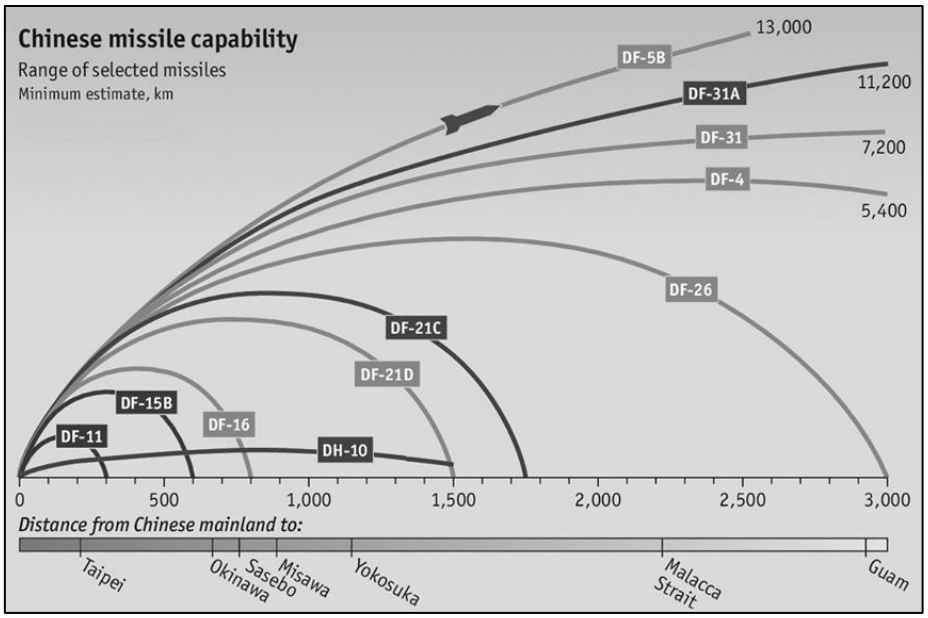


Figure 1 – Chinese ballistic missile ranges (Source: The Economist 2015b; adapted)

The main factor of overcoming ballistic missile defence (BMD) and the defences deployed by a carrier strike group is saturation.[87] The higher the number of launched missiles and used attack vectors, such as ballistic and cruise missiles, strike aircraft, submarines etc., they more likely such a saturation is achieved. For the DF-26 both a land-attack and an anti-ship version have been confirmed. The DF-26 is the first conventional ballistic missile that China could use to conduct precision strikes against military bases and carrier strike groups as far out as Guam, therefore threatening the main US staging area in the second island chain.[88]

Type	Number	Launchers	Range
ICBM	75 - 100	50-75	5400 - 13000+
MRBM	200 - 300	100-125	1500+
SRBM	1000 - 1200	250	300 - 1000

Table 5 – Chinese arsenal of ballistic missiles; conservative estimations (Source: Office of the Secretary of Defense 2017, 95)

The PLA has not only put new ballistic missiles into service, but also increased its cruise missile arsenal. It has used land-based cruise missiles since the 1950s, and developed its own modern variants as well as imported advanced Russian models. ASCMs are fielded by four of the PLA's five service branches, the PLAGF, the PLAAF, the PLAN, and the PLARF. There are only vague estimates about the size of China's cruise missile arsenal, but it is supposed to extend into several thousands.[89] The four service branches field ground-launched (GLCM), air-

[87] Hendrix 2013, 8
[88] Office of the Secretary of Defense 2017, 31
[89] Gormley, Erickson, and Yuan 2014, 16

launched (ALCM), and sea-launched (SLCM) cruise missiles. Today the PLAN's arsenal alone outnumbers the US Navy's by 3:1.[90] Platforms for the Chinese land-attack cruise missiles (LACMs), and anti-ship cruise missiles (ASCMs) include helicopters, fighter jets and bombers, as well as naval platforms of various sizes. Therefore not only missile destroyers such as of the Luyang series, but also smaller ships like Houbei missile boats outfitted with stealth features pose a threat.[91] Aside from the asymmetric nature of cruise missiles, the commissioning of new platforms has also extended their range. Air-launched LACMs carried by modernized H-6K bombers are able to reach Guam and even Hawaii, establishing another threat vector for US forces in the staging areas.

The CJ-20 LACM that is capable of doing so is part of the CJ-10 family, which is also fielded on ground and sea-based platforms. An 800km ranged ASCM version, the YJ-100, can be launched by H-6K bombers and the new Type 055 destroyers. The PLA also possesses supersonic ASCMs, such as the air-launched YJ-12 and YJ-18, deployed on the new Type 052D and 055 destroyers.[92] Modern Chinese cruise missiles feature redundant targeting systems and stealth-features, making them harder to jam. They in fact "out-stick" their US equivalent, the Harpoon missile, by a factor reaching up to 3.25.[93] As the YJ-12 has a range of 400km, Chinese aircraft would still be out of the range of AEGIS systems when releasing it, making the PLA's ALCMs effective stand-off weapons. Due to their low cost and deployment on 4th generation Chinese aircraft, US carrier groups could be confronted with salvos of several hundred ASCMs coming from multiple directions. At average defence systems would have a reaction time of only 45 seconds due to the supersonic speed of incoming missiles. Even against alerted ships equipped with defences ASCMs have an average success rate of 32%.[94] China is also developing a next generation cruise missile, the Hong Niao-2000 (HN-2000), which is expected to have a range of 4000km, and future global strike weapons.[95]

To effectively use her ASBMs and ASCMs, China needs sophisticated C4ISR and over-the-horizon (OTH) targeting capability. The PLAN has acquired sky wave and surface wave OTH radars, and the PLA as a whole is increasing early warning, electronic warfare, and satellite capacities.[96]

[90] Harris and Kerr 2017
[91] Gormley, Erickson, and Yuan 2014, 5
[92] Office of the Secretary of Defense 2017, 57
[93] Pradun 2011, 13
[94] Haddick 2014
[95] Easton 2009, 5
[96] Office of the Secretary of Defense 2017, 52-57

Sea-launched cruise missiles have already been deployed on PLAN ships since decades, but with an increasing blue-water capability of the latter their effective deployment range has risen alike. Since 2014 the PLAN has commissioned five of her new Type 052D Luyang III guided missile destroyers, of which 18 are planned in total.[97] Alone in 2017 another three Type 052D will be commissioned.[98] Production of the previous Type 052C continues as well, with 4 out of 12 already being operational.[99] While the Type 052C was the first Chinese ship with long-range air-defence capability, the advancement in technology has led to the Type 052D being dubbed "Chinese AEGIS". Additionally to its modern HQ-9 surface-to-air-missiles, the Luyang III carries with the YJ-18 one of the most recent additions to the Chinese ASCM arsenal. It has significantly increased the PLAN's ability in conducting land-attacks and anti-submarine warfare (ASW), although the latter remains a weakness.[100] The Type 052D Type's 346A active phased array radar is allegedly capable of detecting fifth-generation stealth aircraft such as the F-35 Lightning II.[101] China officially promotes her most recent generation of radar systems with such a capability.[102] The Luyang III series will most likely be part of any future Chinese carrier strike groups.[103]

Another candidate for membership in carrier strike groups is a new guided-missile destroyer, the new Type 055 Renhai class. Four or five of the ships are currently under construction and the first ship is expected to launch in 2017.[104] Being considerably larger than the Type 052D, the Type 055 will be more powerful than any other ship in East Asia.[105] Additionally the PLAN fleet structure is supplemented by Type 056 Jiangdao-class corvettes that have been commissioned in a rapid sequence, with at the moment 30 being in service and 10 in various stages of construction and preparation.[106] The Jiangdao-class also features an ASW version, the Type 056A. ASW has emerged as a focus of the PLAN, which is working hard to fill this capability gap. Aside from the Type 056A, China also operates 23 to 25 Type 054A Jiangkai II-class guided-missile frigates with ASW capability. Another five Type 054 are in production.[107] The PLA has acquired two new helicopter systems, the Z-18F and the Z-20 that

[97] Gady 2017a
[98] U.S. Naval Institute 2017
[99] Office of the Secretary of Defense 2017, 25
[100] Lin and Singer 2014
[101] Gady 2017a
[102] Office of the Secretary of Defense 2017, 51
[103] Panda 2016
[104] Yep 2017
[105] Lin and Singer 2016
[106] Tate 2017
[107] Gady 2017b

will be able to conduct ASW. The Type 055 is supposed to carry two Z-18F.[108] Since 2015 the PLAN also commands the Shaanxi Y-8Q, a counter-part to the American P-3C Orion and P-8 Poseidon ASW airplanes, and is expected to start utilizing UAVs for ASW in the near future. China also possesses a Yu-8 ASW-attack missile with a range of 100km, and mines that are ASW-optimized.[109] Additionally the PLA has begun to install seabed surveillance systems in the shallow near seas, which will increase the detection risk for submarines.[110] In 2017 the Chinese Academy of Sciences and the Tongji University in Shanghai funded $290 million project to build major sensor installations in the East and South China Sea. The scientific surveillance project can be seen as dual-use technology, as data is shared with other government agencies to protect Chinese interests and national security.[111]

Type	No.	Type	No.
Destroyers	21	Diesel Attack Submarines	48
Frigates	57	Ballistic Missile Submarines	4
Corvettes	27	Nuclear Attack Submarines	5
Missile boats	91	Other Patrol & Coastal Combatants	49
Minelayers	1	Logistics and Support	180

Table 6 – The PLA Navy in 2017, excluding amphibious units (Source: Institute for Strategic Studies 2017, 281-282)

The PLAN currently operates one former Soviet aircraft carrier, the Liaoning, and has launched a second indigenous design this year. At end of 2016 the Liaoning and her air wing have conducted fire drills in the Western Pacific for the first time.[112] Since early 2017 the Liaoning has been declared operational and represents now one of the strongest non-American carrier aviation groups in the world. Nonetheless, her capabilities are lagging far behind the American nuclear-powered Nimitz- and Ford-class supercarriers.[113] There are two important factors to consider though.

First, the Liaoning and probably also the second Chinese carrier, the Shandong, play the same training role that the HIJMS Hosho and the HMS Langley played for the Japanese and US navies when establishing their carrier fleets. Second, the planned role of the current generation of Chinese carriers seems to mirror the defensive Soviet Cold War-era doctrine rather than the expeditionary deployment of advanced US carriers. As a so called "bastion defence", the

[108] Goldstein 2015a
[109] Lin and Singer 2015b
[110] Goldstein 2016
[111] Parameswaran 2017a
[112] Panda 2016
[113] Lin and Singer 2017a

smaller Soviet carriers were assigned to establish a forward defensive perimeter and engage hostile ASW-aircraft, and conduct ASW and ASuW against penetrating naval forces. The purpose of them was to protect ballistic missile submarines bases, instead of protecting SLOCs at the high seas like US carrier battle groups were tasked to do during a potential escalation with the Soviet Union. Chinese carrier groups assigned in such a Soviet bastion defence role would perfectly fit in the suspected Chinese A2AD strategy. [114] While future nuclear-powered Chinese carriers will eventually take over expeditionary missions, the current generation of conventional-powered carriers appears to concentrate on such operations. Nonetheless already now the idea of future carrier operations close to Guam, Hawaii and the "American near seas" are proposed by populist Chinese newspapers.[115]

China's rapidly growing submarine force presents another facet of A2AD, as it remains focused on ASuW. Details of the PLAN's submarine programme are scarce, as it is one of the most classified parts of the Chinese military, but it appears that the gap to the US fleet is closing as well. Analysts think that the most recent nuclear attack submarine (SSN) put into service, the Type 093B "Shang-class" has technologically caught up with the American Los Angeles-class submarines. While modern Virginia- and Seawolf-class submarines are already in production and have begun to replace the aging LA-class submarine fleet, the latter will constitute the bulk of the US SSN force for years to come.[116] At the same time the Chinese navy is already developing its own follow-up with the Type 095 that is supposed to outpace the LA-class.[117]

As China's submarine programme has double the production capacity of the US, it is expected that by 2029 the undersea balance will be roughly 7:4 in China's favour.[118] While outnumbering the US Navy, the Chinese fleet will still include older models that are technologically inferior. A report by the Office of Naval Intelligence expects that during a conflict older diesel-electric submarines could be stationed along SLOCs and close to Chinese shores to interdict approaching enemy fleets. More advanced SSNs would operate in China's regional seas and beyond to conduct ASuW and reconnaissance.[119] In fact Chinese SSNs have conducted patrols and port-calls in the Indian Ocean since years, displaying their range and the importance Beijing gives the SLOCs running through the Indian Ocean and the region as a whole.[120]

[114] Farley 2017
[115] Panda 2016
[116] Majumdar 2016a
[117] Lin and Singer 2017b
[118] Majumdar 2016a and Lin and Singer 2017b
[119] Office of Naval Intelligence 2009, 21
[120] Ghosh 2015

The PLA's A2AD capability has many more facets, including new fighter jets, and improved air-defence and mine-warfare. Since 2016 China is producing her first indigenous fifth-generation fighter aircraft, the Chengdu J-20.[121] It is unlikely that the J-20 can keep up with American fifth-generation aircraft like the F-22 and F-35. The J-20's future role remains unclear, with opinions varying if the plane is an air-superiority fighter or a strike aircraft.[122] As the airplane's stealth features are focused on the front, analysts have argued that the J-20 could be deployed in a maritime long-range strike function against US ships.[123] A second fifth-generation stealth aircraft, the Shenyang J-31, is in development as well. This makes China the only other nation aside from the US that has two stealth fighter programmes. The J-31's design appears to be based on the American F-35, with the technology probably having been acquired through industrial espionage.[124]

Though technologically inferior to their US counterparts, the widespread introduction of the J-20 and J-31 into the Chinese military will decrease the expected kill-ratio for American planes to 3:1. While still an impressive number, attrition has become a relevant part for US war planning. According to US Air Force (USAF) officials, a 3:1 kill-ratio would already be problematic.[125] Additionally to that the PLAAF has deployed new P-15 air-to-air missiles on its fourth-generation J-11 jets. The P-15 has not only a longer range than the AIM-120, the USAF main air-to-air weapon, but due to the restrictions imposed by the stealth design, F-22 and F-35 can also carry less missiles than the J-11 jets. While the kill-ratio is significantly higher than against the J-20/J-31, the PLAAF fields more jets and has them concentrated in the region.[126]

The extended range of fifth-generation airplanes (1200 to 2600 km for the J-20) will allow them to operate along the first and second islands chains. Based on that the J-20 and J-31 could also be stationed further inland, and strikes against their bases would confront the USAF with China's improved air-defence network.[127] China has developed her own HQ-9 SAM with a range of 200km, based on Russian S-300 and American Patriot systems, and the HQ-12 with a range of 50km. The PLA has also acquired modern Russian S-400 SAMs. The new units have increased mobility, are equipped with anti-jam technology and are supplemented by offshore

[121] Yeo 2017
[122] Center for Strategic and International Studies 2017
[123] Heath, Gunness and Cooper 2016, 38-39
[124] Majumdar 2016b
[125] Majumdar 2016b
[126] Axe 2015
[127] Center for Strategic and International Studies 2017

early-warning aircraft and advanced radar systems that allegedly can detect stealth aircraft.[128] The extended range of the new systems also means that the airspace over Taiwan is in range of Chinese air-defence units.[129]

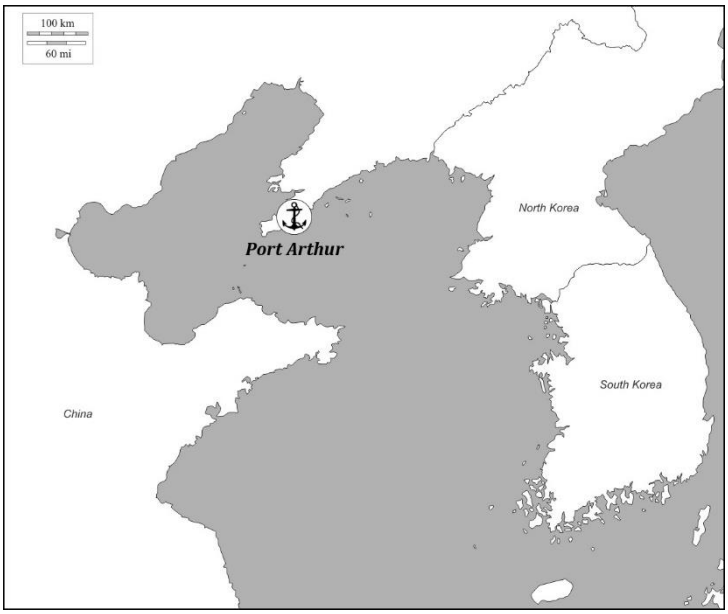
An extra layer to prevent US forces from accessing maritime areas, or at least slow them in doing so, is mine-warfare. The PLAN has a long history of developing this kind of warfare, and new weapon systems are still being introduced. Advanced Chinese mine warfare fields mines with capabilities to evade mine-sweeping, floating miens that engage only vessels above a certain tonnage (e.g. carriers), and include water-exit mines that release a missile able to engage ships and low-flying aircraft, e.g. those tasked with ASW. As Chinese submarines are able to lay minefields, they could blockade US and allied ports, or strategic waterways.[130] A study by China's National Defense University proposes a mine blockade against Taiwan in the case of an independence declaration. It describes an operation of laying 5000-7000 mines within less than a week, supplemented by another 7000 mines after that. The number of mines widely exceeds those laid during the operation against Japan during the Second World War, a highly successful undertaking as mentioned in chapter 2. Due to the smaller size of Taiwan, these minefields would also be much more concentrated than during the US operation against Japan.[131]

3.5 The Advantages of Geography

China's blue-water navy is growing, but far from rivalling the US Navy. While now capable to project power over at least the first island chain during peacetime, and preparing to secure strategic waterways such as the Miyako-Strait and the Bashi-Channel during wartime, her fleet is in a symbiosis with the PLARF and other services deploying land-to-sea power projection capability. With the establishment of defensive layers through anti-ship missiles, the PLAN has been relieved in defending the near-seas and this increasingly allows her to task ships with missions beyond the first island chain. Some observers have therefore described the Chinese navy as a "fortress fleet".[132] Alfred Thayer Mahan used the term to heavily criticize the Russian naval deployment during the Russo-Japanese war of 1904/05, which ended with a major victory of the Japanese after the latter sunk the Russian Pacific and Baltic fleets. The Russian navy was tasked to protect the fortress in Port Arthur and mostly stayed in the limited range of the

[128] Heginbotham et al. 2015, 98-99
[129] Heginbotham et al. 2015, 109
[130] Office of Naval Intelligence 2009, 29
[131] Goldstein 2015b
[132] Kotani 2013, 7-9

fortress's cannons. Instead of engaging the Japanese fleet and her SLOCs, interdicting troop transports across the Yellow Sea, the Russian Pacific Fleet stayed in range of the fortress guns and supported the defence with her firepower. In the end this could not save the fortress, and despite her overall numerical superiority the Russian Pacific and Baltic fleets were picked off separately by Admiral Togo's ships.



Map 10 – Location of Port Arthur on the Liaoning Peninsula (today: Lüshunkou District, Dalian)

Mahan makes a strong case for the fleet in being, since as consequence of the fortress fleet forces are split-up and can easily be defeated. He also states that the concepts of fortress fleet and fleet in being are by definition antagonisms. While the fortress fleet subordinates the fleet under the fortress, the "fleet in being" concept sees the fleet as centrepiece and assigns the fortress a supportive role.[133] A fleet in being refers to the indirect threat of a navy that is inferior and evades a decisive battle that she is posed to loose, but because of her very existence restricts the opponent's freedom of action. Even if in port, the enemy has to commit major naval forces to blockade it, as he has to fear an attack from the rear or to be flanked if he does not do so.[134]

In the 109 years since Mahan's writing fortresses have lost their significance, but a new form of land-to-sea power projection is on the rise that transforms the relationship between fortress fleet and fleet-in-being. The range of shore-based anti-ship ballistic missiles and the manoeuvrability of their transporter erector launchers (TELs) has redefined the notion of the fortress. Today, the Chinese mainland as a whole can be described as a "fortress", with a cannon

[133] Mahan 1918, 265-275
[134] Mahan 1918, 241-243

range easily exceeding 1000km. An inferior fleet – the PLAN – can therefore act as fleet in being, while having the ballistic missile support of a modern "fortress".[135]

The augmentation of the PLAN's firepower by shore-based missile batteries adds to the geographical advantage China possesses. Despite the fact that the first island chain and the military bases it harbours pose an obstacle for China, geography also favours the PLAN due to the vastness of the Pacific Ocean and the narrow straits connecting it with the East and South China Seas. The focus of any conflict between the American superpower and its coming peer competitor will lie on East Asia, be it in Taiwan, the South China Sea or the Ryukyu passage ways. This means that US forces have to sustain SLOCs reaching thousands of miles over the Pacific, and fight their way through the strategic maritime straits between Japan, Taiwan, and the Philippines. This implies facing ever more complex layers of anti-ship missiles, surface ships, submarines and mine fields. Throughout that process the PLAN enjoys the advantage of using interior lines and profits from a principle that Clausewitz described as "culminating point of the attack" in regards to land-warfare.[136]

The concept of interior lines describes the fact that the defender's forces are closer to each other, enabling them to support each other and to shift the forces' mass centre. An attacker on the other hand has to operate along exterior lines that start distant from each other and converge towards the defender's position. [137] Clausewitz's "culminating point of the attack" describes the point at which an invading enemy force can no longer continue its advance into enemy territory due to attrition, overreach, and the opposing force.[138] Mao's protracted war fighting strategy, described in sub-chapter 3.1, very much follows this principle. While obviously the terms "invasion" and "territory" do not apply in this context, the culminating point of attack matters for the US Navy as she has to penetrate A2AD layers that extend far beyond the first island chain. Considering submarines, air-launched ASCMs, and a blue-water force operating offshore, US forces will face opposition as far out as the second island chain.

While details of Chinese strategy and doctrine are scarce, the official PLARF textbook "The Science of Second Artillery Campaigns" describes the use of missiles for such a purpose. The use of missiles outlined include firepower harassment strikes against a carrier and its support ships, concentrated fire assault against the main carrier, frontal firepower deterrence through

[135] Holmes 2010, 124
[136] Holmes 2010, 120-121
[137] Holmes 2010, 121-122
[138] Von Clausewitz 587-589

intimidation salvos, flank firepower expulsion that in combination with PLAN forces aims at diverting the carrier strike group away from vulnerable areas, and information assault to knock-out the carriers command and control systems.[139] All five missions fit neatly into the A2AD concept.

It is important to note here that the question if ASBMs can actually sink a carrier is somewhat moot. A mission kill alone would mean that a carrier strike group has to return back to the US homeland to undergo extensive repairs due to the carrier's complexity. Even the loss of support ships might require task forces to return to backward bases, for example if AEGIS destroyers and cruisers get hit air-defence could be compromised. The further out the PLA is able to engage and harass US ships, the more likely it is that US forces will reach their culminating point before reaching the direct operation theatre. And the further out carrier strike groups have to stay due to the combined threats of the PLA, the less sorties can be flown in support of forward based US and Allied Troops.[140]

3.6 The Impact: Shifting the Balance of Power

Chinese military strategists have drawn important lessons from US operations in Yugoslavia and Iraq. They have identified the importance of fielding stand-off weaponry, engaging hostile stand-off platforms early on and disrupting the staging areas of opposing forces. Applied on the East Asian and Pacific geography, this means that the PLAN and PLAAF are working hard to project power over the first island chain onto the second one, and beyond. A combination of sea- and airpower, as well as land-based missile forces, has established multiple defensive layers that extend deep into the Western Pacific. In an actual war, US troops would therefore face opposition as far out as the second island chain in their attempt to even enter the campaign theatre in East Asia's central seas itself.

The PLA and its services are still considerably lagging behind those of the US, due to American experience in both training and actual warfighting, but also because of the technological standard of US forces. With Chinese military technology lacking the sophistication of the American equivalent, the PLA has focused on compensating this disadvantage by higher numbers and asymmetric strategies. Large numbers of cheap cruise missile have been dispensed throughout the force structure and deployed on a wide array of old and new platforms. A striking

[139] Erickson 2009, 7-8
[140] Heginbotham et al. 2015, 80

example are the small Houbei-class missile patrol boats that feature a stealthy design and carry ASCMs. Similarly, the PLA is significantly outnumbering the US in the air and at sea.

The technological gap decreases every year though, as the PLA is committed to a rapid modernization program and trains for new contingencies. The advantage of American submarine warfare is shrinking due to a rapid expansion of ASW capabilities through high production rates of ASW capable ships, seabed surveillance and investments in new submarines. Likewise, fifth generation and modernized fourth generation aircraft combined with a modern strategic air defence are diminishing US airpower. Long-range strike aircraft has emerged as a threat for US ships, and together with ballistic missiles and LACMs threatens forward deployed troops in the first and second island chains. New ASBM missiles and a high number of modern ASCMs hold US Navy ships, specifically US carriers, at risk. Parallel to that the PLAGF and PLAN enlarge their amphibious forces and train them for future contingencies in adjacent seas and beyond.

The growth of Chinese military capabilities alters the balance of power in East Asia. While US total power is still increasing due to continued technological advances, the relative power margin is shrinking. This is a result of a closing gap in technology, a process that is naturally easier for backward countries, but also because geography has its advantages for China. While confronted with the island chains as barriers, the vastness of the Pacific presents a considerable obstacle for the United States. This stopping power of water is further altered by new Chinese technologies and strategies. China's increasing land-to-sea power projection capacity enables her fleet to roam further offshore and act as a blue-water navy. For the US, the stopping power of water increases therefore, while it decreases for Chinese troops. This has a considerable impact in a maritime environment, as outlined in chapter 2.

As other countries and even regional great powers like Japan are heavily dependent on SLOCs, controlling the East Asian littoral equates to regional hegemony. China has not achieved such a status yet, due to the balance of forces with Japan and the US, and because of the independence of Taiwan. But the PRC gets more and more capable to invade Taiwan, and could already seize islands in the East and South China Seas, although she would be facing a political backlash. Control of the Spratly Islands, but also the Sakishima-Islands in the Ryukyu passage ways (Map 9, page 37) would be decisive in controlling East Asian SLOCs. The threat perception of the US and Japan is therefore shifting. Specifically Japan, smaller than China but still a regional power, has been buck-passing with the US since her own leap for hegemony was repelled. As

the stopping power of water decreases for China, and the PLA is more and more capable of projecting landpower onto Japanese territory, specifically in her archipelagic periphery, Japan is moving towards balancing. Chapter 4 addresses the US reactions to shifts in the balance of power, and the Japanese endeavour to close the gap arising by the current dynamic.

4. Balancing the Threat: Allied Countermeasures

As outlined in the previous chapter, the modernization of China's military and the PLA's increasing capacity to operate in a larger geographical scope have an impact on both the United States and Japan. This chapter therefore addresses the adaption of the American and Japanese militaries to the new threat.

4.1 The American Response: Marines into the Fray

As a globally engaged power, the US military has to adapt to a number of new challenges, not only those arising in the Western Pacific. Despite that A2AD appears in nearly every threat assessment and is a major driver for reform and acquisition. In analogy to two previous offset strategies that negated the Warsaw Pact's numerical advantage by first using nuclear deterrence and later precision guided munitions (PGMs), the current efforts are called "third offset".[141] The third offset comprises of three relevant levels of US adaptation: strategy, service collaboration and regional basing.

The cornerstone of the US response to A2AD is the Joint Concept for Access and Maneuver in the Global Commons (JAM-GC). Building up on the previous Air Sea Battle (ASB) concept, JAM-GC now incorporates all of the main service branches. The ASB concept was primarily an outline for combined operations of US Navy and Air Force to take out the Chinese A2AD layers. Instead of pushing back PLA forces as a whole, carrier strike groups would pierce through the layers, strike C4ISR-centres and blind hostile forces, then decimate A2AD capabilities to regain freedom of action.[142] As this strategy requires a massive engagement of targets in mainland China and would result in civilian casualties early on in the conflict, the concept was criticised as being too escalatory. Since the PLARF uses the same type of TELs for conventional and nuclear tasks, engaging them could also push China in a "use 'em or lose 'em" dilemma, leading to nuclear escalation.[143] A different concept pondered by military and other observers, dubbed archipelagic defence, envisioned the deployment of land-based anti-ship capabilities on the first island chain.[144] With the integration of the US Army in the Air Sea Battle concept, which led to the creation of JAM-GC, this strategy has in some form arrived in official policy.[145]

[141] U.S. Department of Defense 2014
[142] Air-Sea Battle Office 2013, 5
[143] Kearn 2013, 139
[144] Krepinevich 2015
[145] Morris et al. 2015

Another approach would be a large-scale blockade of shipping in China's vicinity. As outlined in chapter 2 China is, despite being located on the continent, heavily dependent on maritime trade. Since a normal, close blockade is not feasible in face of shore-based missile batteries, this would be a distant blockade. The US Navy and allies would cut off SLOCs at maritime chokeholds like the Malacca Strait and strangle the Chinese economy.[146]

Map 11 – Maritime chokeholds on East Asia's southern approaches

Recent advances in high-altitude aerial precision mining that enable surgical blockades of strategic infrastructure and waterways would support such an operation.[147] While a distant blockade will be an important element in any war between the US and China, a war cannot be won with it. First of all, cutting off SLOCs along the East Asian littoral would affect all nations, not just China. Japan and South Korea would suffer alike, even if they are not in direct conflict with the PRC. Even if ships destined for other countries take alternative routes, the massive increase of range and time, and subsequent delays, would have a major impact on the economy of those states. The blockade could also not reverse the Chinese occupation of any island

[146] Stephen and Oelrich 2016, 9
[147] Pietrucha 2017

features or impede an operation against Taiwan.[148] Considering the rapidly growing transport-corridors established by OBOR, especially gas- and oil-pipelines connecting China to Central Asia, it is also unclear how effective such a blockade would be. While heavily dependent on maritime trade in peacetime, it is possible that China could sustain a war using domestic resources and imports by land. A future extension of infrastructure from Pakistan or Turkmenistan into Iran would establish a land-corridor between China and the Middle East. While land-based trade cannot substitute maritime trade, China might be able to survive with available energy resources anyway, bringing her in a much more favourable position than South Korea, Japan, or Taiwan.

Map 12 – Pipeline and railways corridors connecting China with Central Asia (Source: Farchy and Kinge 2016)

A central aim of JAM-GC is to increase the collaboration between the different services and enable them to support each other by projecting power into other domains. This new Multi-Domain Battle Concept aims at to establish cross-domain warfighting capabilities that one single commander can use.[149] While one of the US Navy's core tasks is to project power ashore, the US Army is now preparing to project landpower onto the water. Interestingly it appears that the US is actually taking lessons from the PLARF in this regard. The head of the US Pacific

[148] Wermeling 2016
[149] Eckstein 2017

Command Admiral Harry Harris has been one of the main proponents of a closer integration of Navy and Army. He has proposed to link the Army's land-based missile defence network into the US Navy's Naval Integrated Fire Control-Counter Air architecture (NIFC-CA). NIFC-CA allows information exchange between different sensors and shooters of a carrier strike group, so that the most effective system can engage targets. Linking the Army into the system would allow it to provide firepower support for US ships in the range of such land-based systems.[150] Following this the Army has begun to adapt its Army Tactical Missile System (ATACMS), and by using new missiles seekers will be able to fire at naval targets up to 300km offshore.[151] During the RIMPAC 2018 exercises the US Army plans to fire such a naval strike missile for the first time against a ship.[152] The Heritage Foundation also proposes that the US Army establishes expeditionary coastal artillery brigades that would take over coastal defence.[153]

The US Marine Corps prime task is to fight in maritime environments and it has a long history of doing so together with the Navy. But here as well closer cooperation and new operations are implemented. The USMC Forces Pacific are currently preparing to deploy their M142 High Mobility Artillery Rocket System (HIMARS) on ships and use it to fire against other naval targets.[154] As the major bases in the first and second island chains are increasingly threatened by Chinese missiles, the USMC has adapted future operations to spread out its resources. The expeditionary advance base operations concept envisions marines to use long-range aircraft to gain entrance to the islands of the first island chain. From there they would use anti-ship weaponry to harass Chinese military vessels, while at the same time stay mobile and hide from enemy forces. Thereby the marines open windows of opportunity and enable access for carrier strike groups and amphibious ships, which can operate in the vicinity.[155] The concept, which is part of the training schedule since 2016, mirrors similar operations of the Pacific War, when troops ashore provided coverage for the US Navy.[156] Another design is the littoral combat group, a combination of amphibious vessels, a USMC expeditionary force, and surface vessels that provide coverage. These formations would operate independently in an A2AD environment.[157]

[150] LaGrone 2017a
[151] Mehta 2016
[152] Eckstein 2017c
[153] Cheng 2016
[154] Eckstein 2017c
[155] Eckstein 2017b
[156] Eckstein 2016
[157] Eckstein 2017b

Not surprisingly the biggest discussion has surrounded the US Navy, with various proposals to adapt the future fleet structure to the A2AD challenge. Due to the risk to high-value vessels such as carriers and the need for more firepower, the Navy has already adopted the concept of distributed lethality in 2015. Distributed lethality aims at equipping support vessels and small surface combatants with high firepower, specifically ASCMs.[158] Currently the Long-Range Anti-Ship Missile (LRASM) is in development, which can be deployed on fourth- and fifth generation aircraft, as well as on surface ships, and presents the American answer to the YJ-12 ASCM. A new version of the Harpoon and the Kongsberg Naval Strike Missile will be the short-range counterparts to the LRASM.[159]

The 2016 Navy Force Structure Assessment outlines the need for a 653-ship navy to enable global prompt warfighting, or a 459-ship navy to conduct ongoing security, counter-terrorism and counter-trafficking operations. But due to budgetary constraints the Navy only pushes to increase the future number of ships from the currently planned 308 to over 355.[160]

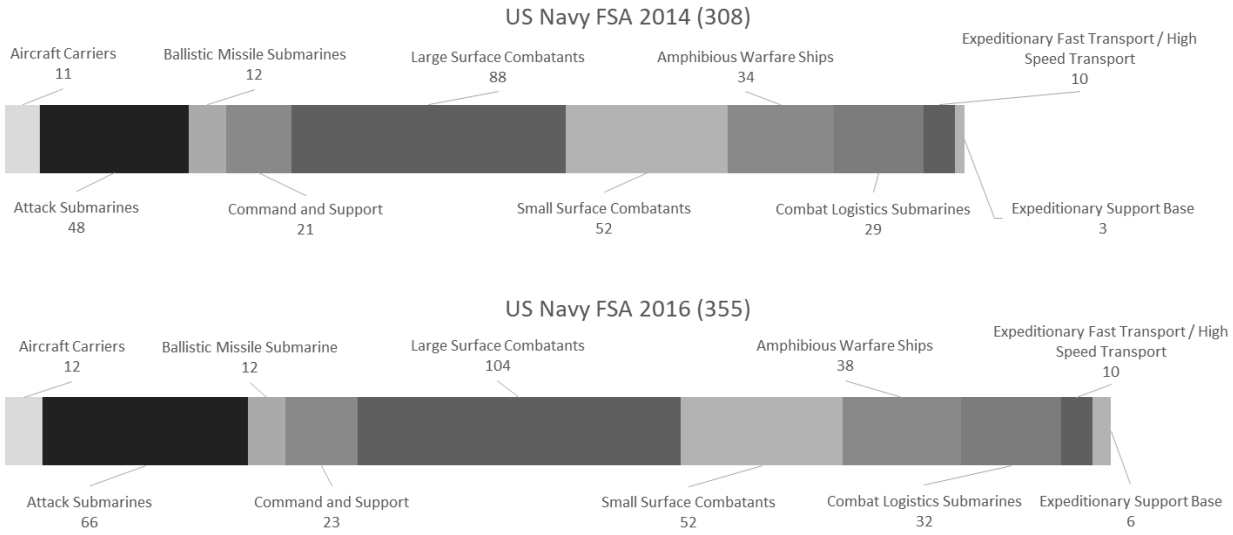


Figure 2 – US Navy Force Structure Assessment 2014 and 2016 (Source: U.S. Naval Institute News 2016, 3)

The 2016 Navy FSA aims at expanding amphibious warfare capability, the attack submarine fleet, and to strengthen carrier strike groups by employing more large surface combatants. The plan also foresees to add an amphibious warfare ship, also called landing helicopter assault (LHA) ship and two littoral combat ships (LCS) to the carrier strike groups. By stationing strike fighters on the LHA, the carrier strike groups will have increased airpower and ISR capability.

[158] Freedberg 2015
[159] Gady 2017d
[160] U.S. Naval Institute News 2016, 2

The FSA also envisions long-range strike surface action groups (SAG) consisting of Arleigh Burke-class guided missile destroyers and LCSs that will hunt surface targets in the theatre, and integrated air and missile defence SAGs that would provide air coverage for critical infrastructure. It also outlines the future use of new light carriers and unmanned aerial, surface, and underwater vehicles.[161]

Another study by the Center for Strategic and Budgetary Assessments focuses on amphibious warfare as well and the need to reducing dependence on carrier strike groups. It outlines task groups consisting of light carriers and amphibious ready groups that are supported by frigates with air defences, as well as anti-ship guided-missile corvettes. The light carriers, adapted LHAs of the America-class, would carry fixed-wing aircraft instead of only helicopters.[162] To drive distributed lethality forward, the Navy is re-evaluating the coming new frigate design to increase her firepower. Since the current concept only includes self-defence anti-ship and anti-air systems, the adaption includes extending its firepower so that the frigate can protect supply ships and secure SLOCs.[163] The frigate is therefore supposed to fill the gaps created by short-comings of the LCS, since ships of the class were already outgunned by Chinese frigates that stalked them during South China Sea patrols.[164]

The US Pacific Command has been the main proponent of a larger and more capable US Navy, as well as her integration with other services. Aside from establishing a multi-domain task force, forward deployement has become the main answer to the A2AD threat.[165] One option considered is the forward deployment of a second US supercarrier in Japan, but this would require negotiations with Japan.[166] While shortages in the SSN fleet persist, forward deployed airpower has increased already.[167] The US Navy has acquired 17 new Poseidon P-8A anti-ASW aircrafts that are able to detect submarines and deploy torpedoes from heights up to 9000 meters, which safeguards the planes from water-exit mines.[168] The US Air Force has also deployed four of her B-1B Lancer heavy strategic bombers to Guam.[169] The USMC on the other hand pulls

[161] Eckstein and LaGrone 2017
[162] Eckstein and LaGrone 2017
[163] Cavas 2017a
[164] Stashwick 2017
[165] Eckstein 2017c
[166] LaGrone and Grady 2016
[167] Eckstein 2017a
[168] Gady 2017e
[169] Gady 2017f

5000 marines back from Japan and will relocate them to Guam in two phases until 2021 and 2026.[170]

The threat of Chinese A2AD and increased naval blue-power projection capability has clearly triggered a response in the US military. The adaption includes new strategies, an intensification of joint operations, and the introduction of new technologies. Despite the already reduced plans, the budget for 2017 did not provide the funds for extending the Navy to 355-ships.[171] Budgetary constraints remain the main obstacle. About two thirds of the US Navy's aircraft are grounded, and a large number of vessels are delayed in the maintenance schedule. This affects carriers as well as submarines, with many being 4 years behind schedule and one Los Angeles-class SSN even losing certification. At the same time the US Navy lacks funds to redeploy her sailors, and about 15% of facilities require repair or reconstruction.[172] Without a second forward deployed carrier, the US Pacific Command could be faced with "gaps" in carrier presence due to the prolonged maintenance.[173] It also faces ordonnance shortages for both ships and airplanes.[174] With continued budget restraints and confronting what Secretary of Defence Mattis described as "bow wave" of modernizations, it is doubtful that the US can fully absorb the shock of China's military modernization.[175]

4.2 Japan: From Buck-passing to Balancing

In the context of outlining the concepts fortress fleet and fleet in being, Japan's decisive victory against the Russian Empire during the Russo-Japanese War 1904/1905 was outlined. Ten years after the First Sino-Japanese War, Japan was the first non-European nation that beat a European power. Another five years later Japan annexed Korea, after already having acquired Taiwan in 1905. Japan was well on its way toward a hegemonic war in East Asia. After establishing the puppet state Manchukuo in Manchuria in 1931, Japan embarked on the Second Sino-Japanese War in 1937 and invaded mainland China. Following a brutal, but successful start, the Imperial Japanese Army got itself stuck in its most bloody war. Parallel to that advances into French Indochina in 1941 followed, and in the same year the Pacific War with the US and European powers kicked-off by the attack on Pearl Harbour and incursions into the European colonies in maritime Southeast Asia. Four years later, US forces had rolled back Japanese advances, by

[170] Daleno 2016
[171] Grady 2017
[172] Cavas 2017b
[173] Clark and Sloman 2015, 7
[174] Eckstein 2017a
[175] Grady 2017

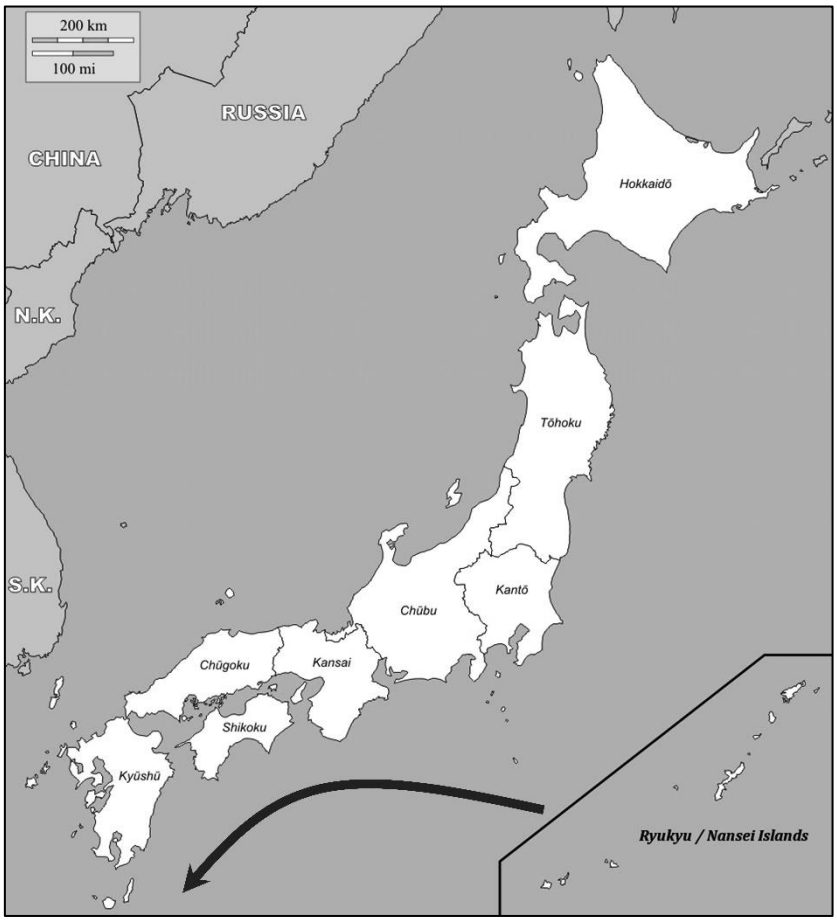
fighting bloody "island hoping" battles in the Pacific and employing the single most successful naval blockade against the Japanese Islands. Facing two nuclear bombs and the threat of parallel land-invasions by US and Soviet forces, the country capitulated.[176]

US occupation brought Japan not only into the Western camp of the starting Cold War, but also established major legal hurdles for re-armament through the "peace constitution". Profiting from a security umbrella provided by the US, Japan quickly took advantage of the situation. Her first Prime Minister Shigeru Yoshida established what came to be known as "Yoshida doctrine". In the 1951 Security Treaty between the United States and Japan, the US, in exchange for forward basing in the strategic first island chain, committed to a one-way security obligation towards Japan. The former potential regional hegemon on the other hand was free to concentrate all resources on rapid economic development, while conducting only a very limited re-armament. Japan in fact profited from the windfall gains created by the wars in Korea and Viet Nam, when Japan acted as important supplier for the US military.[177] Yoshida himself perceived the agreement that brought Japan under the US nuclear umbrella as temporary.[178] The revision of the treaty in 1960 established the Treaty of Mutual Cooperation and Security between the United States and Japan. It re-established the final pieces of Japanese sovereignty, as the treaty of 1951 allowed the US to intervene with in Japanese domestic uprisings, but obliged the country to supply the US bases in Japan.

Only nine years later, Richard Nixon's Guam doctrine outlined US disengagement from East Asia and send shockwaves through her alliances. Reinforcing existing treaty obligations, the Guam doctrine called upon treaty partners to take over primary responsibility of defence. Japan was able to cushion the new obligations, and Nixon into turn pushed Japan to recognize the importance of South Korea and Taiwan, by included the Korea- and Taiwan-clauses in the Nixon-Sato communique of 1969.[179] While the Japanese leadership was reluctant to commit to support US troops in a contingency there, the ruling Liberal Democratic Party (LDP) herself entertained the fear of a "red flag over Busan" in public statements.[180] The idea of Korea as a "dagger" aiming at the Japanese heartland has a long history in Japanese military thinking, reaching back to Toyotomi Hideyoshi and his failed campaigns against Korea at the end of 16th

[176] Wilson 2013 and Farley 2016
[177] Dingman 1993, 41-44
[178] Hughes 2004, 21, 22
[179] Yoshihide 2001, 140
[180] Lee 2011, 438

century, and played an important role in Imperial Japan's annexation of the peninsula.[181] Likewise, Taiwan plays not only an important geopolitical role for the security of the Chinese coast, but also for the security of Japan's Okinawa Prefecture, and subsequently most southern main island Kyushu. An important proponent for the annexation of Taiwan at the end of the First Sino-Japanese War, which was actually fought in Korea, was the Japanese Imperial Navy. Not only did the Imperial Navy perceive Taiwan as "a stone leading Southeast" towards maritime Southeast Asia, but also as strategic frontier for Japan's Southern islands.[182]



Map 13 – Japanese regions

Despite Japan's inherent security interests in Korea and Taiwan, she did not rearm yet. Instead the United States were enabled to project power into East Asia and face down the communist threat in China, Korea, and the Soviet Union. Japan was also in a geographically advantageous position on the first island chain, which meant that Japan profited from the stopping power of water that prevented China from projecting her vast ground force without a navy. This calculation was altered with the Soviet military build-up in East Asia during the 1970s and

[181] Cumings 1993, 42
[182] Chen 1977, 61 and 72

1980s. In 1976 Japan's National Defense Programme Outline (NDPO) was developed, which called for a qualitative build-up of the Japanese Self Defense Forces (JSDF/Jietai) in a framework of a "required defence force". This practically meant that the constitutionally allowed size of the JSDF depends on the nature of the threats confronting Japan's security.[183]

Subsequently the JSDF acquired a large number of MBTs, early-warning aircraft, and F-15 interceptor aircraft. The Ground Self-Defense Force (GSDF) stationed the bulk of its troops on Hokkaido to prepare against a Soviet invasion. Since 1945 the Soviet Union had occupied the Kuril Islands, of which Japan perceives the southern part as "Northern Territories" and part of Japanese soil. Not only does the dispute about the island continue to this day, but Japan and the successor state of the Soviet Union, Russia, have never concluded a peace treaty. Under the outline JSDF and US military concluded a division of labour for the first time. The JSDF subsequently took over the task of defending US bases in Japan, freeing US troops for other operations. The Maritime Self-Defense Forces (MSDF) acquired destroyers, ASW aircraft and minesweepers to secure the adjacent seas. By 1978 the Guidelines of Japan-US Defense Cooperation were concluded, and in 1981 Zenko Suzuki was the first Japanese Premier to officially acknowledge an alliance with the US.[184]

While the Soviet threat disappearing at the beginning of the 1990s, Japan proceeded nonetheless in slowly strengthening her military. The NDPO revision in 1996 moved from a "required defence force" towards a "standard defence force" to be prepared in a constantly changing security environment. This meant that the JSDF kept the acquired capabilities and continued with a qualitative build-up of them.[185] Following strains on the alliance with the US after 1991, when the Japanese government failed to enable legislation for JSDF participation in the first Iraq War, UN peacekeeping participation became legal in 1992.[186] Also formerly prohibited collective defence was legalized as collective self-defence, restricted to the defence of allied troops on Japanese territory. North Korean missile tests and the first nuclear crisis pushed Japan to pursue ballistic missile defence (BMD). While calls for Japan's "normalization", therefore becoming a country with offensive military capability and an interest rather than a norms based foreign policy, arose already before, the Taiwan crisis 1995/96 was the trigger for the country to pursue it. The PLA failed to deter the use of US aircraft carrier intervention, but the missiles

[183] Hughes 2004, 68
[184] Hughes 2004, 27-28
[185] Hughes 2004, 68
[186] Hughes 2005, 33

it fired into the East China Sea displayed to Japan the emerging threat on her southern border.[187] Subsequently the emergence of China and the missile threat from North Korea became the main drivers of Japanese defence policy.

The MSDF provided support for Operation Enduring Freedom in the wake of 9/11 through an operation in the Indian Ocean and after Saddam' fall Japan sent troops into Iraq for reconstruction[188]. At the same time the Koizumi government continued the push for BMD. While the North Korean missile and nuclear programmes represent a threat to Japan, the impoverished state misses any capacity to project landpower over the Sea of Japan. The real threat to Japanese territorial integrity and the safety of SLOCs arises from China. Throughout the 2000s this remained the main undercurrent of JSDF reform and acquisition. The 2006 Defence Policy Review Initiative (DPRI) included the integration of US and Japanese forces and the relocation of US troops of which the current rebasing of USMC units to Guam is part of.[189] Outlining preparations for operations abroad, the focus of the 2004 National Defense Program Guidelines (NDPG) remained regional. While the first Abe government failed reinterpreting the constitution, continued incursions of Chinese surface vessels and submarines had an impact on the JSDF. The GSDF moved towards more mobility, acquired new transport helicopters, and formed a Central Readiness Group in 2007. Likewise, the Air Self-Defense Forces (ASDF) increased its early-warning capability due to the threat by Chinese cruise missiles and the MSDF started her destroyer-helicopter programme. These destroyer-helicopter vessels are designed as destroyers since they classify as defensive capability, although the ships are in fact LHA.[190]

In 2014 the second Abe government achieved its quest to reinterpret Article 9 of the Japanese constitution. Article 9 is the origin of many of Japan's pacifist principles, such as the limits to her military expenditure, commitment to non-possession of nuclear weapons, and restrictions of armament exports. The revision of 2014 allows Japan to fully participate in collective defence, therefore aiding allies abroad if they are attacked. Instead of only protecting US bases, the JSDF can for example now aid US vessels operating at sea.[191] During the recent renewed escalation with North Korea, the Izumo, one of the MSDF's most advanced destroyer-helicopter

[187] Hughes 2004, 42-45
[188] Kliman 2006, 2
[189] Hughes 2009, 84-88
[190] Hughes 2009, 90-93
[191] Sieg and Takenaka 2014

ships, was deployed as first MSDF vessel to escort US supply ships.[192] In May 2017 Abe announced his intent to replace the peace constitution with a new constitution by 2020.[193] Despite the potential repercussions, the idea of a Japanese nuclear weapon is also gaining ground. Japan's three non-nuclear principles (Japan won't possess, produce, or introduce nuclear weapons) are supposed to prevent such a step, but the previous decades have showed how Japan's peace constitution and Article 9 have slowly been softened.[194] When it comes to technical feasibility and plutonium stocks, Japan could achieve the acquisition of a nuclear bomb quite quickly.[195]

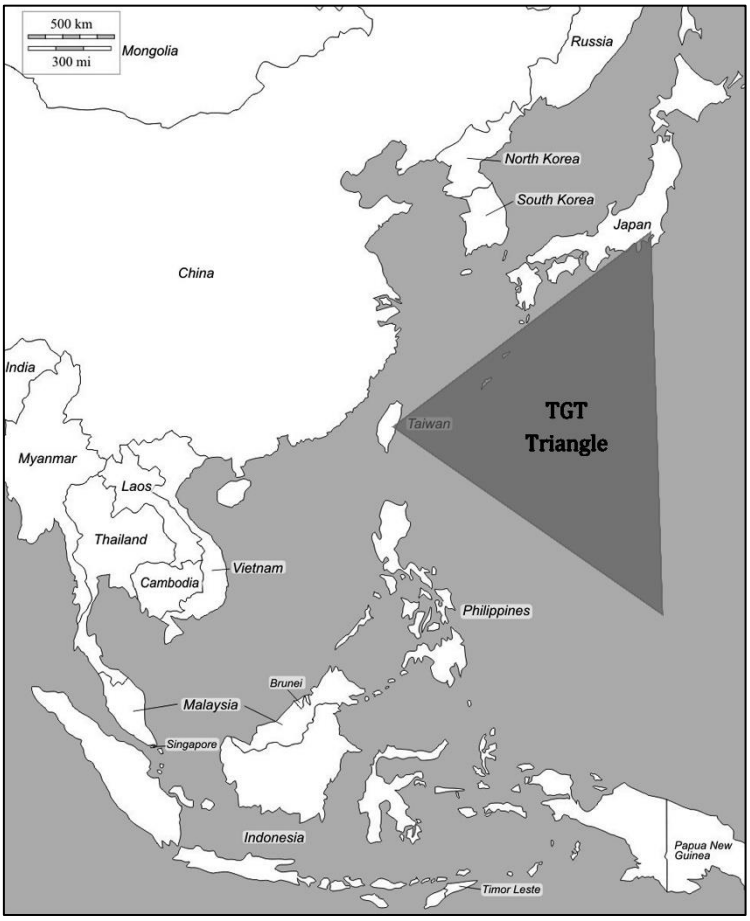
4.3 Preparing for Invasion: The 2014 National Defense Program Guidelines

Since the 2010 National Defense Program Guidelines (NDPG) the defence of the Nansei Islands, also called the Ryukyu Islands, has become a core task of the JSDF. As Chinese maritime activities increasingly threaten the islands themselves and the SLOCs running southward, the JSDF prepares for a peacetime "engagement strategy" and a wartime "contingency response strategy". MSDF forces are tasked with preventing threats from reaching the islands by building-up capability and deterrence, and act as a self-sustaining reaction force if conflict arises. Focus of attention is the so called TGT-triangle (Tokyo-Guam-Taiwan) on Japan's southern approaches, as it is not only important for merchant SLOCs, but also for the allied US Navy.[196]

The 2014 NDPG follows suit and identifies four major threats to Japan's security, the Chinese threat to islands and SLOCs due to intrusions of ships and aircraft; the North Korean threat to strategic infrastructure by ballistic missiles and guerrilla forces; "grey zone" conflicts, instability and terrorism; and natural disasters, specifically earthquakes and tsunamis. Without specifically naming China, the NDPG mentions that there are coastal states that have disregarded international maritime law and violated freedom of the high seas. This is undoubtedly a reference to Chinese assertiveness in the South China Sea. The establishment of an Air Defence Identification Zone (ADIZ) over the East China Sea in 2013, which overlaps with Japan's own ADIZ and covers the Senkaku/Diaoyu-Islands, is mentioned as example of dangerous behaviour that violates the "freedom of overflight on the high seas". Interestingly it does not mention that South Korea's ADIZ also overlaps with both of the Chinese and Japanese

[192] The Japan Times 2017
[193] Lewis 2017
[194] Hughes 2004, 35
[195] Topaloff 2017
[196] Kotani 2013, 16

ADIZs. The patrols of Chinese military vessels and aircraft into the Pacific Ocean south and north of Japan are considered a threat, as is the development of asymmetric A2AD capabilities by the PLA.[197]



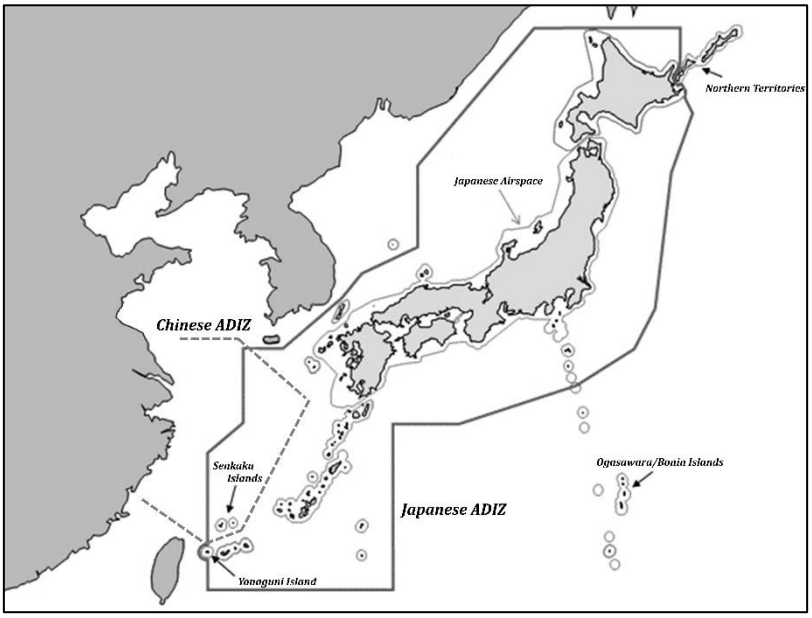
Map 14 – Tokyo-Guam-Taiwan triangle on Japan's southern approaches

Geography is invoked as the main reason for the threat arising to Japan by China's growing power projection capability. The NDPG outlines Japan's numerous geographical vulnerabilities, such as her long coastline, concentration of population and strategic industry in coastal areas, extensive exclusive economic zone, remote islands, and dependence on international trade for food and natural resources. Open and stable seas are therefore essential for Japan's security, as is the alliance with the United States that secures global SLOCs and provides nuclear deterrence for Japan.[198]

This presents a stark contrast to the Chinese perception, as outlined in the previous chapter. While China is dependent on SLOCs and natural resource imports as well, the freedom of

[197] Japanese Ministry of Defence 2013a, 2-4
[198] Japanese Ministry of Defence 2013a, 4-5

navigation is seen as a threat, as it allows the US Navy to project power on the East Asian littoral. It is no coincidence that China strives to reverse this free movement of US forces by developing A2AD for deterrence and in the worst case to engage forces intruding in the near seas, and on securing islands in the East and South China Seas to claim control of adjacent bodies of water legally as also de facto. Japanese and Chinese interests, both rooted in the core interest of security and survival, are therefore on collision course.



Map 15 – Chinese and Japanese Air Defence Identification Zones (Source: Japanese Ministry of Defense 2013d; adapted)

4.4 The JSDF: A Rapid Reaction Force

The 2014 NDPG lines out major transformations of the JSDF, continuing those that were already started in the previous period, to prepare the Jietai for Chinese incursions into Japanese island territory and "grey zone" situation. While the actors for potential grey zone situations are not outlined, grey zone operations include those by China and North Korea that fall below the threshold of conventional war, for examples by using maritime militias or guerrillas. To some extent mirroring the solutions pondered by the US military, the JSDF increases its capability to rapidly deploy advance units, with the goal of transforming the JSDF in a Dynamic Joint Defense Force.[199] This new force structure is envisioned to include forces that are able to immediately react to attacks on remote islands by intercepting invasion forces and swiftly reconquere them, while being shielded by other JSDF forces against cruise and ballistic missile

[199] Japanese Ministry of Defence 2013a, 7- 8

attacks.[200] Nonetheless the guideline does not set aside the possibility of future "Cold-War style" land invasions, obliging JSDF forces to keep capabilities to responds to such emerging threats.[201] This displays not only the current threat of Chinese power projection capacity, but how Japan expects this threat to multiply in coming decades.

Considering the need for Joint Operations, the MSDF and ASDF are supposed to move closer together. [202] The Medium Term Defense Program (MTDP) FY2014-FY2018, which was released at the same time as the NDPG, provides more details to the changes in organisation and basing of the Jietai. While MSDF and ASDF primarily extend their capabilities by acquiring new weapon systems, the MTDP foresees structural changes to the GSDF focusing on strengthening the Western Army tasked with defending Kyushu and Okinawa Prefecture.

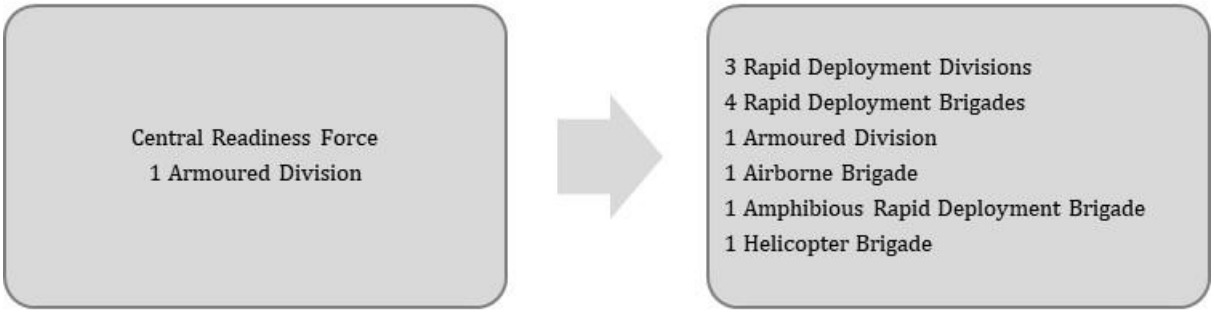


Figure 3 – Increase of GSDF Rapid Deployment Units as envisioned in the NDPG 2014 (Source: Japanese Ministry of Defence 2013a, 31)

Tanks and artillery still stationed on Hokkaido from the JSDF's Cold-War posture to repel a Soviet land-assault are reorganized in basic operational units and transferred under the command of the Western Army in Kyushu. This is due to the fact that the potential of a future invasion as mentioned previously is highest in the southwest of Japan, closest to China. Some of the heavy units remain in Hokkaido, partly for training purposes, and tanks stationed on other main islands of Japan are transferred to the Western (Kyushu) and Northern (Hokkaido) Armies.

The Central Readiness Force established by the previous NDPG is planned to be dissolved and integrated into Ground Central Command, while a larger number of rapid deployment divisions and brigades, as well as other mobilized units have been and will be created (see Figure 3). These units are equipped with mobile combat vehicles that allow aerial transport. [203] For coastal defence, the GSDF is establishing area security units in the southwestern region and continues

[200] Japanese Ministry of Defence 2013a, 14
[201] Japanese Ministry of Defence 2013a, 18
[202] Japanese Ministry of Defence 2013a, 21
[203] Japanese Ministry of Defence 2013b, 4-5 and 9

to modernize its surface-to-ship missile units.[204] The GSDF is currently developing a new land-based anti-ship missile with a range of 300km, adding 100km to the current capability of its surface-to-ship missiles units. The weapon is scheduled for deployment in 2023.[205]

Strengthening ISR (Intelligence, Surveillance, Reconnaissance) in all services is one of the priorities of the 2014 NDPG. The ASDF is currently acquiring 4 additional early-warning (EW) aircraft, increasing the number of her airborne early-warning (AEW) squadrons from 2 to 3.[206] It has already deployed one squadron to Naha Air Base in 2014.[207] Likewise the MSDF is acquiring 23 P-1 fixed-wing patrol aircraft, replacing older P-3 Orion aircraft, and 23 SH-60 Seahawk patrol helicopters to increase ISR and ASW capacities.[208] The GSDF will acquire its own ground-based aerial research capability.[209] The MTDP also outlines plans for a GSDF coastal observation unit in the southwestern region that has started operations on Yonaguni Island in early 2016.[210] This follows earlier upgrades of radar installations in the southwestern region, including on Miyako Island, Takahatayama, and Naha Airbase on Okinawa.[211] To improve communications the JSDF has launched its first military communications satellite in 2017, with another two to follow. So far the Jietai used civilian satellites.[212]

To strengthen air-defence, the ASDF will increase its fleet from currently 600 to 640 airplanes, adding another fighter aircraft squadron.[213] Between 2014 and 2018 28 F-35 will be added to the fleet, and 26 F-15 modernized to improve air-to-air combat capabilities.[214] A second fighter aircraft squadron was transferred to Naha Air Base in 2016.[215] As a partner country Japan produces the F-35 itself, with Mitsubishi having finished the first aircraft in June 2017.[216] To improve the mobility of the new rapid deployment forces, the ASDF is also increasing aerial refuelling capacity and modernizes its air-lift technology. Building-up on existing air-defence, the JSDF will acquire modern PAC-3 MSE for its PATRIOT systems. The system can engage both aircraft and missiles, in addition to the existing GSDF surface-to-air missile units that will

[204] Japanese Ministry of Defence 2013b, 9 and 33
[205] Gady 2016b
[206] Japanese Ministry of Defence 2013a, 31 and Japanese Ministry of Defence 2013b, 33
[207] Burke and Sumida 2014
[208] Japanese Ministry of Defence 2013b, 33
[209] Japanese Ministry of Defence 2013b, 6
[210] Kubo and Kelly 2016
[211] Japanese Ministry of Defence 2013c, 115
[212] Tamkin 2017
[213] Japanese Ministry of Defence 2013a, 31
[214] Japanese Ministry of Defence 2013b, 33
[215] Gady 2016a
[216] Williams 2017

be modernized. A re-evaluation of air defence on remote islands is underway.[217] In face of rising tensions with North Korea, some members of the ruling LDP also want to follow South Korea in deploying the Terminal High Altitude Area Defense (THAAD) system, and acquire the new AEGIS Ashore system.[218]

At the moment the MSDF's has four Kongo-class and two newer Atago-class destroyers equipped with the AEGIS system. While the overall number of destroyers will increase from 47 to 54 ships, of the five ships currently in construction two carry AEGIS.[219] Japan's submarine fleet will grow from 16 in 2014 to 22 boats, of which 4 are in construction. Two of the submarines currently in construction will be equipped with lithium-ion batteries, a coming submarine technology that Japan is the leader in.[220] Japan requires at least eight submarines to patrol waters in the TGT-triangle alone.[221] The most noticeable shift in MSDF capability towards Japan's return to offensive power projection are her Izumo-class vessels. While designated "destroyer-helicopter" vessel, the Izumo and her sister-ship Kaga, which was commissioned in 2017, are in fact helicopter-carriers. While Japanese official deny any such plans, the Izumo-class could also carry vertical-landing F-35B aircraft, transforming it in light aircraft carriers.[222] In a show of force, the Izumo was dispatched to the South China Sea for the first time in May 2017.[223]

A major step is also the creation of an amphibious rapid deployment brigade, which will consist of several regiment-size subunits. While the MSDF has possessed amphibious ships since more than a decade, Japan did not establish any amphibious units as those were perceived as offensive and therefore forbidden by Article 9. Since 2012 though, the deployment of "defence-minded" marines for the protection of Japanese islands has been granted.[224] The first Amphibious Rapid Deployment Brigade outlined in the 2014 NDPG will be operational in 2018, and plans have emerged to establish two additional brigades. The brigades will mirror the USMC, with which the current brigade is conducting intensive training, and will field the same MV-22 Osprey aircraft.[225] The brigade will also use three tank landing ships already in service with the MSDF that have a flight deck and can each carry two of the six air cushion landing crafts (LCAC)

[217] Japanese Ministry of Defence 2013b, 7-8 and 33
[218] Reynolds and Hagiwara 2017
[219] Japanese Ministry of Defence 2013a, 31 and Japanese Ministry of Defense 2013b, 33
[220] Takahashi 2017
[221] Kotani 2013, 17
[222] LaGrone 2015
[223] Borah 2017
[224] Mizokami 2013
[225] Fuentes 2017

Japan possesses.[226] Supported by rest of GSDF, ASDF, and MSDF, the amphibious brigade will present the spearhead in defending and retaking any invaded islands.[227]

4.5 Japan as Third East Asian Pole

After being denied her own ambitions to claim regional hegemony, Japan has profited from the offshore balancer United States becoming the strongest power in East Asia. America's need for forward basing to prevent the Communist advance from spilling into the Western Pacific enabled Japan to solely focus her resources on becoming an economic great power. The US presence, but also the lack of any threat due to the fact that other powers in East Asia lacked the ability to project their considerable landpower on the first island, freed Japan from the need to transform her latent power into hard one. With the Soviet military build-up in the Far East the threat scenario evolved. Facing the potential of an invasion, Japan acquired a conventional deterrent. Nonetheless, this threat arose from the North and therefore did not threaten Japan's centre of gravity, the densely populated industrial centres in the Kanto and Kansai regions (see Map 13, page 62).

While North Korea's nuclear programme triggered the acquisition of Japanese BMD, the country does not have the seapower to threaten Japan by invasion. The current National Defense Program Guidelines of 2014 continues to describe North Korea as destabilizing and a threat due to continued advances in ballistic missile research, as well as potential guerrilla attacks, but not as the origin of a potential invasion.[228] China's military modernization on the other hand triggered what often is referred to as "normalization", that is Japan's re-emergence as a nation capable of power projection. Before that Japan's Jietai concentrated on defensive armament, such as BMD, fighter aircraft for interdiction, and a destroyer focused navy to conduct ASW and protect US bases. While during the Taiwan crisis 1995/96 the PLA only possessed rudimentary power projection capabilities, a decade later it became clear that the combination of rapid advances in ballistic and cruise missiles, combined with an emerging blue-water navy and amphibious warfare capabilities, threatened Japanese territory for the first time since the Soviet did so in the 1980s.

The continuation of the alliance between Japan and the United States is deeply rooted in shared interests. The United States depends on free movement on the high seas to project power

[226] Mizokami 2013
[227] Japanese Ministry of Defence 2013a, 8
[228] Japanese Ministry of Defence 2013a, 2-3

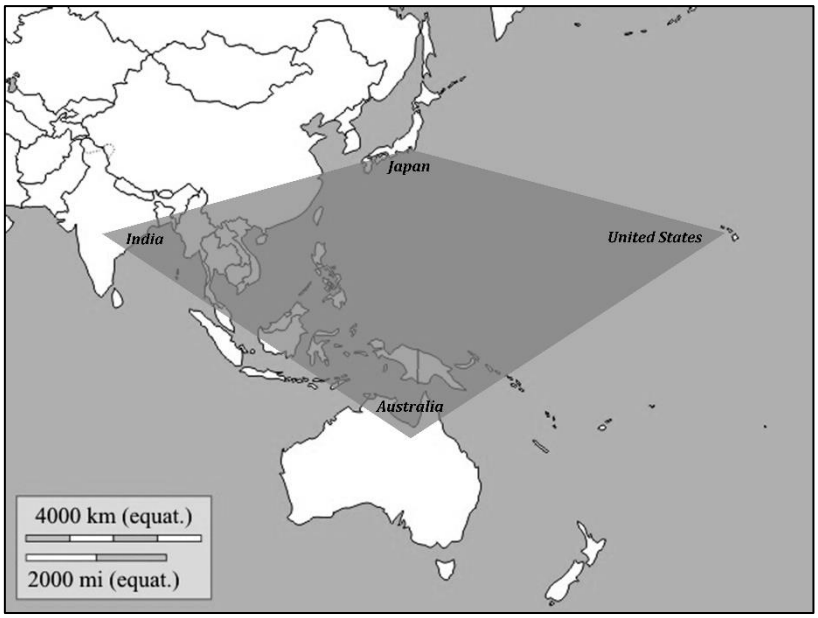
globally through the US Navy, as she defends her economic interests and attempts to prevent the emergence of regional hegemons elsewhere. Japan depends on the free movement as she heavily depends on SLOCs for energy, food, natural resources, and trade. Despite that the US Navy's 7th fleet continues to be the most capable navy in the Indo-Pacific, the rapid modernization of China's PLA decreases the relative gap. The current US administration, as have previous ones, has reinforced US commitment to Japan's defence, including the Senkaku Islands.[229] Even with extended forward basing, the US military will have a tough fight to penetrate Chinese A2AD layers though. A process that started with the Guam doctrine of shifting responsibilities to Japan continues. While Japan required only minimal capabilities during the Cold War to fulfil these responsibilities, the Chinese threat is much larger. This lack in US capability to provide security for Japan has finally driven the country from buck-passing to balancing with the US against China.

Faced with budget constraints, the JSDF have started shifting resources since 2010 and sped-up the process beginning in 2014. To counter the threat against the Senkaku Islands and other parts of the Nansei Islands in Okinawa Prefecture, the Jietai have shifted resources from the Northern Army to the Western Army on Kyushu, tasked with defending Japan's southwestern periphery. Japan has also established amphibious and rapid deployment units to retake conquered islands. Japan's southern approaches in the TGT-triangle are essential for state survival, as Japan is dependent on the SLOCs running through them. To protect the islands in the triangle, other remote islands, and for securing SLOCs beyond that, Japan requires power projection capabilities. The acquisition of helicopter carriers, the biggest Japanese ships constructed since the end of the Second World War, are a first indicator that Japan will further move in that direction.[230] The Abe administration is also considering the acquisition of Tomahawk LACM for the MSDF, plain offensive weapons.[231]

Japan is not only a regional great power due to her latent and hard power, but also due to her behaviour. While significantly more powerful than other nations, Japan cannot keep-up with a demographic behemoth like China. While Australia is being co-opted by the United States on the global level and has very limited latent and hard power, though considerable in relation to her population, the country is also a regional great power in Oceania. The Abe government envisions a "security diamond" as core for an "arc of freedom and prosperity" consisting of

[229] U.S. Department of Defense 2017
[230] Atherton 2013
[231] The Japan Times 2017

emerging democracies on the Eurasian continent.[232] The "security diamond" concept of Japan's cooperation with the United States, Australia, and India, is in fact the attempt to balance with three offshore balancers, originating in regions adjacent to East Asia, against China. The 2014 NDPG outlines increased cooperation in maritime security, joint trainings, and an overall deeper relation with India and Australia.[233]



Map 16 – The "Security Diamond"

At the same time Japan attempts to co-opt smaller powers in Southeast Asia, of which many are hedging, therefore pursuing a policy of profiting from China's economic development and in balancing against her assertiveness.[234] The NDPG 2014 specifically mentions the Republic of Korea and Australia as such partners. Likewise the relationship with "Southeast Asian countries" should be strengthened.[235] Despite historical animosities, Japan and the Republic of Korea have signed the General Security of Military Information Agreement, enabling their militaries to share intelligence.[236]

Japan has a history of using humanitarian assistance, development aid, and promotion of maritime security to increase influence in Southeast Asia. In 2016 the Abe government outlined the Vientiane Vision, an initiative for defence cooperation with ASEAN member states.[237] It also supports states involved in the maritime disputes in the South China Sea in developing

[232] Kotani 2013, 21
[233] Japanese Ministry of Defense 2013a, 11
[234] Zhao and Qi 2016, 486-487
[235] Japanese Ministry of Defense 2013a, 5
[236] Park 2016
[237] Japanese Ministry of Defense 2016a

their capacity to respond to assertive behaviour at sea. Japan has for example transferred decommissioned coast guard vessels to various countries, such as Malaysia.[238] Specifically Viet Nam and the Philippines have been at the frontline of the South China Sea dispute with China, as outlined in chapter 3, and receive special attention. Japan is Viet Nam's biggest donor of ODA, and continues to improve defence ties with the nation, as well as transferring coast guard vessels.[239] Japan also attempts to co-opt the Philippines, which under the Duterte administration have moved away from the United States towards a strategy of hedging, to limit Chinese influence and secure freedom of the high seas. When the Philippine President Rodrigo R. Duterte toured the Izumo in June 2017, Shinzo Abe remarked that "both Japan and Philippine are maritime states and all national interests derive from the sea".[240] The Philippines have also been a recipient of Japanese patrol vessels.[241]

Concluding, Japan is a regional power that has thrived as it was able to buck-pass to the United States, which balanced the threat arising from the Soviet Union. But changes in the relative balance of power have driven Japan to shift towards balancing together with the US, and in some extent with Australia and India, against China. Japan has also started to build-up military capabilities, but as states are rational she does not focus on offensive capacity per se since operations against China on the Asian continent would be futile. As Japan is confronted with the stopping power of water in protecting her own territory, and the SLOCs needed for survival, she nonetheless slowly acquires the needed offensive capabilities. The archipelagic nation also attempts to co-opt middle powers and smaller nations in confronting the threat.

[238] Parameswaran 2016
[239] Takenaka 2015
[240] Japanese Ministry of Defense 2016b
[241] Mogato 2016

5. Conclusion

Assessing China's and Japan's defence posture and the reform and modernization of their militaries has underlined the major importance of geography. It is not surprising that geography plays a central role in military affairs, but the previous chapters have outlined the red line running from the two countries' position in the global and regional systems down to the operational level. Regional systems themselves are determined by geography, and East Asia can be defined along two sub-systems centred on the South and East China Seas. In the final chapter I refer back to my original research questions, and sum up the insights provided by this thesis.

How does maritime geography alter the core tenet of offensive realism that landpower determines great power status?

While landpower remains the most important factor for great power status, geography determines how it can be projected. The case of East Asia shows how the concentration of population centres and industrial hubs on the coast, and the existence of archipelagic states promote support forces such as air force and navy to enabling forces. Both the continental and archipelagic states in East Asia are heavily dependent on sea lines of communication (SLOCs), as their trade depends on their freedom, and subsequently their wealth, and the ability to transform this latent power into hard power. While China could eventually sustain a war a for some time, as she has access to East Siberian and Central Asian energy deposits, her economy would be crippled. For the archipelagic state Japan, this dependence is so high that dependence on SLOCs equate to state survival. If a seapower controls these SLOCs, it becomes the strongest power in the region and can claim hegemony. Currently the US Navy does so, but as the United States are confronted with the major stopping power of the Pacific and lacks territory in East Asia, it is only an offshore balancer.

The stopping power of water is a function of geography and the balance of hard power. Geography comprises of the distance at sea that a power has to overcome, and the coastal geography that complicates or eases amphibious landings and assaults. The balance of hard power on the other hand pins the offshore power's landpower, filtered by the balance of power between the enabling forces at sea, against the local power's landpower, specifically her ability to defend coastal areas. Japan's rapid conquest of East Asia at begin of the 20th century was enabled by the immense advantage that her modern army had against other entities in the regional system. The other states were either weakened, such as China, or colonies, whose

overlords were bound (or disabled by the events) in the European theatre of the Second World War. While the factor geography is permanent, the balance of power continuously shifts and determines how power can be projected in the system.

If two major powers are pinned against each other, or if geography narrows the contested area down to small islands, a specific element achieves critical relevance. This element are amphibious forces, the only forces capable of amphibious assault. It makes them the only tool that a great power can use to project power onto a heavily defended coastline.

What are the main drivers of China's military modernization, and why does it drive Japan's 'normalization'?

China is a prime example for a paradox that many developing nations experience, which is that the stronger they get the more vulnerable they become to catastrophic collapse. With the shift of her centre of gravity to the coast and a development policy dependent on maritime trade, China got more vulnerable for an attack by a great seapower like the US. The United States is very limited in her ability to project power into China's West, but China's population and economy is centred in the coastal areas in her east and south. In order to safeguard these coastal areas and secure survival, China has embarked on a quest with multiple facets. To protect her coastal areas, China is developing land-to-sea power projection capabilities in the form of ballistic and cruise missiles, and a blue-water navy. Projecting power into the Western Pacific is central for negating the advantage of stand-off weaponry. China is therefore altering the function determining the stopping power of water, and attempting to diminish US power projection capabilities.

Islands play an important role as island chains and as control points for SLOCs. To that end China works on gaining control over Taiwan, breaking the lock of the first island chain, and if opportunity or need arises would strive to gain control over Japan's Nansei Islands, thereby securing the Ryukyu passage ways. In the south, the Spratly Islands have similar significance for the control of Chinese SLOCs. On the other hand China is working on establishing land-corridors into Central Asia and the Middle East, thereby reducing the dependence on a maritime trade. While she won't be able to replace it, these land-corridors could function as a lifeline during a hegemonic war.

Japan's own attempt to gain regional hegemony, driven by the need to gain resources for her industrial development and dislodge European seapowers threatening her, failed miserably. After that Japan enjoyed the protection of the United States, which required forward basing

opportunities to prevent the Soviet Union from becoming able to project seapower into the Americas. As offensive realism predicts, states are cost sensitive, and Japan did not need to transform her rapidly growing latent power into hard one. Even with the Soviet military build-up on Japan's Northern border Japan only acquired minimal resources to repel a primary invasion, and to fulfil the commitments of the security treaty with the United States. As Japan's centre of gravity is in the south, the vastness of Hokkaido worked as buffer that would have allowed time for US landpower to be deployed into Japan.

Even with the North Korean threat of a ballistic missile programme, Japan did only acquire ballistic missile defence as North Korea had no major landpower projection capabilities. China's increasing power projection capability on the other hand threatens Japanese territory, including her main islands. This has led Japan to move from buck-passing to the US to balancing with the US against China. More importantly the growth of Chinese enabling forces threatens the SLOCs running through the TGT-triangle (Tokyo, Guam, Taiwan) that Japan depends on, driving her to acquire offensive power projection capabilities herself. As Japan will have less power than China in the medium- to long-term, it also attempts to co-opt smaller nations in East Asia, focusing on those that already suffer from China's rise. There are also indicators that Japan is not only balancing together with the United States, but also with Australia and India.

There is another paradox in regards to the position China and Japan take towards the freedom of the seas. Despite the fact that both countries heavily depend on SLOCs, they have contrary standpoints in this regard. The underlying reason is that Japan's ambitions have been fended off. Today Japan is a regional great power, but has no potential of achieving regional hegemony anymore. Considering the development of other countries with larger populations, Japan is in fact a declining regional power. The freedom of the seas established by the US that allows her Navy to freely roam the oceans and secure SLOCs has in fact provided security for Japan. As Japan profits from the US led system, she is a status quo power. China on the other hand perceives the freedom of the seas, specifically in regard to her "near seas", as a threat, since it allows the US Navy to operate there. Therefore China is acting as a revisionist power, and attempts to minimize the US Navy's freedom of operation by deterrence and by legal claims based on her occupied islands.

What impact do the geographically determined shifts in the East Asian balance of power have on specific weapon systems and military reforms?

The pattern of Chinese, Japanese, but also American arms acquisitions and military re-organization follows the need for power projection in the East Asian littoral and the Western Pacific. China has acquired the capabilities for anti-access area-denial (A2AD) reaching into the Western Pacific, and is acquiring enabling forces to interdict US vessels and therefore diminish US power projection capability. This includes future light carrier strike groups acting as bastion defence, and long-range strike aircraft. To counter US technological superiority, the People's Liberation Army is focusing on asymmetric capabilities for its A2AD layers. These asymmetric capabilities are cruise and ballistic missiles, submarines, and sea-mines.

By establishing cheap and redundant attack vectors the chance increases for a saturation attack that overwhelms the defences of carrier strike or other surface action groups. China is developing her amphibious capacities in order to break through the first island chain, either in Taiwan or the Ryukyu passage ways, and secure strategic points along her SLOCs in the Indian Ocean. The PLA also invests in land-attack missiles in order to disable US bases in the region. Doing so opens the window to establish fait-accompli situations, where dislodging Chinese troops could be too costly for the US. Based on the calculation that the Pacific will protect the United States, this could lead future US administrations to abandon East Asia once the Chinese army has established forward positions on Taiwan or other sections of the first island chain.

The US military confronts the threat to her capital vessels and her forward bases by pondering plans to disseminate forward basing along the first and second island chains, as well as the US Navy's firepower over the fleet. While her amphibious forces, the USMC, have made major steps to prepare for expeditionary basing, therefore operating independent of fixed bases and capital vessels, budgetary constraints have hindered important adaptions of the Navy herself so far. Japan on the other hand has invested in Izumo-class helicopter carriers to project power along her southward SLOCs, and invests in her own A2AD capabilities to diminish Chinese power projection into the Western Pacific. This includes an expansion of the submarine and destroyer fleets, but also of her air-defence capacity. As Japan is confronted with the stopping power of water in defending her own territory, recent re-organization of her ground forces has included the establishment of amphibious and rapid response units. Summarized, Japan is expanding as well her A2AD, as her power projection capabilities in response to China's military modernization. If Japan's threat perception further increases, it is not unlikely that the country will develop nuclear weapons in the future as well.

The results of this analysis paint a somewhat bleak picture. At its core both China and Japan, but also the United States, are driven by a quest for security. Due to their position in the system, which pins China and the US against each other as peer-competitors, and geography, which determines the path to securing their survival, all three powers are on a course for confrontation.

If the PRC would attempt a hegemonic war, it would occur when China perceives that it could disrupt US and Japanese power projection to an extent that the PLA would be able to conquer and hold Taiwan, therefore if deterrence fails. With the PRC controlling Taiwan, assuming China would be able to pacify the island, she would be able to project power from the first island chain deep into the Pacific, controlling both south- and eastwards running Japanese SLOCs. Such a successful war would, if it did not trigger US involvement anyway, most likely furhter speed-up of the loss of US influence as smaller states would shift to acquiesce and band-waggon with China. Consequently the US would have major problems projecting power into North- and Southeast Asia, while Chinese hegemony in Southeast Asia would move the theatre of contention into the Indian Ocean, a region with no hegemonic power so far, which functions as gate to the Middle East and Africa. China is still far away from being able to conduct a military operation to establish such a fait accompli. It is also unlikely that the United States would give in, and a major, open-ended Pacific War would arise if deterrence fails.

A factor to consider for further research is the emerging importance of land-to-sea power projection. Following the rising importance of the People's Liberation Army Rocket Force conventional arsenal, Japan and the United States are investing in similar technologies. While shore-based anti-ship missiles have been deployed during the Cold War, only in response to the Chinese threat did the US Army start to acquire such capabilities. Since the revolution of precision-guided ammunition has reached ballistic and cruise missiles, conventional forces have reached a completely new relevance. While the technology for long-range conventional missiles was available before, now small, moving targets can be engaged. This development will rapidly progress, as for example the new Chinese Hong Niao-2000 (HN-2000) will have a range of 4000km. The United States as well have advanced global-strike programmes in development. This dynamic could rapidly transform the factual freedom of the sea, as well as diminish the role of geography, although not eliminate it.

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On my honour as a student of the Diplomatic Academy of Vienna, I submit this work in good faith and pledge that I have neither given nor received unauthorized assistance on it.