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**THESIS**

**CHINA'S NAVAL MODERNIZATION AND IMPLICATIONS  
FOR THE SOUTH CHINA SEA**

by

Page E. Small

December 2002

Thesis Advisor:  
Second Reader:

H.Lyman Miller  
Randall J.Hess

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CHINA SEA**

Page E. Small  
Lieutenant, United States Naval Reserve  
B.A., University of Oklahoma, 1996

Submitted in partial fulfillment of the  
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December 2002**

Author: Page E. Small

Approved by: H. Lyman Miller  
Thesis Advisor

Randall J. Hess  
Second Reader

James J. Wirtz  
Chairman, Department of National Security  
Affairs

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## **ABSTRACT**

This thesis analyzes the implications of Chinese navy modernization for the South China Sea. The PRC is modernizing and expanding its naval capacities for the purpose of protecting China's security, territorial, and economic interests. The PRC has placed a great deal of emphasis on modernizing its navy since the early 1990's. Specifically, Beijing has been purchasing Russian conventional naval arms designed to defeat and counter U.S. naval forces in the region. The transformation of China's navy from a coastal defense force to a blue water fleet capable of projecting force at sea will have serious economic, political, and security implications for the United States, as well as for those countries bordering China and the South China Sea.

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## **EXECUTIVE SUMMARY**

This thesis examines China's naval modernization and its impact for the South China Sea. I contend that the People's Liberation Army-Navy's (PLAN) transformation from a coastal defense force to a blue water fleet capable of projecting power at sea will have serious security implications for the United States and its allies and friends bordering the South China Sea.

The PRC is modernizing and expanding the PLAN for the stated purpose of protecting China's security, territorial integrity, and economic interests in the region and beyond. Beijing's concern about China's dependence on oil and natural gas from the Middle East, actual and projected growth in the PRC's economy, and the potential oil and gas reserves in the South China Sea are critical factors driving PLAN expansion. Competing territorial claims for island groups and potential oil, gas, and mineral rights further motivate the PRC's claim that the South China Sea inherently belongs to China.

China's increasing naval power has the potential to upset the military balance of power in the Asia-Pacific and poses a significant threat to U.S. presence as well as to those countries bordering China and the South China Sea. The PRC has placed a great deal of emphasis on modernizing the PLAN since the early 1990s, specifically purchasing Russian conventional naval arms that were designed to defeat and counter U.S. naval platforms. China's motivation to purchase these platforms indicates its desire to protect and maintain its maritime interests.

This thesis analyzes the PLAN's inventory of sea denial platforms and its potential impact in the South China Sea. A future PLAN capable of successfully carrying out a sea denial strategy would enable China to maintain a formidable presence in the South China Sea. As PLAN capabilities increase, its strength will directly enhance China's ability to enforce its interests and eventually alter the balance of power in the region. The United States needs to continue peaceful diplomatic approaches to China on issues of territoriality, sovereignty, and trade in the South China Sea. In addition, the United States should contemplate supporting cooperative ventures between the American and Chinese navies, while continuing to maintain a viable naval presence in the Asia-Pacific to counter China's growing naval presence.

## **I. INTRODUCTION**

This thesis examines China's naval modernization and its impact for the South China Sea. The main argument is that the People's Liberation Army-Navy's (PLAN) transformation from a coastal defense force to a blue water fleet capable of projecting People's Republic of China (PRC) doctrine at sea will have serious security implications for the United States and allies bordering the South China Sea. The thesis is based on primary and secondary open sources addressing PRC interests in the South China Sea, trends in PLAN modernization and strategy, and their significance for future PRC actions in the South China Sea maritime theater of operation. The research for this thesis comes from interviews, periodicals, books, Internet websites, official journals, and reports.

### **A. BACKGROUND**

After reviewing countless articles concerning the PLAN's build up, it became apparent that China will not meet its goal of having a blue water fleet capable of successful power projection across the South China Sea within the next 15-20 years. China's present course of acquiring naval arms and efforts to modernize its South Sea fleet will not support a blue water scenario. What the current PLAN modernization does in fact support is the continuance of a coastal defense force with an increasing offensive capability that could potentially be used to deny access of South China Sea - Sea Lines of Communication (SLOC's), chokepoints, and secure PRC vital interests.

These vital interests include security, territorial, political, and economic issues.

The PLAN is acquiring a host of sea-denial platforms that can be used against future rivals in the South China Sea for the protection of China's perceived interests to be discussed later. The PLAN's future ability to successfully conduct a sea-denial strategy in the South China Sea poses the most likely scenario given China's present path towards naval modernization. The use of China's present inventory in this fashion will have a dramatic impact upon regional security for the U.S. and countries bordering the South China Sea. A modernized PLAN has the potential of altering the balance of power in the region.

## **B. ORGANIZATION**

This thesis briefly examines the evolution of the PLAN from a small coastal defense force into the third largest navy on the planet. An in-depth analysis of past and current PLAN modernization, naval doctrine, and strategy gives insight into the political and technological challenges confronting China's navy. The thesis discusses PRC maritime interests in the South China Sea. China looks to the South China Sea as an area of Chinese exclusivity. The competing territorial claims, sovereignty and resource issues by neighboring countries continue to undermine PRC claims that the South China Sea inherently belongs to China. Hostility has grown among Chinese over the competition for South China Sea's resources. The PRC is greatly concerned about its growing energy demands and looks to the South China Sea to potentially solve its future fate, as well as a focal point of national security.



In lieu of China's recent signing of the ASEAN supported Declaration on the Conduct of Parties in the South China Sea, past efforts to resolve conflicting interests with China over South China Sea issues have been met with resistance, both politically and militarily.<sup>1</sup> This is a major concern for the United States in the future since its Asian allies are heavily reliant upon the South China Sea for its commercial livelihood and resources.

The current capabilities of the PLAN cannot be considered as a backward maritime threat that will pose no significant challenge to the U.S. in the early 21<sup>st</sup> century. During the past ten years China has steadily equipped its naval inventory with large amounts of conventional arms and naval platforms that are considered to be extremely effective. These acquisitions include *Kilo*-class submarines, *Sovremenny*-class guided missile destroyers, and various other armaments of Russian origin designed to counter and defeat U.S. naval weapons and platforms. Together, they pose a commanding presence in the South China Sea and a viable threat to future access and stability in the South China Sea.

### **C. CHAPTER OUTLINE**

Chapter II briefly examines China's storied maritime tradition and the evolution of the PLAN. In this chapter I contend that China places great importance and need in having a modernized navy to meet its potential 21<sup>st</sup> century threats.

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<sup>1</sup> "China, ASEAN Sign Code of Conduct on South China Sea." *People's Daily* (November 5, 2002): Available online <[http://english.peopledaily.com.cn/200211/05/eng20021105\\_106254.shtml](http://english.peopledaily.com.cn/200211/05/eng20021105_106254.shtml)>

Chapter III addresses many of China's interests in and around the South China Sea, focusing on the relative importance of each in respect to China's future security and economic prosperity.

Chapter IV focuses on the PLAN's foreign arms acquisitions, current capabilities, and their collective potential use as sea-denial platforms.

In summation, Chapter V offers an assessment of how the threat of a modernized PLAN will threaten the military balance of power and implications for U.S. policy in the area.

## II. PLAN MODERNIZATION

### A. CHINESE NAVAL AND MARITIME TRADITION

China has a storied and often inconsistent maritime tradition of rising to dominance during some periods and fading into relative obscurity during others. China's naval roots can be traced back to its earliest recorded battle in 549 BC when rival rulers used ships to assault each other's seacoast.<sup>2</sup> The Chinese were once the masters of the high seas. During the Song dynasty (AD 960-1279) Chinese fleet's numbered upwards of 13,000 ships and their presence stretched across Asia into Northern Australia and Western Africa.<sup>3</sup> Much like the present PLAN, China's dynastic navies performed similar roles in settling territorial disputes, issues of sovereignty, deterrence, national security, and protecting interests.

China's naval dominance reached its peak during the Ming dynasty (1368-1644), when Chinese shipbuilding, maritime trade, and navigation ability were superior to many of the European maritime countries. The Chinese developed and mastered the art of multi-masted sails, compartmentalization, and large hull construction. Their ships were greater in size and design than those found in Europe. The Chinese ships reached lengths over 500 feet and displaced up to 1500 tons during the Ming dynasty. Towards the latter part of the Ming dynasty, a political power struggle occurred between two factions of the Chinese court

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<sup>2</sup> Cole, Bernard D. *The Great Wall at Sea*. (Annapolis: MD Naval Institute Press, 2001), 2.

<sup>3</sup> Gang, Deng. *Chinese Maritime Activities and Socioeconomic Development, c.2100BC-1900AD*. (Westport, Connecticut: Greenwood Press, 1997), 41.

over different theories of the commercial and technology benefits of foreign trade against the benefits of isolationism.<sup>4</sup> Subsequently, China ended its sea trade and relegated its navy to a brown water defense force by shifting its national economic strategy towards isolationism. This decision eroded China's sea power and nautical advantages over its Western rivals. China's security strategy shifted almost entirely onto the shoulders of its army and this has remained the primary branch of service in China ever since.

The Chinese made several attempts during the Qing dynasty (1644-1912) to restore its navy. These efforts to modernize its navy were provoked by challenges from the Western great powers in the late 19<sup>th</sup> century, following years of political infighting among Confucian traditionalists and pro-modernization reformers. The Chinese deployed a modern navy led by Li Hongzhang, in 1884.<sup>5</sup> However, Li was unable to build the navy into an effective fighting force. The Chinese were defeated in a series of naval engagements with the French and Japanese. Following the collapse of the Qing dynasty, Republican China (1912-1949) did not make any significant attempts to rebuild the Chinese navy. The navy fell once again into disarray and became an insignificant and obsolete service.

## **B. PLAN 1949-78**

The People's Liberation Army (PLA) was founded in 1927 and evolved from the Chinese Communist Party's (CCP) strong

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<sup>4</sup> Diamond, Jared. *Guns, Germs and Steel: The Fates of Human Societies*. (New York: W.W. Norton and Company, 1997), 412.

<sup>5</sup> Cole, 1-3.

arm to a national force. Its original purpose was to seize power, stabilize order, and maintain the party line. When the communists seized power in 1949, the role of the PLA shifted to homeland defense. The PLA split into three service branches, PLA, PLAAF (Air Force), and PLAN. The PLAN was established on 23 April 1949, originally consisting of less than a hundred obsolete ships and a few thousand seamen. They consisted mainly of defecting Kuomintang sailors, PLA guerrillas, and fisherman.<sup>6</sup> The need for a stronger navy was predicated on several maritime threats. The Nationalists occupied Taiwan and many offshore islands, and they controlled the mainland sea-lanes from Shanghai on southward. The U.S. Navy, together with other Asian neighbors, had the potential to mount an amphibious counterattack against the mainland.<sup>7</sup> The PLAN remained relegated to the role of a coastal defense force for the next three decades until Mao Zedong's death in 1976.

At the conclusion of the Korean War (1950-53), Chairman Mao outlined his three major assignments for the PLAN: "wipe out the Nationalists in the coastal areas; assist the army in taking over Taiwan; and resist an imperialist invasion from the sea."<sup>8</sup> Mao was a staunch continentalist, and he saw the navy as an expendable, but useful, force. This was a role the navy performed with moderate success in the mid 1950s following China's assault on the Nationalist-controlled offshore islands. This forced

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<sup>6</sup> Cole, 4-5.

<sup>7</sup> Swanson, Bruce. *Eighth Voyage of the Dragon: A History of China's Quest for Seapower*. (Annapolis: MD Naval Institute Press, 1982), 184-185.

<sup>8</sup> Kondapalli, Srikanth. "China's Naval Strategy," *Foreign Affairs*, (March 3, 2000): 2. Available online <<http://www.freerepublic.com/forum/a3945d5de7976.html>>

the withdrawal of the Nationalist troops from the Tachen Islands and the seizure of the island of Ichiang. "The navy reflected a willingness to adopt Western-style tactics and employ proven assault techniques and equipment."<sup>9</sup> The training and resources that enabled the PLAN's success originated from the Soviet Union.

### **1. Soviet Assistance**

The coastal defense of the mainland formed the strategic guidance for PLAN operations and development in what came to be known as the "Great Wall at sea."<sup>10</sup> During the 1950s the Soviets began transferring extensive amounts of arms to China in support of the Korean War.<sup>11</sup> This was followed by an increasing flow of technology, material, and training to help build China's defense industrial base and increase its military effectiveness. With the aid of the Soviets, the Chinese began to increase their naval inventory with many Soviet designed naval platforms, such as the *Gordy*-class destroyer, *Kronstadt*-class submarine chaser, torpedo boats, T 43 minesweeper, and the *W*-class submarine.<sup>12</sup>

Soviet support spearheaded the PLAN's establishment of its Academy of Military Sciences and many other PRC naval schools fashioned along Soviet lines. Soviet naval regulations, tactics, and training procedures were adopted into the PRC's infant naval program. Bruce Swanson writes

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<sup>9</sup> Swanson, 191.

<sup>10</sup> Cole, 10-15.

<sup>11</sup> You, Ji. *The Armed Forces of China*. (New York: I.B. Tauris Publishers, 1999), 77.

<sup>12</sup> Swanson, 196.

in *Eighth Voyage of the Dragon: A History of China's Quest for Sea power* that "by 1956 PRC naval schools had expanded... training was becoming much more professional...students were reading translated versions of Mahan's *The Influence of Sea Power Upon History*.<sup>13</sup> The PLAN was rapidly developing, but this new development was not without its antagonists within the CCP. China's traditionalists continued to be at odds with the PLAN's efforts to become a modern and professional navy, sparking many ideological versus technological debates over the adoption of foreign and modern military technologies, strategy, and weapons systems. The traditionalists never saw the importance of naval sea power. In 1960, the Soviets cut off its military assistance to China, and without the continued support of PRC leadership, effective PLAN modernization ceased.<sup>14</sup> China's naval doctrine and modernization became pragmatic and directed by the constant pressures of the international environment.

## **2. People's War**

China's overall military combat effectiveness and ability to conduct modern warfare diminished partially because of its reliance on Soviet assistance, but mostly due to the lasting effects of Mao Zedong's "people's war" doctrine and strategy. The PRC military prepared itself by figuring out ways to win a war with inferior equipment against a military with superior equipment.<sup>15</sup> The "people's

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<sup>13</sup> Ibid., 199.

<sup>14</sup> Ibid., 215.

<sup>15</sup> Liqun, Deng. *The Chinese People's Liberation Army, Vol. I.* (Beijing: Contemporary China Publishing House, 1994), 582-583.

war" focused on countering a Soviet invasion using an attrition strategy using the mainland as the operating theater. The Cultural Revolution (1966-76) continued to increase the gap between PRC and Western military capabilities. During Mao's Cultural Revolution, the military became little more than a political tool of the party. The PRC's defense industry suffered extensively during this period and was not considered to be modern by Western standards. China's post-Sino-Soviet split navy declined into an ill-equipped, poorly trained, and under-funded coastal defense force. The PLAN, as was the case with the other service branches, was forced to defend China's borders with circa 1950 Soviet equipment and technology against superior Western armaments. Several attempts by the PLAN to compensate for its lack of modernization by incorporating modern operational concepts and training, met with fierce resistance by PRC politicians.<sup>16</sup>

### **C. PLAN 1978-PRESENT**

In 1978, two years after the death of Mao, Deng Xiaoping ascended to power. Deng immediately criticized China's ability to fight a modern war. The PLA forces had relatively minimal access to modern military technology. Deng addressed his vision of a modern China at the 9<sup>th</sup> National Congress of Chinese Trade Unions in his "four modernizations" speech that called for, among other things,

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<sup>16</sup> Godwin, Paul H.B. *PLA Faces the Twenty-First Century*. (American Enterprise Institute, 1999), 40-42.



a modern national defense.<sup>17</sup> Shortly thereafter, the PLAN embarked on the first of its modernization efforts to improve technology, doctrine, operations, and training. Deng's ambitions for a modernized China set the wheels in motion for an evolution in PRC military doctrine and strategy. By 1985 Deng's military reforms manifested an actual change in doctrine from the late 1970s concept of "people's war under modern conditions" to "limited war."<sup>18</sup> The new doctrine focused on local and limited wars of short duration, with special importance placed upon contested border territories, territorial seas and islands, limited attacks upon Chinese territory, and Chinese counterattacks.<sup>19</sup> A national defense strategy followed, setting new contingencies for PRC defense from a continental to peripheral defense strategy that would place China's maritime territories under a protective umbrella. This prescribed new roles and missions on PLAN, PLANAF, and PLAFAF branches that were either insignificant to, or were focused entirely on, the previous continental strategy. The PLAN regained its relative importance to national security, and the replacement and acquisition of new platforms, weaponry, and systems were imperative for the PLAN to take on its expanding roles.

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<sup>17</sup> Xiaoping, Deng. *Speech at the 9<sup>TH</sup> National Congress of Chinese Trade Unions*. (October 11, 1978). Available online <<http://english.peopledaily.com.cn/dengxp/vol2/text/b1250.html>>

<sup>18</sup> Godwin, Paul H.B. "From Continent to Periphery: PLA Doctrine, Strategy, and Capabilities Towards 2000." *China Quarterly* 146 (June 1996): 466-68

<sup>19</sup> *Ibid.*, 467.

## **1. PLAN Mission**

Admiral Liu Huaqing is credited with having the single greatest impact upon current PLAN modernization. As PLAN commander from 1982 to 1988, Liu laid out the navy's mission and future objectives. The PLAN's missions were "designated as safeguarding China's territorial integrity; being prepared for a potential requirement to blockade Taiwan; preventing a sea-based invasion of China; and over the long term, building a survivable sea-based nuclear retaliatory force."<sup>20</sup> The navy also changed its strategy from coastal defense to offshore defense and future blue-water power projection.<sup>21</sup> The offshore defense strategy called for development in three phases: 1) By 2000, the PLAN will "train and enhance existing formations, renovation, and improvement of the conventional naval vessels; 2) from 2001 to 2020, it will "concentrate on the construction of several light carriers...purchase warships to supplement the carrier task force...and bolster offshore combat capability"; 3) and from 2021 to 2040, it will transform the PLAN into a major blue-water navy.<sup>22</sup>

## **2. Re-Equipping the Navy**

In the 1990s China returned to the Russians for military arms and technology. In 1989 Sino-Soviet relations were normalized, and the PLA began to procure weapons and equipment that began to improve its overall military

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<sup>20</sup> Ibid., 469.

<sup>21</sup> Kondapalli, 3.

<sup>22</sup> Dowling, John. "China's Evolving Maritime Strategy: Part I: Restructuring Begins." *Jane's Intelligence Review* v.8, 3 (1996): 129-133.

effectiveness. The arms acquisitions began at a critical time, following a Western embargo on arms and technology to China in response of the Tiananmen incident. Later, in 1991, the fall of the Soviet Union had a dramatic affect on the PRC's threat perception, once again shifting from the Soviet threat to the United States and Taiwan.<sup>23</sup> The successful United States participation in the Gulf War against Iraq significantly affected China's security context. These events re-affirmed PLAN modernization in support of its peripheral defense strategy and heightened PRC anticipation of a future conflict along its southeastern flank, namely the South China Sea.

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<sup>23</sup> Kondapalli, 7-8.

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### III. PRC'S SOUTH CHINA SEA INTERESTS

#### A. POLITICAL INTERESTS

##### 1. Regional Security

The South China Sea remains an area of extreme importance for China's regional security.<sup>24</sup> The Chinese lay claim to practically the entire South China Sea. China's maritime claims in the South China Sea are a source of dissension among China's neighbors who have competing claims against the PRC's.<sup>25</sup> The PRC has displayed its resolve to use military force in the past in support of its territorial claims and issues of sovereignty in the South China Sea. China's navy in the past and foreseeable future will remain Beijing's call to action force in the South China Sea. China's present naval modernization implies that the PRC is anticipating future military actions over issues regarding the South China Sea.

In the reaction to China's naval modernization, there is a growing feeling among countries residing in South-east Asia that in the long term the United States cannot be relied upon as a guarantor of regional stability and that without its presence, states will be less restrained in asserting themselves and enforcing their territorial and maritime claims.<sup>26</sup> The South China Sea is the area in the Asia-Pacific that poses the greatest concern because of the PRC's growing navy, competing maritime claims, territorial

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<sup>24</sup> See Appendix A.

<sup>25</sup> Valencia, M.J., Van Dyke, J.M., Ludwig, N.A. *Sharing the Resources of the South China Sea*. (Honolulu: University of Hawaii Press, 1999), 5-8.

<sup>26</sup> Valencia, Mark J. *China and the South China Sea Disputes*. (Great Britain: Halston and Co. Ltd., 1995), 3.

disputes, and location in proximity to China's borders. The PRC continues to remain opaque concerning its future intentions in the South China Sea. "Actions by the PRC to defend offshore claims in the South China Sea have been held up as a test case of the PRC's readiness to be a responsible member of the international community."<sup>27</sup>

## **2. Territoriality**

The PRC is not the only country proclaiming that national interests are at stake in the South China Sea. There is growing competition among rival claimants for territory and resources in the South China Sea.<sup>28</sup> Consequently, the PRC is involved in territorial disputes with Malaysia, the Philippines, Taiwan, Vietnam, Brunei, and Indonesia over the scattered islands and reefs located within the South China Sea.<sup>29</sup> To an outside observer, these disputes may appear petty on the surface. Many of the disputed territories are nothing more than exposed reefs and tiny islands of seemingly little use to a country's national interests. For most claimants in the dispute, and the PRC in particular, the area above the water is of less value than the potential resources under the water. The PRC's interests lay in exploiting the South China Sea seabed's large reserves of natural gas and oil deposits.<sup>30</sup>

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<sup>27</sup> Snyder, Scott. "The South China Sea Dispute: Prospects for Preventive Diplomacy." *Special Report of the United States Institute for Peace* (Washington, D.C., August, 1996), 7.

<sup>28</sup> See Appendix B.

<sup>29</sup> Ball, Desmond "Military Acquisitions in the Asia-Pacific Region." *International Security* 18, 3, Winter 1993-94, 88-89.

<sup>30</sup> Valencia, 111.

Among China's territorial disputes with Taiwan over the Paracel and Spratly Islands is the 53-year conflict regarding the sovereignty of Taiwan. These disputed territorial and sovereignty issues could potentially trigger a military conflict in the South China Sea. PLAN modernization would have a tremendous impact on China's ability to effectively project power in the South China Sea. Without the continued presence of the United States in the region, and the possible exception of Taiwan, no other claimant possesses a navy strong enough to effectively defend itself against a PLAN offensive in the Spratly or Paracel Islands.

### **3. Competing Claims**

China has a number of competing territorial claims in the South China Sea. The rationales for China's disputes vary from claims based on territorial jurisdiction, historical legacy, and geopolitics. In 1992, the PRC provided itself legal justification to support its actions to assert sovereignty over the Spratly Islands and other contiguous zones within the South China Sea by passing its Law on the Territorial Sea and Contiguous Zone. The law of the sea claims include: continental shelf claims, settlement disputes, exclusive economic zone (EEZ) claims, fishing zone claims, territorial sea, baseline, and historic waters claims. These laws give the PRC a greater basis for claiming control over the Spratlys as a contiguous zone for territory.<sup>31</sup> Control over the Spratly Islands are one of four areas in the South China Sea that

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<sup>31</sup> Austin, Greg *China's Ocean Frontier*. (Canberra: Allen and Unwin Australia Pty Ltd., 1998), 4, 42, 44, 48-52, 57-58.

China perceives as sensitive and are heavily disputed. The others are the northern Natuna Islands, Gulf of Tonkin, Taiwan, and the Paracel Islands. In 1996 China claimed these islands based on United Nations Convention on the Law of the Sea (UNCLOS). These islands lay within the UNCLOS definition of an EEZ and according to Beijing, are inherently China's.

The Gulf of Tonkin boundary with Vietnam is based on an 1887 Sino-French treaty, in which the PRC insists the boundary lines were determined by an imperialist colonial power and therefore should not be the basis of settlement. In 1974 the PRC used military force to take the Paracel Islands from the Republic of South Vietnam. The governments of Vietnam and Taiwan dispute the PRC's possession of the Paracels. Finally, the Spratly Islands are contested by six claimants which include the PRC, Philippines, Vietnam, Malaysia, Taiwan, and Brunei. What makes the Spratly dispute difficult is that the PRC, Taiwan, and Vietnam lay claim to the entire island chain, and the other claimants desire only sections of the archipelago that reside closest to their borders.

There have been several attempts to resolve these competing claims. Among the most recent was a quasi-diplomatic conference that occurred in 1994 at Bukittinggi, Indonesia. This was the fifth in a series designed to explore the sensitive issues of conflict in the South China Sea. In summary, the Bukittinggi talks ended with Taiwan and China blocking an agreement on non-military expansion in the South China Sea. With the exception of the Philippines, the claimants unanimously rejected halting



further military expansion. "Despite all hope of improvement, the most likely scenario for the future of the South China Sea disputes is the status quo."<sup>32</sup>

#### 4. Spratly Islands

The threat of a burgeoning great power seeking to acquire increasing amounts of territory is alarming and unfathomable in any other region besides the Asia-Pacific. For China's neighbors in the South China Sea, the threat is real and appears to be growing everyday. Many Asia-Pacific analysts have expressed apprehension about China's assertiveness in the South China Sea. Mr. G. O'Leary, an expert in Asia-Pacific regional politics writes in *The Shaping of Chinese Foreign Policy*, that the Spratlys are considered to be "highly vulnerable in the wake of Chinese military power and considers this area to be "the most dangerous in the South China Sea."<sup>33</sup> The Spratlys have become increasingly militarized over the past decade.<sup>34</sup> The majority of the claimants have garrisoned troops, aircraft runways, and helicopter pads over the years to conduct military activities.<sup>35</sup>

Justifications for these complex and competing claims are not absent of violent military action. For example, a confrontation occurred in 1988, over the occupation of Fiery Cross Reef between Vietnamese and Chinese troops that

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<sup>32</sup> Valencia, 50-57.

<sup>33</sup> O'Leary, G. *The Shaping of Chinese Foreign Policy*. (Canberra: Australia National University Press, 1980), 7-9.

<sup>34</sup> See Appendix C.

<sup>35</sup> See Appendix C.

left seventy-four Vietnamese missing and seven killed.<sup>36</sup> The Chinese are continually improving their ability to back up their claims in the Spratly's. The discovery in 1995 on Mischief Reef of hardened concrete facilities directly contradicts Beijing's "soothing nostrums of cooperation and consultation."<sup>37</sup> China is enhancing its capability to project force in the region. As long as the PRC continues its expansive claims, threatens to use this force, and refuses multilateral initiatives, Washington should view Beijing's actions as a precursor to a scarcely hidden agenda of dominating the South China Sea.

## 5. Sovereignty

China's use of military force to resolve its issue of sovereignty with Taiwan would certainly prompt U.S. intervention, the United States formally recognizes Taiwan as a province of the PRC and accepts the mainland's "two-systems, one China" policy.<sup>38</sup> The U.S. desires a peaceful resolution to the unification issue, U.S.-Taiwan Security Relations Act of 1979 does not formally commit U.S. forces to Taiwan's defense, but the U.S. reserves the right to intervene.

In 1949 the CCP forced the retreat of nearly 2 million Chinese nationalists to the offshore island of Taiwan. The Republic of China (ROC) government was established on

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<sup>36</sup> Catley, Bob and Keliat, Makmur. *Spratly's: The Disputes in the South China Sea*. (Brookfield, Vermont: Ashgate Publishing Limited, 1999), 7-9.

<sup>37</sup> McDevitt, Michael. "China and the South China Sea—A Conference Summary Report." *PACNET Newsletter* #15, (April, 16, 1999): Available online <<http://www.csis.org/pacfor/pac1599.html>>

<sup>38</sup> Mastel, Greg. "China, Taiwan, and the World Trade Organization." *Washington Quarterly*, (Summer, 2001), 45.

Taiwan but continued to take China's 1947 constitution as extending to all of China, resulting in both governments claiming legitimacy as the rightful government of China. Since 1949 both the ROC and PRC governments have been uniformly hostile to each other. Each side has maintained no official direct dialogue with the other.<sup>39</sup> Throughout this period, Taiwan has democratized and developed into one of East Asia's economic powers. Even though Taiwan has acted autonomously from the communist mainland for the past fifty years, the PRC still desires to reunify Taiwan with the Mainland. The issue of unification is a sensitive topic for both sides. Taiwan remains leery of PRC intentions since "...China has historically employed naval force over issues of sovereignty - about national control of specific islands or provinces."<sup>40</sup> In the case of Taiwan, as recent as 1995-1996, China made an attempt to intimidate Taiwan by conducting a missile firing exercise in the Taiwan Straits. China's objective was to deter Taiwan from declaring its future independence and to encourage reunification by threatening the use of military force. This prompted the U.S. Seventh Fleet to intervene on behalf of Taiwan and deter potential PRC acts of aggression.<sup>41</sup>

The threat of a mainland China invasion upon Taiwan continues to be a sensitive topic for everyone concerned. However one looks at it, Chinese military intervention over the affair would be a no-win situation. A military solution would likely incur U.S. military intervention,

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<sup>39</sup> Mastel, 46.

<sup>40</sup> Cole, 28.

<sup>41</sup> Ruppe, David. "Tensions Across the Strait." *ABC News*, (March 16, 2000): Available online  
<<http://www.abcnews.go.com/sections/dailynews/chinataiwan000315.html>>

international backlash, and loss of its prosperous Taiwanese trade. So far, the PRC has only threatened the use of force. If Taiwan does formally declare independence, Beijing has repeatedly stated that it will have no alternative to using force.

## **B. ECONOMIC INTERESTS**

### **1. Growth**

The PRC has experienced tremendous growth in the past two decades. This economic growth has encouraged further interest in the South China Sea as a vital link to increased prosperity. In 1978, the PRC embarked upon a major program of economic reform. The Chinese government loosened restrictions on state control over some prices, "...encouraged the formation of rural enterprises and private businesses, liberalized foreign trade and investment, ...and invested in industrial production and the education of its workforce."<sup>42</sup> These reforms enabled China to channel a significant portion of its traditional agriculture labor force into rural-based manufacturing plants, resulting in increased national productivity, economic returns, and foreign investment.<sup>43</sup> In addition, China's economic liberalization has increased exports, and China leads the Asian region in terms of growth in merchandise imports and exports over the past decade.<sup>44</sup>

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<sup>42</sup> Hu, Zuli and Khan, Mohsin S. "Economic Issues: Why Is China Growing So Fast?" *IMF*, (11/4/2002): Available online <[http://web.nps.navy.mil/~relooney/IMF\\_7.htm](http://web.nps.navy.mil/~relooney/IMF_7.htm)>

<sup>43</sup> Hu, Zuli and Khan, Mohsin S, 1-3.

<sup>44</sup> See appendix D.

Although there are many people who believe China's growth is exaggerated, the PRC officially reports a GDP annual average of 9.4 percent between 1978 and 2001.<sup>45</sup> Judging from economic analyses of Asia's overall growth in the past decade, the entire Asia-Pacific will continue to grow and compete for the same markets and resources.<sup>46</sup> China's interest in the South China Sea will expand due to the PRC's desire to continue its overall growth. The uninterrupted flow of maritime trade and Middle Eastern oil through the South China Sea will be imperative to China's economic future.

## **2. Energy Demands**

As China's energy demands increase and China continues its transition from coal to cleaner burning oil, China's reliance upon Middle East oil and the search for alternative petroleum sources will increase. In 1993, China became a net oil importer for the first time in its history. In 1999, the PRC imported 40 million tons of oil and reached over 60 million tons in year 2000. China's demand for oil imports is expected to make-up 40 percent of the PRC total consumption by 2010.<sup>47</sup> By that time, China will most likely become the second largest oil consumer in the world, behind only the United States. The majority of

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<sup>45</sup> Wu, Kang. "China's GDP Numbers Don't Add Up." *The Washington Times*, (May 24, 2002): Available online <<http://www.washtimes.com/world/20020524-8757278.htm>>

<sup>46</sup> *U.S. Pacific Command Asia-Pacific Economic Update*, Spring 1994, 7.

<sup>47</sup> "China's Crude Oil Imports Exceed 60 Million Tons." *General Administration of Customs Report*, (December 22, 2000): Available online <[http://www.adsky.com/e\\_adsky/news/news78.html](http://www.adsky.com/e_adsky/news/news78.html)>

this increase will be consumed by its growing transportation sector.<sup>48</sup>

There is a growing belief among Asian states that the PRC believes the South China Sea may hold the key to many of its future energy needs. Surveys of the sea floor have revealed deposits of oil and natural gas off China's coast. The question is how much? China believes there are large deposits of oil and natural gas. Some believe this may be at the source of the PRC's many claims in the South China Sea.<sup>49</sup> These discoveries in the already disputed areas of the South China Sea have the potential to be extremely disruptive to regional security and prompt an arms race over the matter. In light of China's present naval modernization, the race may have already begun.

## **C. SECURITY INTERESTS**

### **1. Sea Lines of Communication**

The free flow of commercial shipping through the South China Sea is of vital importance to all in the East Asia region.<sup>50</sup> In addition to China, these countries rely upon the steady free flow of maritime transport through the South China Sea to support their populations. Open SLOCs are imperative to further global trade, and are vital to linking the economies of the world. For China, its increased maritime activity and growing energy requirements

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<sup>48</sup> "International Energy Outlook 2002." *Energy Information Administration*, (2002): Available online <<http://www.eia.doe.gov/oiaf/ieo/pdf/consumption.pdf>>

<sup>49</sup> Valencia, Van Dyke, and Ludwig, 9.

<sup>50</sup> Segal, G. and Yang, R.H. *Chinese Economic Reform; the Impact on Security*. (London: Routledge, 1996), 46.

has resulted in increased reliance on the SLOCs.<sup>51</sup> In the event the SLOCs are threatened, it is possible that China would intervene to defend what it perceives as a vital national interest.<sup>52</sup> In 1996, China threatened the SLOCs in the Strait's of Taiwan by conducting missile test firings. It was not the PRC's intention to close the Strait's to maritime shipping, but that is exactly what resulted. Merchant vessels were deterred from transiting the Strait's due to China's efforts to intimidate Taiwan over an issue of sovereignty.

## 2. Chokepoints

The SLOCs present a strategic element to PRC claims in the South China Sea. The PRC could use its navy potentially to obstruct the freedom of navigation in the sea. The threat of force by PLAN missiles, mines, and torpedoes would shut down SLOC traffic and disrupt international shipping through the South China Sea. The impeding of safe passage of the SLOCs or their closure would certainly affect regional economic interests. The implications of these actions would significantly affect shipping rates and therefore the costs of imports and exports. Such acts of provocation would most likely incite a military response from the United States.<sup>53</sup> As outlined in President Bush's most recent *National Security Strategy of the United States*

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<sup>51</sup> Sakhuja, Vijay. *Maritime Power of PRC: The Economic Dimension*, (February 16, 2002): Available online <<http://www.idsa-india.org/an-feb.5-01.html>>

<sup>52</sup> Nathan, A.J. and Ross, R.S. *The Great Wall and the Empty Fortress; China's Search for Security*. (New York: W.W. Norton, 1997), 42.

<sup>53</sup> Noer, John H. *Maritime Economic Interests and the Sea Lines of Communication Through the South China Sea*. (Alexandria, Virginia: Center for Naval Analyses, 1996), 4.

of America, released in September 2002, among U.S. goals for its international strategy is to "ignite a new era of global economic growth through free markets and free trade."<sup>54</sup> Washington is committed to defeating those threats to the peace and prosperity of our allies and friends.

### **3. Geo Strategic**

The South China Sea is an important piece in the geo political puzzle China presents. The SLOCs are increasingly important to the PRC as its international imports and exports increase. As well, the PRC has become more and more reliant on Middle Eastern oil exports. The PRC's garrisoning of troops on the Paracel and Spratly Islands, PLAN modernization, and past military aggressions indicate China's deep commitment to enforcing its territorial claims through the use of military force.<sup>55</sup> Since the defense of this entire body of water is beyond the PRC's current capabilities, a blue water capable navy would be required, at the very least, to protect all of China's perceived interests in the South China Sea.

Based upon the current and projected PLAN modernization efforts, a blue water navy is not foreseeable until at least 2020. Therefore the PRC would employ only its current PLAN inventory in the eventuality its maritime interests need protecting. The types of naval platforms that China maintains are capable of carrying-out a sea-denial strategy of defending SLOCs and chokepoints, but it is not a fleet on fleet engagement force. This strategy

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<sup>54</sup> Bush, George W. "The National Security Strategy of the United States of America." *The White House*. (September 2002), 1-2.

<sup>55</sup> See Appendix C.



appears to be consistent with the PRC's national maritime strategy of offshore defense. Many of China's foreign acquisitions are indicative of a naval modernization strategy intended to project power in these areas.

The PLAN's South Sea Fleet appears to be poised and configured to counter and deter potential threats to its interests in the South China Sea. The South Sea Fleet has within its inventory a marine infantry brigade and numerous weapons systems and platforms at its disposal capable of carrying-out a sea-denial strategy that would pose the greatest threat to U.S. interests in the South China Sea.<sup>56</sup> The South China Sea is significant to the PRC not only as a strategic security zone, but also as a region important to PRC maritime trade, sovereignty, and natural resources. Consequently, China is modernizing the South Sea Fleet to bolster its capacity to address its growing maritime interests within the South China Sea.

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<sup>56</sup> See Appendixes F-L.

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## IV. PLAN CAPABILITIES

### A. OFFSHORE ACTIVE DEFENSE

China's shift in maritime strategy from a coastal defense strategy to an offshore defense strategy, coined by PLAN Admiral Liu Huaqing as "offshore active defense," has a great potential impact on the South China Sea. The ultimate objective of Admiral Liu's strategy is to control the seas out to the first and second island chains. The islands running from the Kuril Islands north of Japan down through Indonesia, including the South China Sea, represent the first island chain. An open ocean blue water navy for China is represented in Liu's "...second island chain, delineated by a line from Japan through the Bonin Islands, the Mariana Islands, and the Caroline Islands."<sup>57</sup> PLAN modernization complements this new strategy by acquiring and building naval weapons systems and platforms designed to successfully conduct operations in these environments.

The feasibility of the PLAN capability to control the first island chain by 2020 is highly unlikely. China lacks the two most important elements to controlling these waterways -- aircraft carriers and the ability to conduct sustained battle group operations. China's investment in naval platforms capable of deploying mines, missiles, and torpedoes will eventually enhance its ability to conduct a sea-denial strategy in the South China Sea. As defined by Admiral Arthur T. Mahan, sea denial or destroying commerce provides a means for harrying and tiring an enemy. Although

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<sup>57</sup> Cole, 10.

sea denial is not a war-winning strategy, it may cause "great individual injury and discontent" for an enemy.<sup>58</sup>

Over the past two decades, a greater emphasis has been placed on PLAN modernization, resulting in the re-emergence of China as a regional maritime power. The PLAN has undertaken great measures to evolve from a quantitatively inferior navy to a qualitatively superior one. The PLAN embraces the concept of a hi-tech, mobile, and flexible fighting force and its naval inventory reflects this shift in mindset.

## **B. FOREIGN NAVAL ACQUISITIONS**

The PRC is using foreign naval acquisitions from Russia to close the gap with Western naval superiority. The Chinese are purchasing a wide array of affordable Russian-built naval arms. The PLAN has dramatically increased its maritime power by acquiring systems, many of which are of former Soviet design, specifically engineered to defeat and exploit U.S. naval platforms. Among these purchases are submarines, destroyers, missiles, and aircraft that significantly enhance China's ability to conduct a sea-denial strategy within the South China Sea. The PRC is acquiring weapons and technology directly aimed at deterring and defending against regional adversaries. These efforts are mostly focused on upgrading subsurface, surface, and air capabilities.

China lacks the ability to produce the necessary advanced equipment and weapons systems required to catch up

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<sup>58</sup> "The Network and Doctrine." *Buddenberg*, (September 1997): Available online  
<<http://hopper.nps.navy.mil/~budden/lecture.notes/mahan.html>>

with the United States, so it relies on foreign arms acquisition to close the technology gap. The majority of these acquisitions come from Russia, but purchases and potential providers are Great Britain, France, and Israel.<sup>59</sup>

### 1. *KILO*-Class Submarine

The PLAN is using Russian-built and designed submarines to modernize its sub-surface capabilities. China received the last of four *Kilo*-class diesel attack boats from Russia in 1998. The first two *Kilo*'s acquired are Type 877EKM's. These are complemented with a MGK-400 Shark Gill Low Frequency active/passive sonar suite, MG-519 Mouse Roar active mine avoidance system, a *Strela* Surface-to-Air Missile (SAMs) position, and up to eighteen torpedoes or sea mines. The third and fourth *Kilos* purchased, are of the Type 636 variety. The Type 636 improvements include a larger weapons payload of four SAMs, and the option of carrying eighteen torpedoes, surface-to-surface missiles (SSMs) or 24 sea mines.<sup>60</sup> Russian sources report that China intends to purchase eight additional Type 636 submarines in the future.<sup>61</sup> The additions of the four *Kilo*-class submarines from Russia enhance China's ability to control SLOC's, strategic chokepoints, and serve as a coercive influence in the South China Sea.

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<sup>59</sup> Fisher Jr., Richard "Foreign Arms Acquisition and PLA Modernization." *American Enterprise Institute* 1999, 85-90.

<sup>60</sup> "The Military Balance 1999-2000." *International Institute for Strategic Studies* (Oxford University Press 2001), 187-188.

<sup>61</sup>*Jane's Defense Weekly*. (June 13, 2002): Available online <[http://www.janes.com/regional\\_news/europe/newsbriefs/jdw020613\\_36.shtml](http://www.janes.com/regional_news/europe/newsbriefs/jdw020613_36.shtml)>

## 2. **SOVREMENNY-Class Destroyer**

Under a 1996 agreement, the PRC purchased two *Sovremenny*-class destroyers from Russia. The *Sovremennys* are equipped with eight supersonic *Moskit* SS-N-22 Sunburn missiles, one of the most advanced SSMs on the planet. The *Moskit* has a maximum speed of Mach 2.1 and a range of sixty-five nautical miles.<sup>62</sup> The Sunburn missiles characteristics "have been optimized for the specific purpose of overcoming the defense barrier of the US Navy's Aegis system."<sup>63</sup> The destroyers are propelled by steam turbines and can reach a speed of 32 knots. The greatest impact the *Sovremennys* have on PLAN performance are their abilities as air defense platforms. They are equipped with 48 SA-N-7 Gadfly or SA-N-17 Grizzly semi-active radar-guidance air defense missiles, with a firing range of 25 kilometers.<sup>64</sup> These ships improve the PLAN's ability to provide air cover for ground forces and defend against air attacks.

## 3. **SUKHOI SU-27 Flanker Fighter Aircraft**

Although in service in China's Air Force (PLAAF), the PRC purchased 50 Sukhoi SU-27 Flanker fighter aircraft from Russia. The Sukhoi's are a fourth generation aircraft, capable of speeds up to Mach 2.3. What makes the SU-27's presence significant in the South China Sea is its extended

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<sup>62</sup> "Russian anti-ship missile developments," *Jane's Defense Weekly* August 30, 2000, p. 26.

<sup>63</sup> Bonsignore, Ezio. "New Data on Russian Anti-Ship Missiles." *Military Technology* #4, 1993, 66.

<sup>64</sup> Sharpe, 115.

range and firepower. The SU-27 has a range of 4000 km, which is nearly twice the range of the indigenously developed Nanchang Q-5 and Chengdu/Guizhou J-7 attack fighter aircraft in the PLANAF inventory.<sup>65</sup> It is outfitted with a 30 mm gun and up to ten externally mounted rockets, air-to-surface missiles, and bombs. The PLAN's use of the Sukhoi's increases its air combat, air defense, and strike capability in the South China Sea.<sup>66</sup>

### **C. PLAN INVENTORY**

#### **1. Submarine Forces**

The Chinese place great importance on their sub-surface warfare programs, with five currently in existence.<sup>67</sup> The submarine is the most lethal and coercive sea-going element to a surface combatant. There is little defense against a wake-homing torpedo launched by an undetected submarine. As stated in CRS Report RL 30700: An attack by a wake-homing torpedo would pose a particular threat to a U.S. Navy ship for two reasons. First, torpedoes are difficult to detect because they approach the ship from the rear, where their sound is masked by the noise of the ship's propellers. Second, a wake-homing torpedo would not be fooled by an acoustic decoy, and the ship may find it difficult to maneuver quickly enough to reduce or eliminate its wake.<sup>68</sup>

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<sup>65</sup> See Appendix H.

<sup>66</sup> "Fighters Ground Attack." *Air Force Technology* (2002): Available online <<http://www.airforce-technology.com/projects/su27/>>

<sup>67</sup> See Appendix G.

<sup>68</sup> "China's Foreign Conventional Arms Acquisitions: Background and Analysis." *CRS Report RL 30700*, October 10, 2000, 9.

China's submarine arsenal consists of indigenous and Russian made boats. Five nuclear powered attack submarines head up a force of primarily diesel-powered boats, which include the modern Russian *Kilo* and older *Romeo* classes and the indigenously built *Ming* and *Song* classes. The PRC possesses 65 submarines in all, including a *Xia*-class fleet ballistic missile submarine (SSBN) that conducted a successful missile firing exercise in 1988.<sup>69</sup> The SSBN increases the credibility of China's nuclear deterrent. According to Jane's "the underwater environment is a great leveler when it comes to military sophistication and the presence of any submarine, however elderly, hugely complicates the life of a naval commander."<sup>70</sup> The Chinese have also invested in a number of accessories to help improve the performance of their submarines. These upgrades include side-scan sonar, deep-sea cameras, and special diving lights to increase the operational depth of their submarines.<sup>71</sup>

## **2. Surface Forces**

China's surface force has increased in size and effectiveness over the past two decades. The PLAN has more than doubled its number of support ships, increased its inventory with destroyers and frigates that possess greater firepower, range, and speed.<sup>72</sup> The PRC also embarked on a

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<sup>69</sup> The Military Balance 1999-2000, The SSBN is believed to be only partially mission-capable and rarely leaves port.

<sup>70</sup> "Jane's Fighting Ships 2001-2002 Foreword." (November 11, 2002): available online <<http://www.janes.com/press/pc010430.shtml>>

<sup>71</sup> Timmerman, Kenneth R. "The Peking Pentagon." *The American Spectator* (April 1996): Available online <<http://www.security-policy.org/papers/96-D29at.html>>

<sup>72</sup> See Appendix F.



naval shipbuilding program, focusing on developing destroyers, frigates, coastal patrol craft, and light amphibious assault ships.<sup>73</sup> Among the surface combatants are two very important additions; the Luhu-class destroyer and Jiangwei-class frigate, these two projects represent a significant improvement to the PLAN's surface inventory. The larger Luhu-class destroyer surpasses the aging Luda-class destroyer. The Luhu improves China's ability to conduct anti-air and submarine warfare. They are outfitted with improved sonar suites, Crotale missiles, a helicopter operations capacity, and eight C-802 surface-to-surface missiles.<sup>74</sup> The Jiangwei-class frigate is the heir apparent to the older Jianghu-class; Jiangwei's carry CY-1 torpedoes, C-801 surface-to-surface missiles, HQ-61 SAM's, and helicopters.<sup>75</sup>

China is neither building nor purchasing the vessels necessary that indicate near-term plans for a large amphibious landing or the complete control of the South China Sea. To achieve these objectives, the PLAN, at the very least, would need to invest in heavy amphibious assault ships required to debark a large number of ground troops and aircraft carriers to maintain blue water supremacy. The PLAN's ambition to invest in these particular platforms potentially reflects the PRC's intentions of controlling areas of vital interest rather than the entire South China Sea.

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<sup>73</sup> Yung, Christopher D. "People's War at Sea: Chinese Naval Power in the Twenty-First Century." *Center for Naval Analyses* (Alexandria, Virginia: CRM 95-214, March 1996), 12-13.

<sup>74</sup> You, 188.

<sup>75</sup> Sharpe, 126-127.

### 3. Air Forces

China possesses a large naval air force. Although sizable, many of the airframes in the PLANAF inventories are outdated or non-combat capable.<sup>76</sup> The Chinese concluded from the Gulf War that air superiority was crucial to the U.S. success. Taking a page out of the U.S. playbook, the Chinese are now emphasizing the importance of strike, stealth, night vision, long range attacks, intelligence, and electronic warfare.<sup>77</sup> Known and projected foreign weapons acquisitions are the Integrated Air Defense System (IADS) known as *Phalcon*, Airborne Warning and Control System (AWACS) the *Searchwater*, SU-27SK Flankers and F-8 interceptor fighters, command and control systems, precision guided missiles (PGM), and anti-air missiles (AAM). These are just a few of China's efforts to build an air component that would be able to counter the Western forces.<sup>78</sup>

### 4. Mine Forces

The lethality and effectiveness of sea mining is often overshadowed by the threats of torpedoes and anti-ship cruise missiles. The placement of sea mines can be an inexpensive way of controlling strategic points of access. The mining, or suspected mining, of waters is an effective form of sea-denial and may potentially disrupt an opposing navy's ability to operate in a particular area. Iraq's use

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<sup>76</sup> See Appendixes H-I.

<sup>77</sup> Pillsbury, Michael. "Chinese Views of Future Warfare." *American Enterprise Institute* 1999, 71.

<sup>78</sup> Godwin, 464-487.

of sea mines during Operations Desert Storm and Desert Shield is a successful example of their denial capability. General Schwarzkopf recalled:

I'd canceled the Navy's amphibious assault on Faylakah Island. Plans called for it to precede the ground war by two days, but the helicopter carrier U.S.S. Tripoli and the Aegis guided missile cruiser U.S.S. Princeton had struck mines, U.S. and British minesweepers had been unable to clear the area, and as a result the Navy hadn't made it into position to launch the attack in time.<sup>79</sup>

The PLAN is believed to maintain a large inventory of sea-mines, mostly consisting of former Soviet-designed naval mines of various types.<sup>80</sup> Sea mines can be moored at various depths, set adrift, buried on the sea floor, and are often difficult to detect. The added convenience of mining is that every vessel and aircraft in its naval inventory is potentially a minelayer.<sup>81</sup> Clearing them is dangerous, time consuming, and never sure.

#### **D. TRANSFORMATION**

##### **1. Revolution in Military Affairs**

Some Chinese scholars refer to the information era, as the third military revolution, which was preceded by the 1960s development of nuclear and guided missile technology and before this the 1930s use of airplanes, tanks, and

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<sup>79</sup> Petre, Peter. *Schwarzkopf - It Doesn't Take a Hero - The Autobiography*. (Annapolis: Naval Institute Press, 1992), 446.

<sup>80</sup> *The Military Balance 1999-2000*, 187.

<sup>81</sup> See Appendixes F-I.

radios on the battlefield.<sup>82</sup> PRC writings indicate that the U.S. is the model for military success. China's observation of the U.S. ability to exploit information warfare in the past two decades has fueled China's interest in a revolution in military affairs (RMA). U.S. efforts have shed light on how far behind, and in what direction, China's future modernization efforts need to advance. The PRC began expediting its modernization process by procuring weapons to counter Western technology. The Chinese have identified and evaluated our strengths and weaknesses. Their writings stress arms procurements, new tactics, reorganization, and development of innovations and technologies to counter US military superiority. Further proof lies in their acquisitions of advanced air and naval systems.<sup>83</sup>

Although the PLAN is relatively large in its size, compared to the operational potency of other navies within the region, it lags behind. At this stage of Chinese naval development, it is safe to assume that it is not prepared to fight a fleet-on-fleet engagement against advanced Western weaponry. The Japanese Maritime Self Defense Force (JMSDF), and the Republic of Korea (ROK), Taiwanese and U.S. navies are powerful enough to successfully thwart a PRC naval engagement. The PLAN is trying to overcome potential adversaries strengths by incorporating emerging doctrine with indigenous research and development, and foreign acquisitions. The PRC is evaluating U.S. military

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<sup>82</sup> Shambaugh, D. and Yang, R. *The PLA's Evolving Warfighting Doctrine, Strategy, and Tactics, 1985-1995: A Chinese Perspective*. (American Enterprise Institute, 1999), 44.

<sup>83</sup> Blasko, D.J. "Evaluating Chinese Military Procurement from Russia." *Joint Forces Quarterly* (Autumn-Winter 1997-98): Available online <[http://www.dtic.mil/doctrine/jel/jfq\\_pubs/1917pgs.pdf](http://www.dtic.mil/doctrine/jel/jfq_pubs/1917pgs.pdf)>

capabilities and its performance during U.S. involvement in Iraq and Kosovo. From these observations, the Chinese use U.S. weaponry and its technological superiority as a benchmark for furthering China's potential towards its RMA.<sup>84</sup> The U.S. experience demonstrates the importance of grasping and incorporating long-range strike, information, and stealth technologies into future Chinese war fighting doctrine.<sup>85</sup>

## **2. PLAN Professionalism**

Similar to the U.S. downsizing efforts beginning in the late 1980's, the Chinese have realized how costly it is to pay for salaries, training, facilities, and maintenance of men and material that are either underutilized or unnecessary. The PLAN has undertaken efforts to reduce the size of its manpower, to decommission older ships, and to purge technologically obsolete equipment from its inventory. The lesson that China appears to have learned from the U.S. Navy is that quantity does not necessarily equate to quality.

PLAN growth over the past decade has been modest, adding an average of five naval vessels per year to their inventory.<sup>86</sup> The new vessels are a mixture of indigenously produced and Russian designed vessels. China's acquisition of these technologies remains a surmounting obstacle for

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<sup>84</sup> Stokes, Mark. *China's Strategic Modernization: Implications for the United States*. (Army War College Strategic Studies Institute, September 1999), 12.

<sup>85</sup> Chen, Huan. "The Third Military Revolution." *Contemporary Military Affairs* March 1996, 389.

<sup>86</sup> Shambaugh, D. and Yang, R. *China's Military In Transition* (American Enterprise Institute, 1999), 74.

the PLAN. The problem with acquiring foreign technologies is integrating them with indigenous systems, maintenance and parts replacement, and of course, training personnel to operate the systems. As long as the PRC continues to invest in foreign technologies, the PLAN will struggle with interoperability issues among its forces and platforms.

China has placed a greater emphasis upon the professional development of its naval officers and enlisted to help solve this problem. Military schools and academies are being created and assuming a greater responsibility for ensuring that personnel are properly trained to tactically operate their equipment. The training and education of naval personnel is imperative to maintaining high standards of readiness. As the PLAN continues to modernize, it is assumed that its tactics will constantly change as new equipment is introduced. Presently, only about 30 percent of PLAN officers are college graduates. These numbers are expected to increase by about one percent per year as partnerships with civilian universities begin producing naval officers.<sup>87</sup> The Chinese have also reduced their military regions from eleven to seven, restored the military rank system, and introduced new uniforms. These are just a few of the attempts by the PRC to professionalize and restructure its forces based on the Western military model.

### **3. PLAN Budget**

The PLAN is a brown water navy, primarily operating in the littoral areas to 100 nautical miles offshore. This is

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<sup>87</sup> Allen, Ken. "Lecture at the Naval Postgraduate School: PLA." (Center for Naval Analysis, 12/7/01).

partly due to China's traditional focus on the continental rather than the maritime arena. "Navies were built and employed almost entirely for defensive purposes."<sup>88</sup> Consequently, the PLAN had not received the funding nor had the expertise to build vessels and supporting units in the past to operate in a green or blue water environment. Recently, PRC national security policymakers have realized the importance of having a stronger and more modernized PLAN in order to bolster national defense and support its maritime interests. This is evidenced by the fact that the PLAN receives as much as one-third of the PLA budget, although it comprises no more than about 13 percent of the two million PLA personnel.<sup>89</sup> Interpreting China's actual defense spending from its official spending is a difficult task. Many Chinese budget analysts agree that PRC defense expenditures are greater than officially published figures.

#### **4. Defense Industry**

China's naval modernization efforts are branching out in many directions. China is restructuring its defense industries and removing the PLA from commercial business practices. State-owned enterprises (SOE) are being privatized to improve quality, increase profits, and save government dollars. The PRC is counting on these changes to enhance the invention and manufacturing of advanced indigenous technologies. All of these advancements, as well as information warfare (IW), space, and nuclear

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<sup>88</sup> Cole, 7.

<sup>89</sup> "The Chinese Navy's Offshore Active Defense Strategy." *Naval War College Review* vol 47, 3, Summer 1994, 7-32.

developments will propel Chinese naval modernization and its goal of becoming a maritime power.



## V. CONCLUSION

This thesis presents a comprehensive analysis of China's naval modernization. The present direction and scale of PLAN modernization is in part a reflection of its perceived ambitions in the South China Sea. The PRC is modernizing and expanding the PLAN for the stated purpose of protecting China's security, territorial integrity, and economic interests around the world. Beijing's concern about China's dependence on oil and natural gas from the Middle East, actual and projected growth in the PRC's economy, and the potential oil and gas reserves in the South China Sea are critical factors driving PLAN expansion. Competing territorial claims for island groups and potential oil, gas, and mineral rights further motivate the PRC's assertion that the South China Sea inherently belongs to China.

China's naval capabilities are improving and will continue to extend further into its offshore perimeter as the PLAN continues to modernize. But, China will not have a blue water fleet by 2020. PLAN shipbuilding and foreign acquisitions suggest that China is investing in platforms that increase its ability to protect its interests in the South China Sea, focusing on platforms capable of denying access, controlling sea-lanes and chokepoints. China's increasing naval power has the potential of upsetting the military balance of power in the Asia-Pacific and poses a significant threat to U.S. presence as well as those countries bordering China and the South China Sea. The PRC has placed a great deal of emphasis on modernizing the PLAN

since the early 1990's. Specifically, purchasing Russian conventional naval arms designed to defeat and counter U.S. naval platforms. China's motivation to purchase these platforms supports its desire to protect and maintain its maritime interests.

A future PLAN capable of successfully carrying out a sea-denial strategy would enable China to maintain a formidable presence in the South China Sea. As PLAN capabilities increase, its enhanced strength will directly affect China's ability to enforce its interests and eventually alter the balance of power in the region. The United States needs to continue with diplomatic approaches to China on issues of territoriality, sovereignty, and trade in the South China Sea. Meanwhile it should support cooperative ventures between the American and Chinese navies, while continuing to maintain a viable naval presence in the Asia-Pacific to counter China's naval expansion.

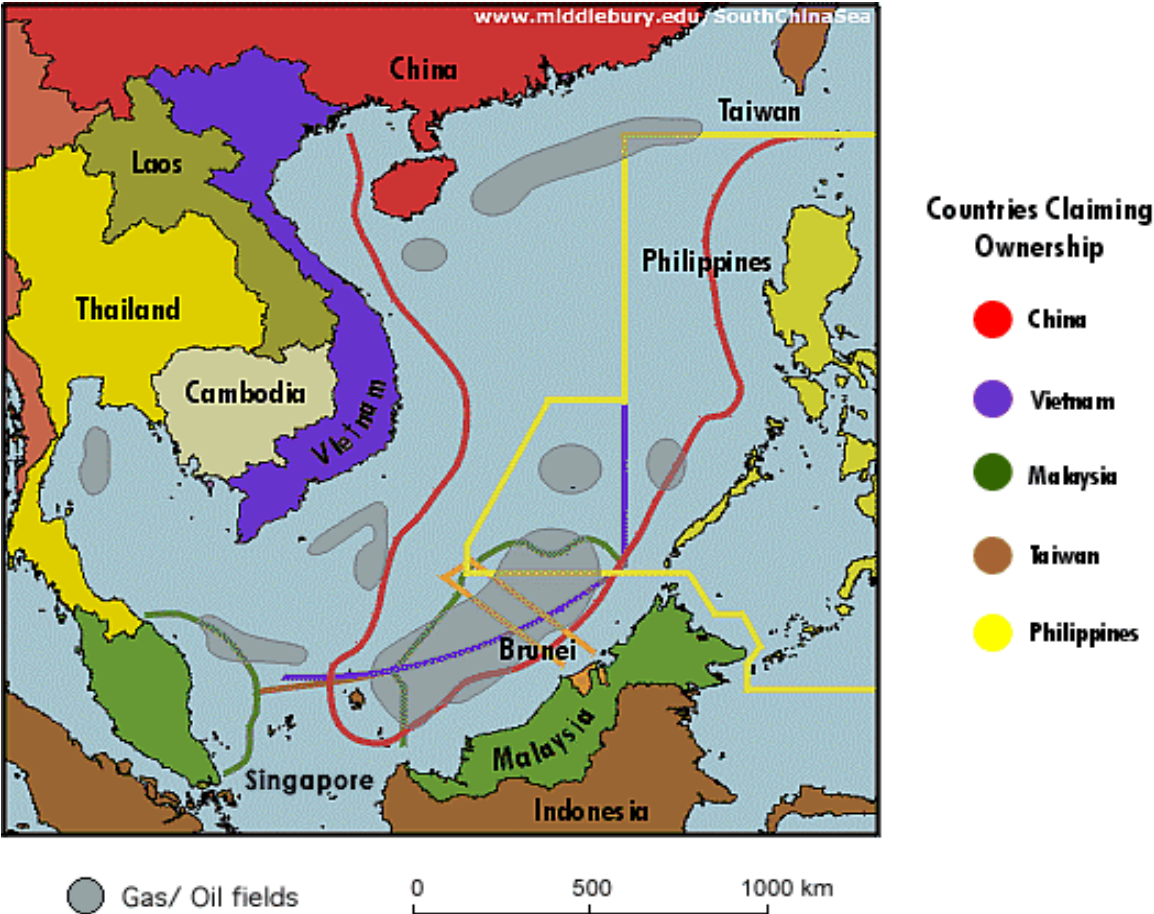
APPENDIX A. MAP OF THE SOUTH CHINA SEA



Source: CIA World Fact book  
<<http://www.odci.gov/cia/publications/factbook>>

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APPENDIX B. SOUTH CHINA SEA TERRITORIAL CLAIMS



Source: Middlebury Education, 1/1/2002 <<http://www.middlebury.edu/southchinasea>>

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**APPENDIX C. COUNTRIES THAT OCCUPY THE SPRATLY ISLANDS**

<u>Country</u>	<u>Islands Occupied</u>	<u>Troops</u>
PRC	7; several helo pads	260
Philippines	9; 1300-m runway	480
Vietnam	24; 600-m runway	600
Malaysia	3; 600-m runway	70
Taiwan 100	1; 1 helo pad	

**MAJOR GARRISONED ISLANDS IN THE SPRATLY ISLANDS**

<u>Year Occupied</u>
PRC: Fiery Cross (Yongshu Jiao) 1988
Philippines: (Thitu Pagasa) 1971
Vietnam: Spratly Island (Truong Sa Dong; Nanwei Dao) 1974
Malaysia: Swallow Reef (Terumbu Layang Layang) 1983
Taiwan: Itu Aba (Taiping) 1956

Source: Lin Cheng-yi's "Security Implications" conference paper. He cites the following as his sources: *1993-1994 National Defense Report, Republic of China* (Taipei: Li Ming Cultural Enterprise Company, 1994), 43; and Allan Shephard, "Maritime Tensions in the South China Sea and the Neighborhood: Some Solutions," *Studies in Conflict and Terrorism*, Vol. 17, No.2 (April-June 1994), 209-211.

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**APPENDIX D. GROWTH IN MERCHANDISE EXPORTS OF ASIAN COUNTRIES, 1990-2000 (BILLIONS OF U.S. DOLLARS)**

	<i>1990</i>	<i>1995</i>	<i>% Growth 1990-1995</i>	<i>2000</i>	<i>% Growth 1990-2000</i>
China	62.1	148.8	140%	249.3	301%
Hong Kong	82.4	173.9	111%	202.4	146%
Indonesia	25.7	45.4	77%	62.1	142%
Japan	287.6	443.1	54%	479.2	67%
Korea, Rep. of	65.0	125.1	92%	172.3	165%
Malaysia	29.4	73.9	151%	98.2	234%
Philippines	8.1	17.5	116%	39.8	391%
Singapore	52.8	118.3	124%	137.9	161%
Taiwan	67.1	111.6	66%	148.3	121%
Thailand	23.1	56.4	144%	69.1	199%
Vietnam	2.4	5.4	125%	14.5	504%

Source: WTO 2001

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**APPENDIX E. GROWTH IN U.S. MERCHANDISE IMPORTS FROM  
ASIA, 1990-2000 (BILLIONS OF U.S. DOLLARS)**

	<i>1990</i>	<i>1995</i>	<i>% Growth 1990-1995</i>	<i>2000</i>	<i>% Growth 1990-2000</i>
China	15.2	45.6	199%	100.1	557%
Hong Kong	9.5	10.3	8%	11.5	21%
Indonesia	3.3	7.4	122%	10.4	211%
Japan	90.4	123.6	37%	146.6	62%
Korea, Rep. of	18.5	24.2	31%	40.3	118%
Malaysia	5.3	17.5	232%	25.6	385%
Philippines	3.4	7.0	107%	13.9	312%
Singapore	9.8	18.6	89%	19.2	95%
Taiwan	22.7	29.0	28%	40.5	79%
Thailand	5.3	11.4	114%	16.4	210%
Vietnam	0.0	0.2	---	0.8	---

Source: USITC Data web

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**APPENDIX F. PRC SURFACE FORCE ASSETS**

<i>Type</i>	<i>Role</i>	<i>Quantity</i>	<i>Delivered</i>
Sovremenny	Destroyer	2 <sup>(1)</sup>	2000-01
Luhu (Type 052)	Destroyer	2	1994-6
Luda I/II (Type 051)	Destroyer	15	1971-92
Luda III	Destroyer	1	1993
Luhai	Destroyer	1	1999
Jianghu I (Type 053)	Frigate	27	1970s-96
Jianghu II (Type 053)	Frigate	1	1984
Jianghu III/IV (Type 053 HT)	Frigate	3	1986-93
Jiangwei I (Type 053 H2G)	Frigate	4	1991-4
Jiangwei II	Frigate	6(+2)	1998-
Houjian (Type 037/2, Huang)	Fast Attack Craft - Missile	6(+1)	1991-9
Houxin (Type 037/1G)	Fast Attack Craft - Missile	26	1991-
Huangfen (Type 021, Osa I)	Fast Attack Craft - Missile	30	1985-95
Houku	Fast Attack Craft - Missile	25	n/a
Hainan (Type 037)	Fast Attack Craft - Patrol	95	1963-95
Haiqing (Type 037/1)	Fast Attack Craft - Patrol	22	1992-
Huchuan (Type 025/026)	Fast Attack Craft - Torpedo	15	1966-94
Shanghai II (Type 062)	Fast Attack Craft - Gun	98	1961-95
Haijiu	Large Patrol Craft	2	n/a

<i>Type</i>	<i>Role</i>	<i>Quantity</i>	<i>Delivered</i>
Haizhui/Shanghai III	Coastal Patrol Craft	15(+2)	n/a
T 43 (Type 010)	Minesweeper - Ocean	27(+13)	1966-80
Wosao	Minesweeper - Coastal	8(+1)	1988-95
Futi (Type 312)	Drone Minesweeper	4(+42)	n/a
Wolei	Minelayer	1	1988
Yuting (Type 074)	Landing Ship Tank	8	1992-2000
Yukan (Type 072)	Landing Ship Tank	7	1980-95
Yuliang (Type 079)	Landing Ship Medium	22	1980-
Yudeng (Type 073)	Landing Ship Medium	1	1994
Yudao	Landing Ship Medium	1	1980s
Yuhai (Wuhu-A) (Type 074)	Landing Ship Medium	13(+3)	1995-7
Yunnan (Type 067)	Landing Craft Utility	36(+200)	1968-1982
Yuch'in (Type 068/069)	Landing Craft Utility/Personnel	8(+30)	1962-72
Jingsah II	Hovercraft	10	1979-
Daxin	Training Ship	1	1987
Shichang	Air Training Ship	1	1997
Qiongsa	Personnel Attack Transport	6	1980-
Dazhi	Submarine Support Ship	1	1963-5
Dajiang	Submarine Support Ship	3	1976
Dadong	Salvage Ship	1	1999
Dadao	Salvage Ship	1	1986

<i>Type</i>	<i>Role</i>	<i>Quantity</i>	<i>Delivered</i>
Dazhou	Submarine Tender	2	1976-7
Dalang	Submarine Support Ship	4	1975-96
Hudong	Submarine Rescue Ship	1	1967
Achelous	Repair Ship	1	1947
Dayun (Type 904)	Cargo Ship	2	1992
Andong	Cargo Ship	1	n/a
Galati	Cargo Ship	1	1970s
Yantai	Cargo Ship	2	n/a
Danlin	Cargo Ship	13	1960-2
Hongqi	Cargo Ship	5	n/a
Leizhou	Cargo Ship	9	1960s
Fuqing	Replenishment Ship	2	1979
Nanyun	Replenishment Ship	1	1996
Shengli	Replenishment Ship	2	1970s
Fuzhou	Replenishment Ship	7	1996
Fulin	Replenishment Ship	8	1972-
Dandao	Coastal Tanker	3	1970s
Guangzhou	Coastal Tanker/Water Carrier	5	1970-80s
Yen Pai	Degaussing Vessel	3	n/a
Dadie	Intelligence Gathering Vessel	1	1986
<i>Yuan Wang</i> 1-4	Space Event Ship	4	1979-1996

<i>Type</i>	<i>Role</i>	<i>Quantity</i>	<i>Delivered</i>
Shiyan	Space Event Ship	1	2000
Wuhu B	Research Ship	2	1997
Dahua	Research Ship	1	1998
Xiangyang Hong	Research Ship	13	1970s
Yanqian	Research Ship	2	1980-1
Dajiang	Research Ship	2	1981-2
Hai Ying	Research Ship	2	1987-9
Kan	Research Ship	2	1985-7
Xing Fengshan	Research Ship	1	1987
Hai	Research Ship	1	1975
Dong Fang Hong	Research Ship	1	1966
Hai Yang	Research Ship	2	1972-4
Shuguang 04	Research Ship	5	1970-5
Shuguang (ex-T 43)	Research/Survey Ship	1	1960s
Ganzhu	Research Ship	1	n/a
Yenlai	Survey Ship	5	1970s
Yannan	Survey Ship	4	1980
Wuhu B	Research Ship	2	1997
Yanbing (modified Yanha)	Icebreaker	1	1982
Yanha	Icebreaker	3	1969-89

Source: Jane's Defense Sentinel Security Assessment-China and Northeast Asia-12

1.13.11 Inventory: Surface Fleet



**APPENDIX G. PRC SUBMARINE FORCE ASSETS**

<i>Type</i>	<i>Role</i>	<i>Quantity</i>	<i>Delivered</i>
Xia (Type 092)	SSBN	1	1987
`Golf'	SSB	1	1966
Han	SSN	5	1971-90
Song (Type 039)	SSK	3 <sup>(1)</sup>	1999-
Kilo (Type 877EKM)	SSK	4	1995-
`Ming' (Type 035)	SS	17	1971-
`Romeo' (Type 033)	SS	32 <sup>(2)</sup>	1962-87
Modified `Romeo'	SSG	1	n/a
DSRV	Salvage Submarine	1	n/a
<p><b>Key</b>                      SSBN - Ballistic Missile Nuclear Submarine.                      SSB - Ballistic Missile Submarine.                      SSN - Nuclear Attack Submarine.                      SSK - Diesel-Electric Attack Submarine.                      SS - Attack Submarine.                      SSG - Guided Missile Submarine.</p>			

Source: Jane's Defense Sentinel Security Assessment-China and Northeast Asia-12

1.13.12 Inventory: Submarines

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**APPENDIX H. PRC NAVAL AIR FORCE FIXED-WING ASSETS**

<i>Type</i>	<i>Role</i>	<i>Quantity</i>	<i>Delivered</i>
Xian H-6/H-6 III	Bomber	30	n/a
Harbin H-5	Bomber	100	1967
Nanchang Q-5	Attack	100	n/a
Shenyang J-6/JJ-6	Air Defense/Attack	250	n/a
Chengdu/Guizhou J-7 I/II/III	Air Defense/Attack	100	1966-1992
Shaanxi Y-8	Airborne Early Warning	6 <sup>(1)</sup>	n/a
Harbin SH-5	Maritime Patrol	4	1986
Beriev Be-6 'Madge'	ASW Flying-Boat	12	n/a
Xian Y-7	Transport	10	1984
Shijiazhuang Y-5	Utility	40	n/a
Shenyang J-5A	Lead-In Trainer	50	1964

Source: Jane's Defense Sentinel Security Assessment-China and Northeast Asia-12

1.13.13 Inventory: Naval Aviation, Fixed-Wing

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**APPENDIX I: PRC NAVAL AIR FORCE ROTARY-WING ASSETS**

<i>Type</i>	<i>Role</i>	<i>Quantity</i>	<i>Delivered</i>
Aerospatiale SA 321G/Zhi-8 Super Frelon	ASW Helicopter	6	1991
Sud SA 321J Super Frelon/Changhe Z-8	ASW Helicopter	8/12	1977-1994
Harbin Zhi-9A	ASW Helicopter	10	1989
Kamov Ka-28 'Helix-A'	ASW Helicopter	12 <sup>(1)</sup>	1999

Source: Jane's Defense Sentinel Security Assessment-China and Northeast Asia-12

1.13.14 Inventory: Naval Aviation, Rotary-Wing

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**APPENDIX J: PRC NAVAL-MARINE INFANTRY ASSETS**

<i>Type</i>	<i>Role</i>	<i>Quantity</i>
Type 59	Main Battle Tank	400
Type 60	Light Tank	250
Type 63	Light Tank	100
PT-76	Light Tank	250
Type 531	Armored Personnel Carrier	500
Type 77	Armored Personnel Carrier	180
122 mm Type 54	Howitzer	100
122 mm Type 54-I	Self-Propelled Howitzer	200
Type 63	Multiple Rocket Launcher	n/a

Source: Jane's Defense Sentinel Security Assessment-China and Northeast Asia-12

1.13.16 Inventory: Naval Infantry

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## APPENDIX K: PRC COASTAL REGIONAL DEFENSE ASSETS

<i>Type</i>	<i>Role</i>	<i>Quantity</i>
C-201 Hai Ying	Missile System	n/a
C-101 Hai Ying 2	Missile System	n/a
130 mm	Coastal Artillery	250
100 mm	Coastal Artillery	500
85 mm	Coastal Artillery	500

Source: Jane's Defense Sentinel Security Assessment-China and Northeast Asia-12

1.13.17 Inventory: Coastal Defense

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## APPENDIX L: PRC NAVAL AIR DEFENSE ASSETS

<i>Type</i>	<i>Role</i>
CATIC PL-2 Atoll'	Air-to-air
CPMIEC YJ-G (CAS-1 'Kraken')	Anti-ship Attack

Source: Jane's Defense Sentinel Security Assessment-China and Northeast Asia-12 1.13.15 Inventory: Naval Aviation, Defense

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