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The threat to the U.S. 7th Fleet by the Chinese

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The Threat to the US 7th Fleet by the Chinese

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JAMES MADISON UNIVERSITY

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Abstract

This research identifies key sciences and technologies that are possessed or sought after by the People's Liberation Army Navy (PLAN). An overview of Chinese naval history is presented to better understand the possible reasons for China's expansion to the South China Sea. By looking at Chinese official news reports as well as statements by Chinese military and other high ranking officials, a Chinese perspective is developed. Types of defense purchases, spending, and military espionage are evaluated to reflect the newfound capabilities and current technologies of interest for the Chinese Armed Forces. The threat to the US 7th fleet is increasing due to the PLAN's asymmetric use of modern military technologies. The political atmosphere remains tense and many territorial disputes between China and other nations remain. Meanwhile, a regional arms race is ongoing, and with it instability and conflict between countries in the West Pacific.

I. Introduction

China's growth over the past few decades presented economic opportunities as well as regional growth. However, friction with neighbors over territories, fishing rights and maritime boundaries has raised tensions in the past and still presents challenges for China's neighbors as well as the US. China's economic performance has led to dramatic increases in military spending, heightening tensions with other countries in the region. There is the threat of pulling the United States into the disputes. Improved defense has resulted in increased confidence, which in turn led to a more assertive foreign policy. China has been increasingly investing in its naval forces and its personnel now benefit from better funding and training.

II. Statement of Purpose

In this thesis I will review Chinese naval history and look at the Chinese military's use and development of military technology. I will provide a review of Chinese naval history, as it may have an effect on future Chinese policy making and development of military technology. In addition, I will compare China's military technology with that of the U.S. Finally, I will discuss the threat that China poses in the region based on its technological capabilities.

III. Background

Though many financial experts predicted the Chinese “Economic Miracle” (Hu, 1997) and its consequences as early as the late 1970s, the idea that China is a major member of the global economy is now accepted without argument. For more than three decades, China has enjoyed impressive economic expansion, often experiencing a growth rate of over 10 percent of GDP per year. (China’s GDP, 2012) Trade between the large American consumer market and the manufacturing-based, export oriented Chinese economy allowed China to make significant economic gains, while the American consumer benefited from cheaper goods. Though other nations in the region such as Singapore and Malaysia have also benefited from similar trade trends, China has clearly established itself as a major regional economic heavyweight. As a result, their ability to make significant investments in their military and technology has risen dramatically (Richburg, 2012).

Economic Performance Table

	GDP(2011)	Real growth rate(2011)	GDP per Capita (2011)	Public Debt (2011)	Unemployment rate (2011)
China	\$7.29 Trillion	9.2%	\$8500	43.5 % of GDP	6.5%
United States	\$15.09 Trillion	1.7%	\$49,000	67.7% of GDP	9%

Table1. Economic Performance of the United States and China, 2011. Data from the CIA Factbook, IMF.



Figure 1: Maritime Territorial Claims. This map shows the overlapping territorial claims.

Taken from the British Broadcasting Corporation.

However, friction with neighbors over territories, fishing rights, and maritime boundaries has raised tensions in the past and still presents challenges for China's neighbors. China claims all Spratly and the Paracel Islands as well as virtually the entire South China Sea (see Figure 1 and Table 2). Taiwan also claims the South China Sea as well as the Spratly and Paracel Islands. This is not only problematic due to the overlapping claims between the two, but also because China does not recognize Taiwan as a sovereign nation. In addition, Vietnam fought a border war against China in 1979, and remains locked in a dispute over the islands and economic rights in the South China Sea. As Table 2 shows, other parties, such as the Philippines and Malaysia, also have some conflicting claims in the region (Kleine-Ahlbrandt, 2012).

Territorial Claims			
	South China Sea	Spratly Islands	Paracel Islands
China	All	All islands	All islands
Indonesia	UNCLOS	No claims	No claims
Malaysia	UNCLOS	3 islands	No claims
Philippines	Significant portions	8 islands	No claims
Taiwan	All	All islands	All islands
Vietnam	All	All islands	All islands

*Table 2. Territorial Claims Table. *UNCLOS: United Nations Convention on the Law of the Sea.*

The convention allows 12 miles of territorial waters from the coastline, and 200 miles of exclusive economic activity. Data from UN.org, Globalsecurity.org

It seems natural that a nation in such a situation of power and growing wealth would amass a sizable military. In recent years, however, US officials have become increasingly alarmed at the pace at which the People's Liberation Army Navy (PLAN) is modernizing. China's nervous neighbors reacted by purchasing arms packages (e.g. Taiwan), or by being more open to hosting US forces (e.g. Singapore) or even request that US aid them for better patrolling the disputed East China Sea (e.g. Philippines). (Wong, 2010; Wan, 2011; "US military to help" 2012, respectively).

The US backing of these individual nations, from the Chinese perspective, makes the nations feel emboldened and, instead of seeking compromise, they seek to maximize their end of the bargain by having the United States inflate their standing by serving as a mighty ally at their side (Fabunan, 2012). Therefore, instead of helping, increased US presence would, in the eyes of Chinese decision makers, hamper Chinese diplomacy and progress. (Fenby, 2012) For example, China considers Taiwan part of its sovereign territory and has threatened to invade should they attempt to declare independence. (Roy, 2000) As such, China views the Mutual Defense Treaty signed by the United States and Taiwan as a challenge to their authority by a meddling outside source that is hindering normalizing their relations with Taiwan. (Mutual Defense Treaty, 1954)

If the People's Republic of China's economy continues to perform so well (Table 1) it will likely result in increased funding for the Chinese armed forces, adding to the People's Liberation Army Navy ability to compete against US influence in what China regards as its own backyard. (Xuetong, 2011) Recent examples demonstrate that the Chinese leadership is in no mood to compromise on outstanding territorial issues.

In September of 2012, Sino-Japanese relations were severely strained when the government of Japan decided to purchase the Senkaku Islands from a Japanese citizen. Known as Diaoyu Islands by the Chinese and located in the East China Sea, they are also claimed by China. The Japanese move was widely condemned by Chinese authorities, and angry protesters in China attacked Japanese owned

companies and businesses, threatening the strong business ties between the two large economies.(Coonan,2012)

In another incident in July of 2012, a Chinese frigate in waters claimed by the Philippines got stuck, prompting the Filipino authorities to protest. "I think what happened there was an accident, but we don't want such accident happening again because it could trigger something that all claimant states do not want to happen there", said Rommel Banlaoii, executive director of Philippine Institute for Peace, Violence and Terrorism research. (Mogato, Blanchard 2012)

Whereas Europe and the United States are facing economic troubles, current economic conditions in South East Asia and the West Pacific make this area attractive for investment and trade. Current economic conditions worldwide make South East Asia and the West Pacific a relatively attractive area for investment and trade .Vital shipping lines and choke points such as the straits of Malacca make this a busy, high traffic area. In addition, there are many untapped minerals and resources around the many contested islands reefs, and waterways of the South China Sea. These resources can of course be a great source of wealth for future investors, but many of these sites are located in areas claimed by multiple nations (Salameh, 1995).

The United States 7th Fleet

The United States has been in the Pacific for much longer, but the 7th fleet was formed during the Second World War when US forces were at war against Japan. United States and Allied forces fought many bloody battles in the Pacific, like at Midway or Guadalcanal. After Japan's surrender in 1945 and the occupation of Japan, many new bases were set up. During the many decades of the Cold War, the 7th Fleet

played a crucial role in the effort to contain the spread of communism (Zagoria, 1986). In the mid-fifties, it assisted Taiwanese forces against mainland China, and then it also participated in the Korean War, providing air strikes on enemy targets, air support for ground troops, and protecting sea-lanes. During the Vietnam conflict, the 7th Fleet provided seaborne airstrikes and air cover (Polmar, 2005). Although the larger B-52 bombers were flying from land bases, many fighter bombers flew directly to the warzone off the coast from their aircraft carriers. In addition, minesweeping duties were also carried out after the 1973 ceasefire by the 7th Fleet.

During the 1980s, war was raging between Iran and Iraq. Important cargo ships and oil tankers were sometimes targeted in the Persian Gulf, disrupting traffic and trade, and raising oil prices. This prompted the 7th fleet to step in and protect sea traffic. During the Gulf War, the 7th Fleet assisted coalition forces against Iraq (History of the US 7th Fleet).

Today, the US 7th Fleet is a mighty strike force, consisting of massive nuclear powered super carriers, the largest the world knows. The aircraft carriers are central to the fleet. They are prestigious, valuable, and difficult to replace. The latest US aircraft carrier, the USS *George H.W. Bush*, cost 6.2 billion dollars. (“USS George H W Bush Commissioned”, 2009) The many aircrafts they carry can deliver a painful strike to enemy forces within range but also serve as a deterrent against aggression. They are difficult to target from a distance and any enemy forces that attempt to engage the carriers will encounter layers of defenses as the aircraft carrier constitutes essentially the core of the fleet. It is surrounded by destroyers and missile cruisers and other ships that are designed to acquire, track and attack any foes in the air, on the surface or from below. Nuclear submarines are also part of the fleet, and can remain underwater for extended periods of time, and can operate autonomously to protect the fleet from

enemy ships. Many submarines also have the ability to launch ballistic missiles, and therefore also serve a deterrence role (Refuto, 2011). The fleet makes extensive use of its aircrafts for patrol, reconnaissance and anti-submarine duty. Amphibious forces and a marine landing force in Korea remain under its responsibility as it still faces the large North Korean army north of the demilitarized zone (Kim & Glosserman, 2004).

Today, the 7th Fleet's area of responsibility includes the West Pacific, East Asia and the Indian Ocean. The Persian Gulf is now the responsibility of the 5th fleet. (Feldman, 2001)

US “Pivots” to the West Pacific

East Asia and the West Pacific is a crowded and busy region of the world. US defense secretary announced that the majority of US naval ships would be deployed to these regions by 2020 (“US to shift most of Navy”, 2012). As the United States continues its publicly declared shift to Asia, there are a number of objectives it would like to accomplish. The plan is to have 60% of US ships, including most US aircraft carriers, to be based in Asia (Schonhardt, 2012). This reinforcement would, in the view of the US, benefit the security of the US and allied Nations’ interests. Officially, China is not targeted by this “pivot”.

“By 2020, the Navy will re-posture its forces from today’s roughly 50/50 percent split between the Pacific and the Atlantic to about 60/40 split between these two oceans - including six aircraft carriers, a majority of our cruisers, destroyers, Littoral Combat Ships, and submarines," said Defense Secretary Leon Panetta during a conference with Asian defense ministers. But he also made it clear that this strategy is not designed to set the stage for any future conflict with China. “Some view the increased emphasis by the United States on the Asia-Pacific as a challenge to China, I reject that view entirely”. (Panetta, 2012).

But according to many security and geopolitical analysts, this redeployment has more to do with a long term strategy designed to contain the growing presence of the People’s Liberation Army Navy (PLAN). “It is clear that the United States is maintaining a robust and ostentatious presence in the Asia-Pacific region in an increasing number of locations, one that would certainly cause significant damage to the People's Liberation Army Navy in any conflict, while also choosing to shift its center of gravity away from China's borders and to avoid any form of direct confrontation,” wrote researcher Christian Le Miere at the Naval Forces and Maritime

Security Institute (2012).

The United States continues to be involved in the region and is consulting its allies, the Philippines, Taiwan, South Korea, Japan, and now increasingly Vietnam, on a number of issues of common interest. Other consultations with key regional players, such as India, have also taken place. As an example, Defense Secretary Leon Panetta recently talked with Vietnam to allow larger US ships to stop in Vietnamese deep sea ports (Cloud, 2012). Vietnam also is working on allowing the search for fallen US servicemen in some Vietnam War era battle sites. This rapprochement is good news for US-Vietnam relations. It is also a sign that Vietnam may be open to even warmer relations and cooperation since US support can aid them in their many issues with China, including the demarcation of sea borders that has already led to deadly skirmishes and public protests in Vietnam as recently as February of this year (Spegele, 2012).

Historical Background

While China enjoys its current status of economic and regional power, it remains somewhat sensitive to foreign involvement in its affairs and has lived under foreign occupation before. Indeed it is possible that failure at sea is seen as the cause for the misery that affected the nation during the Opium Wars of the 19th century, when British shipments of opium to the country had a very negative effect on the economy as well as society (Hanes, 2002). The Chinese navy was unable to compete with its British counterpart and therefore lost control of naval trade.

The experience of suffering successive and overwhelming defeats at the hands of Western military technology, most notably seen in the vast superiority of Europe's warships and naval expertise, came as a rude awakening to the Qing government. In an effort to prevent the continued humiliation at the hands of the Western nations, the

Qing instituted a frantic effort of reform, aimed at catching up with their foreign rivals. In this regard, the Qing would spend the next several decades striving to modernize both its state institutions and its military capability. The state established a number of new arsenals and shipyards, such as the Jiangnan arsenal and shipyard near Shanghai, to produce the means of modernizing their armed forces. These production facilities would combine foreign technical expertise from Europe with Chinese labor and produce military material roughly on par with that found in Europe by the 1870s (Elman, 2004). To finance the process the Qing levied new taxes, such as customs duties on foreign trade and the "lijin" tax on inter-provincial domestic trade. (Elman, 2004)

However, despite the apparent success of the military reforms, the Qing was hampered by integral structural weaknesses in financing the projects, mainly in the form of corruption and resource mismanagement (Elman, 2004). This often led to slow progress in construction and frequent scarcities of vital funding. Furthermore, while the Chinese were catching up with the nations of Europe, their Western counterparts had not remained static and by the 1890s had once again surged far ahead of China (Elman, 2004).

The efforts to create a modern navy would come to an end during the Sino-Japanese War of 1894-96. At the outset of the war the odds seemed in favor of the Qing, who possessed a massive superiority in manpower and preponderance of modern warships, both purchased from Europe and produced domestically. However, the events of the war would quickly reveal the superiority of the Japanese military. It is often forgotten that at the time the quality of material of the two forces were roughly on par, with the advantage actually possessed by the Chinese, given the numerical superiority. However, during the course of the conflict, the superiority of

the Japanese leadership would prove to be the deciding advantage and would result in the destruction of the modern Chinese fleet in several pitched battles (Elman 2004). More important than the actual fighting of the war was the destruction of the Chinese fleet and the massive war indemnity levied on the Qing by the victorious Japanese, which would end all effort of the Chinese to produce a powerful navy throughout the remainder of the Qing period (Elman 2004).

Around the turn of the twentieth century, European and other foreign powers had carved up and occupied the nation but faced a massive revolt known as the Boxer Rebellion. Thousands were killed, and the foreign powers were again victorious, therefore maintaining their rules on matters of trade and law. The opium problems persisted. It wasn't until the end of the Qing Dynasty, with the rise of Mao Zedong's People's Republic of China, that the problem was successfully eradicated. Today, the period in which opium was used by Westerners to control the nation of China is known to Chinese scholars as the "Century of National Humiliation" (Scott, 2008). These memories, in addition to a strong sense of nationalism, may have helped fuel a certain level of isolationism for the Communist party in China during the Cultural Revolution in the 1960s and 70s.

Mao and the twentieth century

By the 1950s, China had overthrown the ruling Qing, experienced decades of civil war, and finally consolidated a government under the leadership of Mao Tse Tung (Mao Zedong). Despite the return to stable government, the pursuit of a modern navy was not taken up during the Mao era. This was largely the result of Mao's view on the structure of the armed forces, which favored massive infantry and armored formations modeled off of his own experience during the civil war years and influenced by Soviet military structure. Furthermore, the Mao years were

characterized by internal political intrigue which often found the Chinese armed forces increasingly politicized and used as pawns in political power plays (Robinson, 1982). These elements would conspire to maintain the focus on land based elements at the expense of the PLA navy. Further pushing the navy to the periphery was the thawing of Sino-American relations during the 1970s, in which both sides sought to form a tacit understanding that the real enemy of both nations was the Soviet Union. This warming of relations with the US would remove the main justification for a large fleet and give further impetus towards the prioritization of the land forces (Robinson, 1982). By the late 1980s, the USSR was bogged down in Afghanistan and facing economic issues. The Chinese leadership's greatest national security fear was a large scale invasion by their powerful neighbor to the north (Cole, 2000). After the dissolution of the Soviet Union, China's leaders focused increasingly on the surrounding seas, hence the increasingly important role of the PLAN.

Current Issues

Today, many issues still plague US-China relations as well as relations between the PRC and many nations in the Asia-Pacific region. A number of these nations are US allies or have defense agreements with the United States, further complicating the situation and threatening to drag in the US should an armed escalation break out. In addition to the lingering tensions caused by overlapping claims that were discussed in the previous section, other major disagreements continue to sour relations. Some examples of ongoing disputes are:

Taiwan

The issue of Taiwan dates back to the Chinese revolution in the late 1940s, when Mao's Communist forces routed their Nationalist foes to the island. In the context of the Cold War, Taiwan received US support and eventually more protection

in the form of a defense treaty. As mentioned before, the complexity of the issue lies in the fact that it is considered by China to be a breakaway province from the mainland and not an independent state (Taiwan, 2008).

South Korea

In 2011, Chinese ships fishing in South Korea's exclusive economic zone were confronted by South Korean coast guards in a rare incident that resulted in shots being fired and a number of wounded on both sides. According to the South Korean Coast Guard, "about 430 Chinese ships have been seized for illegal fishing in the Yellow Sea" in 2011 ("Chinese fishermen", 2011).

Japan

The Senkaku Islands, known as the Diaoyu Islands in China, are also disputed. The islands are small and uninhabited but are strategically located between Taiwan, Japan, and China. They may also be located in an area that contains oil and gas. (Marshall, 2012).

These issues, and others, are still ongoing and unresolved. Current Chinese military modernization programs is also worrying many of these countries, prompting them to increase their own military spending ("Asia Defense Spending", 2012).

Chinese Media and Official Reactions

Chinese media and government officials are rather expressive and do not shy away from direct warnings to other countries. In the recent past, many statements have illuminated their leadership's thinking. Events that displease the authorities often draw condemnation in various forms of media. Some notable examples are:

Official and Government:

- "It is advisable for some to refrain from muddying the waters and fishing therein and for some others to desist from dancing behind a Pied Piper whose magic tone, as tempting as it is, might lead its followers astray," Xinhua, Official News Agency.

Reaction to the announced increase in US forces in the Pacific.

(Yushan,2012).

- "We urge the Philippine side to proceed based on our bilateral friendship as well as the peace and stability of the South China Sea. We call on them to stop making new troubles and to work with China to create good conditions for the development of bilateral ties," China's Foreign Ministry spokesperson Liu Weimin's reaction to standoff between Philippines' biggest warship and two Chinese surveillance vessels in the South China Sea.(Jingjie,2012).
- "The attempt by the Philippines to carry out its so-called law enforcement activities in the waters of Huangyan Island is in violation of Chinese sovereignty," Liu Weimin adds (Jingjie, 2012).

Military Media:

- "Besides a foreign policy regarding such disputes, regular patrols will help break the other parties' attempts to occupy such areas, and avoid the international community's misconception about the status of such disputed

waters...a hardline position, compromises, as well as 'stick and carrot' approach should all be on the table to solve such disputes". Li Jie, senior captain at the Chinese Naval Research Institute.(Jinghao, 2012)

- "China has already shown enough restraint and patience over this incident," said Major General Luo Yuan, a retired PLA researcher, on the friction with Manila over island disputes, according to an interview published on Chinese state television's website.(Buckley,2012)

The People's Liberation Army Daily has been very clear about its opposition to US involvement in military drills with neighboring nations, (such as the April 2012 joint US- Philippine drills in the sensitive South China Sea) and issued numerous warnings:

- "Anyone with clear eyes saw long ago that behind these drills is reflected a mentality that will lead the South China Sea issue down a fork in the road towards military confrontation and resolution through armed force. Through this kind of meddling and intervention, the United States will only stir up the entire South China Sea situation towards increasing chaos, and this will inevitably have a massive impact on regional peace and stability." Liberation Army Daily (Yap, 2012)
- "The United States' intention of trying to draw more countries into stirring up the situation in the South China Sea is being brandished to the full," The Liberation Army Daily on US involvement in south China Sea disputes.(Buckley,2012)

- “Anyone’s attempt to take away China’s sovereignty over Huangyan Island will not be allowed by the Chinese government, people and armed forces. If one mistakes China’s kindness for weakness and regards China as a ‘paper dragon’ as instigated by some onlookers, he is terribly wrong,” the same newspaper said in a commentary titled “Don’t attempt to take away half an inch of China’s territory,” a warning after tensions with the Philippines over disputed islands.(Luan,2012)

Other rhetoric of the same kind has been coming out from different levels of the Chinese leadership over many other events and standoffs. But some of this may also be for domestic consumption. According to Jennie Welch, researcher at the Center for Strategic and International Studies, “Younger Chinese have grown up in an era where China is seen an increasingly powerful and influential nation, ascending into the foreseeable future while the current leading power – the United States – suffers from political grid-lock, failed foreign policies, and economic woes. As a result, the forces of domestic nationalism tend to push for a more assertive China, one that reflects the confidence and potential of its people” (Welch, 2012). The Chinese government has to balance out the defense of its core interests and diplomacy on one hand, and pleasing its public by neither ceding any territory nor showing any weakness on the other. While these reactions and others offer some strong clues on how the Chinese leadership feels, they do not necessarily reflect a desire for confrontation.

Regional Arms Sales & Military Spending

In parallel to China's impressive economic performance, the armed forces have been receiving increasingly generous funding. The defense budget for 2011 was \$91.5 billion, a 12.7 percent increase over the previous year. In addition, analysts have projected that "by 2015, China's military spending will surpass that of all 12 of its Asia-Pacific neighbors" (Richburg, 2012).

Military spending in the rest of the Asia-Pacific region is also increasing. According to Frost and Sullivan, a business research and consulting firm, strong growth in arms sales is expected at least through 2014, and interestingly, demand for unmanned aerial vehicles (UAV) was a strong contributor to this rise:

Advanced warning and the need to 'manage' potentially volatile situations will lead states to consider the capabilities UAV systems can offer. This will drive investment in ISR (intelligence, surveillance, and reconnaissance) capabilities within which UAV systems are likely to figure in increasingly significant numbers. (2005)

This may be a strong indication of the desire by concerned nations to better monitor the contested territories. Others like South Korea have other reasons to increase their military expenditure. South Korean authorities have decided to spend billions producing 500 to 600 long range missiles to counter what they view is a threat from North Korea (arguably an ally of China), especially after an artillery exchange in 2010 led to the killing and wounding of a number of South Korean marines. According to Yonhap News agency, South Korean president Lee Myung-bak approved of the move in a key meeting in April of 2012 (Glionna, 2011). South Korea is taking North Korea's threat of a "holy war" seriously, and is reinforcing its locally built missile

systems (Lee, 2012) (Foster 2010).

Taiwan has already signed up for an aid package to modernize its F-16s, costing about 3.7 billion dollars. According to SIPRI, a Stockholm based NGO that studies arms sales, Japan spent \$54.5 billion dollars on its military in 2010. India, China's regional competitor, spent about \$ 41 billion . At the Singapore air show in February of 2012, while Boeing displayed its F-15s and F/A-18s, Lockheed Martin lined up its F-16s, F-22s, and F-35s, many representatives from regional powers were present to take a look at the latest defense technologies (Minnick, 2012).

All these elements of a regional arms race may be a dangerous sign that some concerned countries view deterrence, as opposed to increased diplomacy, as their way to solve these issues.

China's budget stood officially at \$95 billion in 2011, a 13 percent increase from the preceding year, but United States officials and defense analysts suspect the actual figures are much higher. According to SIPRI, the number could in reality be closer to \$160 billion, and if the present conditions hold, Chinese defense spending could surpass American spending after the year 2035 (figure 2) ("China's Military Rise").



Figure 2 Projected military, US and PRC. This figure illustrates current and projected expenditure for the US and Chinese militaries. Taken from “The dragon’s new teeth”, 2012, *The Economist* .

Intelligence and Military-Industrial Espionage

Knowing that some technologies cannot be bought or imported, China instead turned to espionage. Even in non-military cases, China has become notorious for knock-off goods, fabricating everything from handbags to US military weapons parts (Levin, 2012). A report this year even warned that fake electronics were making it into US military jets. In a year-long investigation by the Senate Armed Services Committee, 1800 cases of counterfeited parts were found, including in aircraft such as the C-27J, the C-130 J and the Navy’s P-8A Poseidon (Levin, 2012).

China continues to collect vast amounts of information, some of it highly classified. The United States and the Russian Federation seem to be favorite targets as they have advanced facilities and scientists that work on many technologies that have modern military applications. Other countries that have declared further Chinese espionage on their territories include Japan, Sweden, France, Australia, Canada, and others (Engleman, 2011). The type of Chinese intelligence gathering is also interesting. Some uncovered spy networks were setup in order to keep an eye on dissidents and dissident activity. Other networks spy on businesses with no direct link

to politics or the military, perhaps purely for financial reasons.

But Michelle Van Cleave, formerly a national counterintelligence executive, claims in a defense report that “Chinese espionage successes include design information on all the most advanced US nuclear weapons, US missile design and guidance technology, electromagnetic weapons and space launch capability.” FBI director Robert Mueller also warned of covert Chinese activities about “aggressive attempts to use students, scientists and front companies to acquire military secrets” (Van Cleave, 2009).

Examples in the recent past of agents arrested for passing military technology information to the Chinese government may give us some clues as to what technologies are most sought after. In 2005, a South Korean businessman was caught attempting to illegally export F-16 and Blackhawk helicopter engines as well as an AGM 129A air launched nuclear capable cruise missile from the United States to China. In September of 2010, two Russian scientists at the Baltic State Technical University were arrested and accused of passing state secrets to “unidentified Chinese citizens.” Both scientists were specialists in gas dynamic. (Taranova, 2010). In June of 2012, a St Petersburg court in the Russian Federation sentenced two Russian citizens to over twelve years in prison for treason. They were convicted of passing on top secret information to Chinese agents. The agents were interested in the “Bulava” submarine launched ballistic missile (SLBM), set to become the standard missile of future Russian nuclear submarines. The Chinese agents have reportedly also expressed interest in the “Topol” mobile intercontinental ballistic missile (ICBM) system as well the “Iskander” a mobile theater ballistic system. (Two Russian Academics, 2012)

These examples and others show that the theft of sensitive technologies

happens at a rather large scale and is designed to collect information from a variety of defense spheres. The example of the South Korean from 2005 would possibly mean a strong interest in General Electric and other US made engines for aircraft as opposed to Chinese designs or Chinese copies of Russian designs. The Chinese air force is still struggling to produce modern jet engines (Collins & Erickson, 2012). The interest in Russian SLBMs and ICBMs may be to modernize China's nuclear deterrent. China has had a significant nuclear deterrent for decades, but as time goes by, technology does start to become outdated as efficiency, stealth, accuracy and other factors are improved. The "Bulava" missile, however, is a top of the line SLBM and Russia's most expensive military project ("Russian Military Successfully tests", 2010). It is designed to be carried by modern nuclear capable submarines. Should this system be successfully copied and installed on future PLAN submarines, those submarines' firepower and deterrence ability would significantly increase.

As China's military dashes to catch up, the expense of slow research and development make quick acquisitions of previous work by US, Russian, and other scientists increasingly appealing – especially since China today, more than ever, has funds to facilitate such transactions. Not only does it save resources, but also saves crucial time. The faster the pace of military modernization, the more quickly China will narrow the military technology gap, which will in turn possibly give it more leverage in future negotiations

IV. Capabilities

Overview of Conventional Forces

China has the largest standing army in the world. The People's Liberation Army constitutes the backbone of Chinese armed forces, and has for a long time been the dominant branch within the armed forces. For decades, most of its equipment was obsolete. But China has been modernizing their armed forces in what seems to be a greater shift to a professional army as opposed to the current largely conscript based armed forces (Central Intelligence Agency 2010).

After the first Gulf War, China realized the importance of having air cover and a competent air force. Sanctions imposed after China's suppression of the pro-democracy movement in 1989 made it difficult to upgrade many technologies that were falling behind (GWU National Security Archive, 2001), which explain in part the high level of military-industrial espionage mentioned in the previous section. Since military aircraft engines and other complex technologies were difficult to legally purchase or build under sanctions, China chose a variety of ways to catch up. In addition, China has embarked on joint programs with other countries to produce the weapons it needs after the 1989 sanctions. The JF-17 (somewhat similar to the American F-16 multirole fighter) program, for example, was carried out with Pakistan. (Pakistan & China, 2011)

China has long been a top arms importer in the decades since the People's Republic of China was founded, reaching a record from 2002 to 2006 (Ten, 2012). But there are signs that this trend has been reversing as China now produces more technologies domestically, now even exporting some of these weapons. Perhaps the most significant development concerning the Chinese air force was the introduction of

the J-20, China's stealth fighter in January of 2011.

A look at the current capabilities of the PLAN gives a better picture of where they stand in terms of technological progress and the ability to project power.

Mines, Torpedoes, Anti-ship missiles

Traditional weaponry constitutes the majority of firepower deployed by all sides in the theater. Torpedoes and sea mines have been in use before even the First World War. Today their modern descendants are equally lethal. Advanced triggering mechanisms can allow a sea mine to "listen" to a ship passing and compare the data with a database that allows it to identify the size, class, and the type of ship. These systems can then be deployed with the intention of only targeting large military ships, for example. Other types of mines can be laid at the bottom of the sea to seek out sonar-evading submarines. Anchored, under water, or free floating mines from the Second World War still make headlines to this day when they are spotted (Truver, 2012).

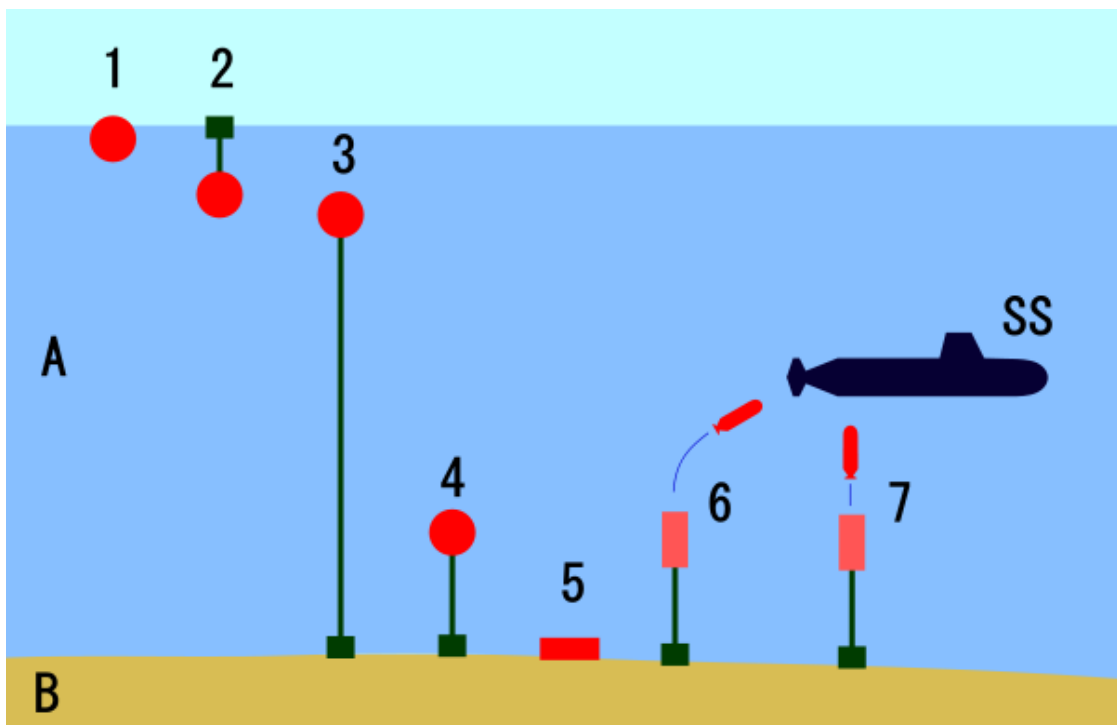


Figure 3 Various types of Sea Mines. This illustration shows multiple ways in which naval mines can

be deployed. Taken from the Wikimedia Commons.

The illustration (figure 3) above shows the various types of mines that can be deployed in a future naval conflict. A represents mines above the sea floor, whereas mines in category B are on or connected to the seabed. These deadly devices can be free floating or moored. Torpedoes have also evolved. Smart torpedoes today can be launched from a variety of platforms and even used essentially as naval booby traps, (6 and 7 in the illustration). Some, like the US Mark 60 CAPTOR, can lie in wait until it “hears” target passing by at which point it is activated to seek and destroy (Truver, 2011). Sea mines are powerful in a sense that they interdict enemy units but also freeze sea traffic as it would be hard for shipping insurance to accept such a high risk. Their use would signal a serious escalation.

Anti-ship missiles are able to strike farther and faster. They are becoming increasingly available and rightfully feared by naval commanders (Gertz, 2010). In the Falklands for example, the Argentines removed their French supplied ship-based “Exocet” anti-ship missiles and launched some of missiles from improvised ground-based mobile launchers. Despite eventually losing the war, the Argentines managed to damage and disable multiple ships from the British Royal Navy, creating shock and surprise (Ezard, 2000).

In 2006, the war between Lebanon and Israel provided further evidence of the threat from such systems. The INS “Hanit” was struck by a Chinese made C-802 anti-ship missile, launched from land by Hezbollah operatives. The low flying missile struck above the waterline, killing four sailors, and severely damaging the propulsion system of the ship. Despite the deck catching on fire, the ship managed to safely return to base for emergency repairs (Books, 2010).

A number of coastal countries have invested in such systems. Syria, at center

of international attention due to the current violence, had invested in powerful Russian “Bastion” anti-ship supersonic cruise missiles. With a range of 300 km and the ability to cruise at supersonic speed “several meters above the water surface,” these weapons are sure to discourage any foreign intervention via the eastern Mediterranean. (“A closer look at Russian arms sales”, 2012)



Figure4: Improvised launcher used by Argentines to engage British ships. Anti-ship missiles can also be a coastal threat. Taken from Mycity-Military forum.

Unmanned Aerial Vehicles

Military drone use is increasing as more countries either field or are considering acquiring them in the near future. UAVs have been used heavily over the past decade in Afghanistan, Iraq, Somalia, Pakistan, Yemen, and other areas. They have proved utterly decisive in a number of ways. In terms of their capabilities, they can loiter and keep eyes on the ground for extended periods of time, relaying high quality live imagery back to their operators. Since they are unmanned, there is no risk of losing a pilot in the event of hostilities or accidents; therefore, risky covert rescue missions that once characterize manned flights can be avoided. Confidential on-board data and sometimes the vehicle itself can self-destruct (Axe, 2008). It is also common for the US and other forces to call in air strikes to destroy any hardware left behind that could potentially be acquired by the enemy, hence the uproar by critics of the US President’s inability to destroy the advanced US stealth UAV, the RQ-71 Sentinel,

allowing it to fall into Iranian hands in December of 2011 (Durante, 2011).

Lower altitude armed drones create a continuous sound of buzzing over the heads of its victims, which has a psychological impact by instilling fear of sudden death on their potential targets and restricting their freedom of movement. Despite the fact that the United States still holds an edge in the most advanced aspects of drone technology, such as stealth coating and high altitude sensors, China has deployed a very large number of new drones recently, including copies of the Predator and the Global Hawk (Lee, Johnson, 2012).

In an aerospace exhibition in 2010 in Zhuhai, China, various types of Chinese drones were presented to the public, including a tiny 220 gram drone for low altitude reconnaissance. The US fleet should expect UAV activity by the PLA in both reconnaissance and armed roles. Unarmed UAVs in large numbers will increasingly be used to scout and keep an eye on naval traffic.



Figure 5: Chinese version of the US “Predator” armed drone at an exhibition. Taken from Aviationweek.com

Advances in Space

Space is another crucial dimension of any modern conflict. The reliance on vulnerable systems, like satellites for communications and navigation, has facilitated

US military operations and logistics, but these tools should not be taken for granted. China's space achievements have been peaceful, but, in the absence of a clear distinction between their civilian and military space programs, there are more questions than answers (USCC, 2012).

In June of 2012, three Chinese astronauts touched down in north western China after a successful thirteen day mission, performing a manual docking space lab module for the first time. After numerous key steps, following the trend set by Russia and the United States, China has now completed spacewalks, automated and manual docking, and is in the process of building a permanent space station. China hopes to have its own fully functional space station by 2020 (Zhi, 2012).

In 2011, Intelligence Committee member Michelle Bachmann mentioned China "blinding United States satellites with lasers." A Washington Post report on the matter suggests the Chinese lasers would be more suitable for tracking and studying US satellites' orbit than for permanently "blinding" them (Kessler, 2011). As is the case with the anti-ship ballistic missile (ASBM), this could be a technology they are not yet mastering but may have the potential to improve over the next decade. Experts seem to agree that currently, China does not possess any lasers that threaten US satellites (UCS, 2007).

But China has another anti-satellite capability. In January of 2007, China destroyed one of its own weather satellites using a ballistic missile (Broad, Sanger, 2007). This was not only a demonstration of the ability to destroy orbiting satellites, but also a warning of the vulnerability of these systems that are vital for navigation and communications.

The Chinese conquest of space will have major implications for the security of the 7th fleet. Advances in space surveillance would complement their improving

ability to collect live data from other sources, especially unmanned aerial vehicles that would efficiently command and control systems with minimal time delays when passing orders down the chain of command. Their greatly enhanced surveillance capabilities would allow them to keep their eyes on the US fleet at all times, within range of their improving anti-ship missile capabilities and also a potential game changer: the anti-ship ballistic missile.

Anti-Ship Ballistic Missiles

There has been much talk in defense circles about the so called “carrier killer” that would be able to deny the United States Navy strike forces from areas within its range. That is one of the 7th Fleet’s biggest fears: a ground based, long ranged ballistic system that can acquire targets at sea, track and engage the targets at a range of over 1500 kilometers. Responding to fire from this system will also be difficult as it is setup on a TEL (transporter, erector, and launcher) vehicle and can relocate after launch.

The concept of deploying a ballistic system to neutralize enemy ships was first studied by Soviet tacticians in the 1970s (US Dept. of State, 1979). While the idea of using a ballistic trajectory to target enemy shipping from long range was an interesting idea, the technology at the time made the task extremely challenging. Without today’s modern satellite systems, drones, and overall enhanced ability to transfer large amounts of live data over great distances, it was not possible to master trajectory and targeting, especially in the final stage, terminal guidance, right before the warhead impacts its target. Decades later, People’s Liberation Army (PLA) strategists are revisiting the ASBM concept and seem to be investing in building up the same elements that were too technologically challenging to implement in the past.

In other words, China is increasing its ability to monitor both its coastline as well as contested areas (Cole, 2012). As their ability to monitor the seas and track the US fleet in real time becomes a reality, so will their targeting potential. But indisputable figures and numbers are hard to come by, and the Chinese, as was the case with their first stealth fighter, remain somewhat secretive. According to the United States Navy, the system has reached “initial operational capability” as of December 2010 (USCC, 2012).

However, as a conventional force, the PLAN still suffers from weaknesses such as in command and control; and their weak amphibious forces would make retaking Taiwan a difficult task (Cole, 2010).

The technologies mentioned above, used in an asymmetric fashion, will have the potential to increase the reach and lethality of the Chinese armed forces. Asymmetric warfare is defined by the Department of Defense as “attempts to circumvent or undermine an opponent’s strengths while exploiting his weaknesses using methods that differ significantly from the opponent’s usual mode of operations” (Miles, 1999). China’s PLAN, despite having an invested in more warships, (figure 5), may engage in so called anti access or area denial strategies. In this strategy, experts can see how an inferior PLA can make fighting extremely costly for the US Navy by using large numbers of precision guided weaponry such as anti-ship missiles and sea mines. James Holmes, a defense analyst and professor at the US Naval War College, says “Effective access denial would imperil important U.S. interests, especially around the Asian periphery, while corroding U.S. commitments to allies within weapons range of access deniers” (Holmes, 2012).

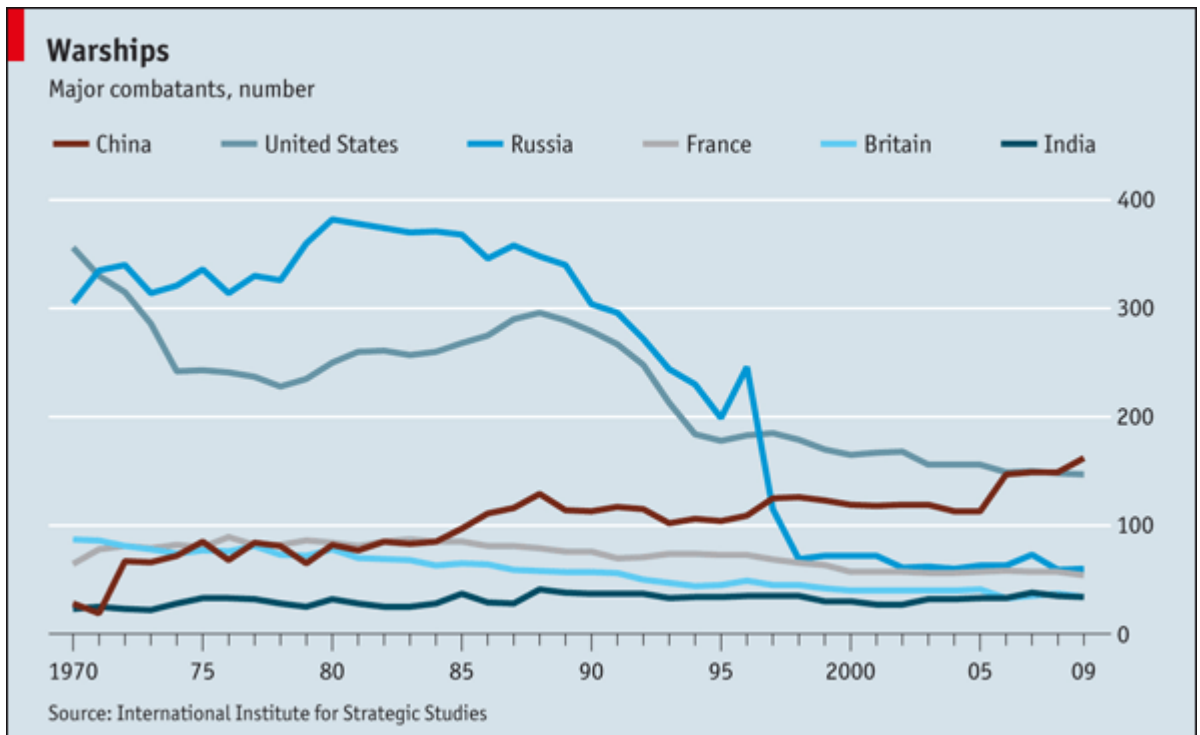


Figure 6 Comparison of Naval Warships inventories, US, PRC and other major powers. Taken from the International Institute for Strategic Studies.

Nuclear Capabilities and Scenarios

Despite nuclear scenarios being unlikely, it is important to know what the nuclear standing is on both sides as this would have an effect on the balance of power between the US and China. A study carried out by Georgetown University claims that China had a massive hidden nuclear arsenal in underground tunnels, hiding “2000 to 4000 nuclear weapons” (Wan, 2011). Such a shocking number is significantly higher than the CIA’s predictions, which place the figure closer to 500 (Presutti, 2011). A number of experts disagreed (CIA, 1996).

Hans Kristensen is director of the Nuclear Information Project at the Federation of American Scientists. In an article titled “No, China does not have 3000 Nuclear Weapons” (Kristensen, 2011), he refutes the high number by arguing that vital input materials such as highly enriched uranium and plutonium were simply not

present in sufficient quantities to produce that many weapons. In addition, the delivery vehicles were not available in such numbers to make the “3,000 weapons” actually usable, i.e. delivered by aircraft, missile, etc. In the article, the author points out: “It neither has produced the fissile material needed to build that many, nor does it have delivery vehicles enough to deliver that many warheads.”

I had an opportunity to meet with Mr. Kristensen, and he helped me address some questions concerning Chinese military capabilities. We discussed a range of topics related to China’s capabilities, past incidents, and the PLA’s nuclear forces. We also touched on some elements of intent and possible scenarios.

When asked about most probable incidents that might trigger open confrontation, Taiwan quickly came to mind:

There seems to be one principal scenario that has been dominating in the last couple of decades and that has been the issue of Taiwan. Something that happens in the context of that island that draws in forces from the United States into the area and China trying to counter that. Perhaps especially when you get into issues such as the primary platforms in the fleet with the aircraft carriers come in. If China were to sink one or two of our aircraft carriers, then in such a scenario you could see escalation happening, not necessarily escalation to nuclear but certainly to another level of conventional conflict, that could then turn into nuclear. These situations have a way of, once you step in with one foot, and it gets hurt, then you have to go in and defend it and go up a level. Now what would be the US interest? Would it be in US interests to go nuclear over Taiwan? I, frankly speaking, don’t really see it.

Does China possess a nuclear submarine fleet?

Not yet. They are currently building one. They did have one nuclear submarine for 3 decades, of indigenous production, but heavily based on Russian technology. They did not have much luck with it. It had never sailed on a deterrent patrol, far from China's borders. It had many problems with the reactor, and training was poor. Now China is building a new class of ballistic missile submarines, the "Jin" class. They appear to have built three so far; two of them have been finished and handed over to the navy. But they don't carry nuclear missiles. And the point here is that the Chinese central military commission is very reluctant to authorize nuclear weapons to the armed forces in peace-time.

Is that out of a concern for accidents or matters of internal security?

This is about who is in control. The armed forces can go out and exercise and do what they need to do but the warheads, they stay in the bunkers until wartime. So if they have a scenario in an escalation, they would gradually release some these warheads into the inventories, which then they go on the missiles. The missiles then show up in the countryside or on the submarines, which then might sail out. And there is another interesting escalation scenario. They are building this class of nuclear submarines because presumably, they're going to deploy them somehow. They're probably not going to deploy nuclear weapons on them in peace time, which would be a complete change in their policy. But suppose there is a crisis, and they do deploy those warheads in their submarines, and they start sailing out. Suppose we are in a very tense situation, and one of those submarines has an accident. It disappears, doesn't phone home. Do the Chinese conclude that the US has sunk one of its nuclear submarines? There are scenarios where you can have great misunderstandings

and bombastic reactions.

If the Hainan Island Incident (when a United States EP-3 reconnaissance plane experienced a mid-air collision with a Chinese fighter jet) back in 2000 were to happen again today, over a decade later, how different would it be? Would you expect a more assertive, stronger response?

I don't think it would be much different. The point is that our spy planes are out there every day. It is not that we are not operating in this area, we are there. This of course where China's expanding economic interests become interesting. They have a particular point about that economic zone—others, in their view, are not allowed to operate military forces inside. So they are using that exclusive zone as an argument. Whether they would be more assertive about it should an incident occur today, I don't think so because, again, we are in the area, we operate there every day. In fact, the US makes a point of not leaving. There is a clear intention to stay there, and the Chinese can be happy about that or not. But in the end it comes back to the fact that neither of the two sides have an interest in escalation. So really a scenario that worries many is having a rogue commander on the Chinese part that has the authority to react to a situation and decides to overreact. He can also do that with conventional forces to some extent. For the United States and its allies, it would be a "wait and see who is behind this move, it might not be the central committee behind this." That is just to say that neither side has an interest in escalation and they know it. (Hans Kristensen, personal communication, Washington DC, 2012.)

V. Conclusions

While it is probable that the US will keep its technological edge for some time to come, there is no doubt China is improving its defense capabilities in a variety of areas including space capabilities, cyber capabilities, white and increasingly blue water capabilities, ballistics and other defense areas. The PLAN continues to invest in small, stealthy fast attack craft armed with anti-ship missiles. Used in mass numbers in “swarm” tactics, they can take losses but can result in a much larger kill. Armed with powerful anti-ship missiles, these stealthy crafts can “fire and forget” and let their “CSS-N-8 Saccade” anti-ship missiles use their radar to home in on larger expensive targets at over 300 kilometers away. Their range and accuracy will be increased, and Chinese anti-ship systems are increasingly equipped with GPS guidance and TERCOM (terrain contour matching), further aiding their accuracy. (Fisher, 2005).

China is increasingly investing in guided missile destroyers, with increasingly capable anti-ship missiles and powerful air defense capabilities can shield smaller craft, complicating tasks by the 7th fleet’s aircraft. Whether on peaceful patrols or on combat duty, Chinese Missile Destroyers armed with Russian S-300 FM missiles can constitute a threat to US aircraft at radius of about 93 nautical miles (150 kilometers). In addition, its YJ-83 anti-ship missiles have a range of about 200 kilometers, and are constantly being improved. These ships can further support asymmetric operations by providing cover to smaller, stealthier “Houbei” class fast attack craft that can move closer to US naval groups, engage with anti-ship missiles and quickly fall back to the cover provided by the guided missile destroyers.

As I described in the previous section, advanced mines can be quickly deployed by a variety of methods (see figure 2). The US Navy has extensive

experience in dealing with mine warfare and has recently purchased advanced unmanned submarines from Germany and delivered them to the 5th fleet as part of the standoff with Iran in the Gulf of Hormuz (Clifton,2012), but used en masse in the South China Sea they can effectively shut down sea routes.

The Anti-Ship Ballistic Missile may be a threat but only if its complex reentry and guidance system is in perfect order. This system requires real-time intelligence and a number of other pre requisites to function properly. Intelligence on this system's performance is sparse.

In my view, most media depictions of the Chinese Dragon are rather alarmist. Much attention (perhaps too much) is given to new "carrier killer" and China's first stealth 5th generation aircraft, but there are other ways in which the threat to the 7th Fleet may be greater. A blend of modern technology and asymmetric applications can be more damaging to the US fleet should there be a confrontation. Large numbers of modern guided systems, such as anti-ship missiles, used in combination with "smart" naval mines, would allow "effective denial" with having to match the firepower of the United States 7th Fleet (Holmes, 2012).

Multipolar World

According to the Director of National Intelligence Council's predictions for 2025 (National Intelligence Council, 2008), the world will become increasingly multipolar and key powers will have a greater say in international as well as regional issues. The report names Brazil, India, China and Russia as powers the United States will have to work with in future.

China considers itself a main power within the numerous powers that will lead tomorrow's multipolar world. China will likely emulate other powers as it sees itself

reaching equal footing with these powers and their spheres of influence.

Further evidence of China's multipolar outlook was reinforced by Major General Zhu Chenghu of China's National Defense University. He told Reuters news agency on July 18th 2012 that China may retaliate against the United States' plan to build a missile shield. He states that "it undermines the strategic stability... We have to maintain the credibility of deterrence," and China "will have to modernize its nuclear arsenal" because the deployment of a missile defense system "may reduce the credibility of its nuclear deterrence" (Dobbins, 2012).

The West Pacific remains an area of the world vital for the economic well-being of the United States and China. "The United States recognizes that the Asia-Pacific region is becoming more important in our economic and diplomatic and security interests" said US defense Secretary Leon Panetta in a press briefing in New Zealand in September of 2012 (Panetta on the Asia Pacific Region, 2012). Conflict would harm both parties as China's export led economy would suffer from trouble in the South China Sea, and the US and its allies would much to lose from trouble in these waters, which contain sea routes vital for the economic wellbeing of the West Pacific and, to a certain extent, the rest of the world.

References:

Asia defense spending to overtake Europe. (2012, March 7). *Financial Times*.

Retrieved from <http://www.ft.com/cms/s/0/0aab435c-6846-11e1-a6cc-00144feabdc0.html#axzz2ADp37J1t>

Axe, David. (2008) *War Bots: How US Military Robots Are Transforming War in Iraq, Afghanistan, and the Future* Nimble Books

Books,LLC (2010) *Naval Ships of Israel: Ins Hanit, Sa'ar 5-Class Corvette, Protector Usv, Ins Lahav, Ins Eilat* ISBN: 9781156137000

Broad, W. J. & Sanger, D. E (2007) Flexing Muscle, China Destroys Satellite in Test.

The New York Times Retrieved from

http://www.nytimes.com/2007/01/19/world/asia/19china.html?pagewanted=all&_r=0

Buckley,Chris. (2012, April 22). China Military Wars of Confrontation Over Seas.

Reuters News. Retrieved from <http://www.reuters.com/article/2012/04/22/us-china-usa-philippines-idUSBRE83K08D2012042>

Central Intelligence Agency (2010). *World Fact Book*. Retrieved from

<https://www.cia.gov/library/publications/the-world-factbook/>

China's GDP Annual Growth Rate. (2012) *Trading Economics* Retrieved from

<http://www.tradingeconomics.com/china/gdp-growth-annual>

China's military rise: The dragon's new teeth. (April 7th 2012) *The Economist*.

Retrieved from <http://www.economist.com/node/21552193>.

Chinese fishermen "stab South Korean coast guards". (2011, December 12). *BBC*

News. Retrieved from <http://www.bbc.co.uk/news/world-asia-16134647>

Clifton, Larry. (2012) US deploys Seafox submersibles to Persian Gulf. *Digital*

Journal. Retrieved from: <http://digitaljournal.com/article/328372>.

Cloud, David S. (2012, June 3). Pentagon seeks return to long-abandoned military port in Vietnam. *Los Angeles Times*. Retrieved from

http://latimesblogs.latimes.com/world_now/2012/06/pentagon-cam-ranh-bay-vietnam.html

Cole, M. J (2012) Experts puzzled by mysterious UAVs on Chinese frigate. *Taipei*

Times Retrieved from

<http://www.taipeitimes.com/News/front/archives/2012/05/18/2003533100>

Collins, Gabe & Erickson, Andrew (2011). China's Jet Engine Future *The Diplomat*.

Retrieved from: <http://thediplomat.com/flashpoints-blog/2011/07/13/chinas-jet-engine-future/>

Coonan, Clifford(2012). China-Japan Island row disrupts trade *Irish Times*. Retrieved

from <http://www.irishtimes.com/newspaper/finance/2012/1009/1224325053213.html>

Durante, Thomas. (2011) Dick Cheney rips Obama for failing to act on downed US drone in Iran. *The Daily Mail*. Retrieved from

<http://www.dailymail.co.uk/news/article-2073428/Dick-Cheney-rips-Obama-failing-act-downed-US-drone-Iran.html>

Fabunan, Sara Susanne (2012) On Sea Issue: China Warns US, ASEAN to stop meddling in talk.

Manila Standard. Retrieved from <http://manilastandardtoday.com/2012/09/05/on-sea-issue-china-warns-us-asean-to-stop-meddling-in-talks/>

Elman, Benjamin (2002) Naval Warfare and the Refraction of China's Self-Strengthening Reforms into Scientific and Technological Failure, 1860

Retrieved from: <http://rhart.org/conferences/chinesescience/papers/elman.pdf>

Engleman, Eric. (2011, November 9). US intelligence calls china world's biggest cyber thief. *BusinessWeek*. Retrieved from <http://www.businessweek.com/news/2011-11-09/u-s-intelligence-calls-china-world-s-biggest-cyber-thief.html>

Ezard, John. (2000) Officers dismissed radar warning of Exocet attack on HMS Sheffield *The Guardian* retrieved from

<http://www.guardian.co.uk/uk/2000/sep/26/falklands.world>

Feldman, Shai (2001) *The Middle East Military Balance 2000-2001* ISBN: 0-26206219-4

Retrieved from

<http://books.google.com/books?id=js0nmsiXGNwC&printsec=frontcover&dq=the+middle+east+military+balance&hl=en&sa=X&ei=BaiiUIvdBM6v0AGH1ICIAw&ved=0CDYQ6AEwAQ#v=onepage&q=the%20middle%20east%20military%20balance&f=false>

Fenby, Jonathan (2012) *China's geoeconomic strategy: does China have a foreign policy?: domestic pressures and China's strategy*. IDEAS reports - special reports,

Fisher, Richard (2005). China's New Strategic Cruise Missiles: From the Land, Sea and Air. *Strategycenter.net* Retrieved from

http://www.strategycenter.net/research/pubid.71/pub_detail.asp

Foster, Peter. (2010) North Korea warns of 'holy war' using nuclear weapons. *The Telegraph* Retrieved from

<http://www.telegraph.co.uk/news/worldnews/asia/northkorea/8221723/North-Korea-warns-of-holy-war-using-nuclear-weapons.html>

George Washington University National Security Archive, *the Declassified History*,

Retrieved from <http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB39/>

Gertz, Bill. (2010) Threat in Asia is Anti-ship missiles. *The Washington Times*.

Retrieved from <http://www.washingtontimes.com/news/2010/mar/23/threat-in-asia-is->

anti-ship-missiles/?page=all

Glionna, J. M. (2011). Sea border a trigger for Korean peninsula tension. *Los Angeles Times*. Retrieved from <http://articles.latimes.com/2011/jan/06/world/la-fg-korea-sea-border-20110107>

Hanes, Travis (2002) *The Opium Wars*. page 38 Retrieved from:
http://books.google.com/books?id=j_NeegcOBWUC&source=gbs_navlinks_s

History of the US 7th Fleet, US Navy Official Website. Retrieved from
<http://www.c7f.navy.mil/history.htm>

Holmes, James (2012). US confronts an anti-access world. *The Diplomat*. Retrieved from :
<http://thediplomat.com/2012/03/09/u-s-confronts-an-anti-access-world/>

Hu, Z. & Khan, M.S. Why Is China Growing So Fast? (1997, June). *Economic Issues*, 8. International Monetary Fund. Retrieved from
<http://www.imf.org/external/pubs/ft/issues8/index.htm>

James Dobbins (2012) 'War with China', *Survival: Global Politics and Strategy*, vol. 54, no. 4, August–September pp. 7-24.

Kim & Glosserman (2004) *The Future of US-Korea-Japan Relations*. ISBN:
0892064544

Retrieved from <http://books.google.com/books?id=lZqk9tX->

jk4C&printsec=frontcover&dq=inauthor:%22Brad+Glosserman%22&hl=en&sa=X&ei=WamiUJDpEvC80QHptoC4BA&ved=0CDYQ6AEwAQ#v=onepage&q&f=false

Kitchen, Nicholas (ed.) SR012. LSE IDEAS, The London School of Economics and Political Science, London, UK.

Retrieved from <http://eprints.lse.ac.uk/44201/>

Kleine-Ahlbrandt, Stephanie (2012). High Stakes in the South China Sea. *The Diplomat*. Retrieved from: <http://thediplomat.com/flashpoints-blog/2012/07/30/high-stakes-in-the-south-china-sea/>

Kristensen, Hans. (2011). No, China does not have 3,000 nuclear weapons.

Federation of American Scientists. Retrieved from <http://www.fas.org/blog/ssp/2011/12/chinanukes.php>

Jinghao, Yang. (2012, March 22) Seizing of Fishermen Sends Warning to Vietnam.

Xinhua Official News Agency Retrieved from <http://www.globaltimes.cn/DesktopModules/DnnForge%20-%20NewsArticles/Print.aspx?tabid=99&tabmoduleid=94&articleId=701545&moduleId=405&PortalID=0>

Jingjie, Yang. (2012, April 12). Beijing Protests over South China Sea Standoff. *The Global Times*. Retrieved from

<http://www.globaltimes.cn/DesktopModules/DnnForge%20-%20NewsArticles/Print.aspx?tabid=99&tabmoduleid=94&articleId=704483&module>

Id=405&PortalID=0

Le Miere, Christian. (2012). America's Pivot to East Asia: The Naval Dimension.

Survival: Global Politics and Strategy, 54(3), 81-94.

doi:10.1080/00396338.2012.690984

Lee, Eloise. & Johnson Robert. (2012) The Chinese Navy Is Betting Big On Its New Submarine Hunting Drones. *Military & Defense, the Business Insider*. Retrieved from

<http://www.businessinsider.com/chinese-drones-reverse-engineered-to-hunt-submarines-2012-4>

Levin, Carl. GAO report shows China is failing to crack down on bogus electronic parts. (March 26, 2012) Retrieved from

<http://www.levin.senate.gov/newsroom/press/release/-levin-mccain-gao-report-shows-china-is-failing-to-crack-down-on-bogus-electronic-parts/>

Luan (2012, May 10). China's Military Newspaper warns Philippines of Huangyan Island Incident. *Xinhua Official News Agency*. Retrieved from

http://news.xinhuanet.com/english/china/2012-05/10/c_131579618.htm

Marshall, Michael (2012) Oil reserves at heart of Japan-China Island Dispute.

Retrieved from <http://www.newscientist.com/article/dn22279-oil-reserves-at-heart-of-japanchina-island-dispute.html>

Miles, Franklin B. (1999) *Asymmetric Warfare: An historical Perspective*. Retrieved from <http://www.hsdl.org/?view&did=439201>

Minnick, Wendell. (2012). Singapore Airshow Raises Fighter Industry Stakes in Asia. *Defense News*. Retrieved from:

<http://www.defensenews.com/article/20120209/DEFREG03/302090001/Singapore-Airshow-Raises-Fighter-Industry-Stakes-Asia>

Mogato & Blanchard (2012) Chinese frigate heads home, averts South China Sea Standoff *Reuters News*, Retrieved from <http://www.reuters.com/article/2012/07/15/us-china-philippines-ship-idUSBRE86E01B20120715>

National Intelligence council, (2008) *Global Trends 2025*, Office of the Director of National Intelligence. Retrieved from:

http://www.dni.gov/files/documents/Global%20Trends_2025%20Report.pdf

Panetta, Leon (2012) U.S. Department of Defense: Office of the Assistant Secretary of Defense (Public Affairs) retrieved from:

<http://www.defense.gov/speeches/speech.aspx?speechid=1681>

Pakistan and China's JF-17 Fighter Program (2011). *Defense Industry Daily*.

Retrieved from <http://www.defenseindustrydaily.com/stuck-in-sichuan-pakistani-jf17-program-grounded-02984/>

Panetta on the Asia-Pacific Region (2012). *VOA News*. Retrieved from <http://editorials.voa.gov/content/panetta-on-the-asia-pacific-region/1514051.html>

Polmar, Norman (2005) *The Naval institute guide to Ships and Aircraft of the US Fleet*. Eighteenth Edition, Retrieved from <http://www.usni.org/store/books/catalog-spring-2012/naval-institute-guide-ships-and-aircraft-us-fleet-19th-edition>

Presutti, Carolyn (2011) Scientists Dispute University Study on China's Nuclear Arsenal *VOA News* Retrieved from <http://www.voanews.com/content/scientists-dispute-university-study-on-chinas-nuclear-arsenal-135140753/168262.html>

Richburg, K. B. (2012, March 4). China military spending to top \$100 billion in 2012, alarming neighbors. *The Washington Post*. Retrieved from http://www.washingtonpost.com/world/china-military-spending-to-top-100-billion-this-year/2012/03/04/gIQAJRnypR_story.html

Refuto, George J (2011). *Evolution of the US sea-Based Deterrent: War Fighting Capabilities*

ISBN: 978-14568811-53

Robinson, Thomas W. (1982, June). Chinese Military Modernization in the 1980s.

The China Quarterly, 90, 231-252. Retrieved from:

<http://www.jstor.org/stable/653568>

Roy, (2000). Tensions in the Taiwan Strait. *Survival: Global Politics and Strategy* .

Volume 42, Issue 1. Retrieved from

<http://www.tandfonline.com/doi/pdf/10.1093/survival/42.1.76>

Russian military successfully tests new missile. (2010, October 7). *Fox News*.

Retrieved from <http://www.foxnews.com/world/2010/10/07/russian-military-successfully-tests-new-missile/>

Salameh, Mamdouh G, (1995) China, oil, and the risk of regional conflict. *Survival, Global Politics and Strategy* Volume 37, Issue 4. Retrieved from

<http://www.tandfonline.com/doi/abs/10.1080/00396339508442820>

Scott, David (2008) *China and the International System, 1840-1949*

Pages 22-29 Retrieved from

http://books.google.com/books?id=6U_DPS4vfO0C&source=gbs_navlinks_s

Schonhardt, Sara. (2012, June 2). US Shifting Bulk of Warships to Asia-Pacific. *VOA*

News. Retrieved from <http://www.voanews.com/content/panetta-us-to-put-more-warships-in-asia/1146345.html>

Shai, Shammai & Cradock, Christopher (2005). *Frost & Sullivan*. Retrieved from

<http://www.frost.com/sublib/display-market-insight-top.do?id=35854398>

Spegele, Brian. (2012, March 16). Vietnam Protests Cnooc's Plans in Disputed South China Sea. *The Wall Street Journal*. Retrieved from <http://online.wsj.com/article/SB10001424052702303863404577285152075207704.html>

Taiwan. *Philip's World Factbook 2008-2009* [Credo Reference digital version]. London: Philip's, 2008. Retrieved from <http://www.credoreference.com/entry/philipswfb/taiwan>

Taranova Alexandra. (2010). Two scientists held in murky spy case. *The Saint Petersburg Times*. Retrieved from http://www.sptimes.ru/index.php?story_id=32555&action_id=2

Ten Kate, Daniel. (2012) China's Share of Global Arms Imports Falls, SIPRI Says. *Bloomberg News* Retrieved from <http://www.bloomberg.com/news/2012-03-18/china-buys-fewer-weapons-as-local-industry-expands-sipri-says.html>

Truver, S. C. (2011) United States Naval War College, "Sea Mines 2007" Retrieved from www.usnwc.edu/getattachment/19669a3b-6795-406c-8924-106d7a5adb93/Taking-Mines-Seriously--Mine-Warfare-in-China-s-Ne+sea+mines+2007+united+states+naval+war+college&hl=en&gl=us&pid=bl&srci

d=ADGEEShpbO-BmGD4575Jia4JhGBvgIvYsduiSXWk8HrQrIZyPN27mLkeDl_-
 X0gh1dfiAZoxthPrBz1bpKwCs0U-
 siN3gCjVWccCo8Wq40IVlrWWUBSngZFS6BGNkboefK41M4-
 pXfR&sig=AHIEtbTm3L6xoN-4gga0QyWsg5eZC-Ir4g

Truver, Scott C (2010). Old Mines Still Have Plenty of Spark. *The Washington Post*.
 Retrieved from [http://www.washingtonpost.com/wp-](http://www.washingtonpost.com/wp-dyn/content/article/2010/04/23/AR2010042304803.html)
[dyn/content/article/2010/04/23/AR2010042304803.html](http://www.washingtonpost.com/wp-dyn/content/article/2010/04/23/AR2010042304803.html)

Two Russian Academics Found Guilty of Passing Ballistic Missile Data to China.
 (June 20, 2012). *Global Security Newswire*. Retrieved from
[http://www.nti.org/gsn/article/russia-finds-two-academics-guilty-passing-bulava-](http://www.nti.org/gsn/article/russia-finds-two-academics-guilty-passing-bulava-secrets-china/)
[secrets-china/](http://www.nti.org/gsn/article/russia-finds-two-academics-guilty-passing-bulava-secrets-china/)

Union of Concerned Scientists, (January 8, 2007) Satellite Laser Ranging in China.
Nuclear Weapons and Global Security. Retrieved from
[http://www.ucsusa.org/nuclear_weapons_and_global_security/space_weapons/technic](http://www.ucsusa.org/nuclear_weapons_and_global_security/space_weapons/technical_issues/chinese-lasers-and-us.html)
[al_issues/chinese-lasers-and-us.html](http://www.ucsusa.org/nuclear_weapons_and_global_security/space_weapons/technical_issues/chinese-lasers-and-us.html)

USS George H. W. Bush Commissioned (2009) *Fox News*. Retrieved from
<http://www.foxnews.com/story/0,2933,479087,00.html>

US-China Economic and Security Review Commission. (April 5, 2012) Indigenous
 Weapons. Retrieved from [http://www.uscc.gov/researchpapers/2012/China-](http://www.uscc.gov/researchpapers/2012/China-Indigenous-Military-Developments-Final-Draft-03-April2012.pdf)
[Indigenous-Military-Developments-Final-Draft-03-April2012.pdf](http://www.uscc.gov/researchpapers/2012/China-Indigenous-Military-Developments-Final-Draft-03-April2012.pdf)

US Department of State. (June 18 1979) Treaty between the United States of America and the USSR on the Limitation of Strategic Offensive Arms. Retrieved from http://www.armscontrol.org/act/2002_06/factfilejune02

US military to help Philippines monitor coastal waters (2012), AFP. *The Telegraph*
Retrieved from <http://www.telegraph.co.uk/news/worldnews/asia/philippines/9328427/US-military-to-help-Philippines-monitor-coastal-waters.html>

US to shift most of Navy ships to Asia Pacific by 2020. (2012, June 3). *Taipei Times*.
Retrieved from <http://www.taipetimes.com/News/front/archives/2012/06/03/2003534385>

Van Cleave, Michelle. (2009, February 6). Foreign Spies Are Serious. Are We? *The Washington Post*. Retrieved from <http://www.washingtonpost.com/wp-dyn/content/article/2009/02/06/AR2009020603498.html>

Wan, William (2011, September 21st) *Washington Post* US announces details of planned arms package for Taiwan retrieved from http://www.washingtonpost.com/world/national-security/us-announces-details-of-planned-arms-package-for-taiwan/2011/09/21/gIQAAbDn8lK_story.html

Wan, William (November 29 2011). Georgetown Students shed light on China's tunnel system for nuclear weapons. *Washington Post- National Security*. Retrieved from http://www.washingtonpost.com/world/national-security/georgetown-students-shed-light-on-chinas-tunnel-system-for-nuclear-weapons/2011/11/16/gIQA6AmKAO_story.html

Welch, Jennie. (2012, November 16). China's Domestic Pressures Shape Assertive Foreign Policy. *Center for Strategic and International Studies*. Retrieved from <http://cogitasia.com/chinas-domestic-pressures-shape-assertive-foreign-policy/>

Wong, Edward (2010, April 3rd) China Military Seeks to extend its Naval Power Retrieved from <http://69.161.159.10/China/Capitalism-Imperialism/ChineseNavyOil-100423.pdf>

Xuetong, Yan. (2011, November 21). How China Can Defeat America. *The New York Times*. Retrieved from <http://www.nytimes.com/2011/11/21/opinion/how-china-can-defeat-america.html?pagewanted=all>

Yap, DJ. (2012, April 23). War Games Not Directed at China. *Global Nation Inquirer*. Retrieved from <http://globalnation.inquirer.net/34343/philippine-us-war-games-won%E2%80%99t-stop-despite-china-warning%E2%80%944afp>

Yusha, Deng. (2012, June 2) Not to make Waves in South China Sea. *Xinhua Official News Agency*. Retrieved from: http://news.xinhuanet.com/english/indepth/2012-06/02/c_131626812.htm

Zagoria, Donald S. (1986) Proceedings of the Academy of Political Science. Vol. 36,
No. 1

Retrieved from <http://www.jstor.org/stable/10.2307/1174015>

Zhi, Chen. (2012) China's first manual space docking successful. *Xinhua News*.

Retrieved from http://news.xinhuanet.com/english/sci/2012-06/24/c_131672642.htm

Figures:

1) South China Sea Map: "The South China Sea Dispute", British Broadcasting Corporation Retrieved from:

<http://www.bbc.co.uk/news/world-asia-pacific-13748349>

2) The Dragon's New Teeth, (2012). *The Economist* retrieved from

<http://www.economist.com/node/21552193>

3) Naval Mines, taken from Wikimedia Commons.

4) Improvised Argentine Launcher, Mycity military forum.

5) Chinese UAV Exhibition, taken from Aviationweek.com

6) Comparison of Major Powers' Warships, International Institute for Strategic Studies

Tables:

Economic Performance Table:

Data from:

The CIA fact book, retrieved from <https://www.cia.gov/library/publications/the-world-factbook/geos/ch.html>

International Monetary Fund,

<http://www.imf.org/external/pubs/ft/weo/2012/02/pdf/text.pdf>

Territorial claims Table. Data from Globalsecurity.org & UNCLOS Agreement.

Retrieved from:

http://www.un.org/Depts/los/convention_agreements/texts/unclos/closindx.htm,

<http://www.globalsecurity.org/military/world/war/south-china-sea.htm>