

The PLA Navy: Its Modernization And Sea Control In The East

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EXECUTIVE SUMMARY

Title: THE PLA NAVY: ITS MODERNIZATION AND SEA CONTROL IN THE EAST

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Thesis: The People's Republic of China is in the midst of a far reaching military modernization program. Modernization of the PLA Navy, an arm of the People's Liberation Army, is a part of this effort. The PLA Navy seeks control of local seas. This has both short and long term political implications for the region and the United States. The US cannot prevent a sovereign power from building a modern defense force; but it can maintain the military balance and peace in the region by keeping the US Pacific Fleet superior to the PLA Navy.

Discussion: This paper examines the nature and capabilities of today's PLA Navy, and makes observations concerning recent efforts at modernization. First, this paper discusses People's War, since it is the underlying doctrine that molded the shape and mission of today's PLA Navy. Next the paper reviews today's PLA Navy with a brief discussion aimed at providing a description of its strengths, weaknesses, and current capabilities. The paper discusses the recent expansion of China's economy; for recent trends have had dramatic impact on the thought behind People's War, the nation's political ambitions, and consequently, the PLA Navy's capabilities and missions. It appears that as China's economy and standing in global trade grow, so too does the importance of the PLA Navy. This paper examines some specific projects in work to modernize the Chinese fleet. Finally, the paper makes an estimate of the future nature and capability of the PLA Navy. Future roles for its navy are tied to China's political goals. Here lie implications for the United States and its Navy.

Conclusions: The PLA Navy will slowly increase its ability to control the region's open seas. With this comes economic and political power for the PRC. The US can do little to prevent this; indeed, there is nothing unreasonable about China's desire to modernize its military. Nonetheless, China has demonstrated willingness to use its navy to achieve political goals, and executes intimidating, sometimes dangerous, naval exercises in inter-

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national waters. It does this with political ends in mind. As the PLA Navy expands its sea control into the open oceans in the East, US military presence in Asia shrinks. The United States must return to a consistent, resolute foreign policy aimed at peace in the region. In order to achieve this, the Pacific Fleet must remain superior to the PLA Navy, and retain supremacy of the ocean and sea control in the East.

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CHAPTER ONE: INTRODUCTION

“When China awakes, the world will quake...”

- Napoleon Bonaparte

This paper examines the nature and capabilities of today’s People’s Liberation Army Navy (PLA Navy), and makes observations concerning recent efforts at modernization. First, this paper discusses People’s War, since it is the underlying doctrine that molded the shape and mission of today’s PLA Navy. With this background in mind, the paper will review the structure, composition, and capabilities of today’s PLA Navy. Next, this paper examines the recent expansion and growth in China’s economy; for recent trends and changes have had a dramatic impact on the thought behind People’s War, the nation’s political ambitions, and consequently, the PLA Navy’s capabilities and missions. It appears that as China’s economy and standing in global trade grow, so too does the importance of the PLA Navy. This paper looks at some of the PLA Navy’s modernization efforts, which are necessary to Beijing’s political goals. Finally, in light of China’s economic growth, its political objectives, and recent modernization efforts, this paper attempts to determine the future nature and capability of the PLA Navy. It is this last that has direct implications for the United States and its Navy.

In the last decade, the PLA Navy began to stir from its slumber. For many anxious naval observers, this awakening is the cause of great concern. China is in the

midst of a far reaching long-term military modernization program, and has clearly demonstrated willingness to use its new force. The rise of the PLA Navy is directly linked to Beijing's military modernization, which in turn derives its impetus from China's rapidly expanding economy. At 1.3 billion people strong with an enormous, centrally located landmass endowed with vast resources, China's economic potential appears great. The PLA Navy seems to be following the economy's lead, and appears to be on the way to becoming a rival to other great navies of the world.

Of concern is not only the PLA Navy's potential capability, or the sheer amount of power that it may one day wield, but the uncertainty of its objectives. The People's Republic of China (PRC) is a closed society, and is not forthcoming with explanations for its military modernization. It does not report its military expenditures in the United Nations format.¹ Any publication that deals with its figures must add a caveat that China's military budget numbers are questionable. Likewise, published doctrine, short of People's War, and People's War Under Modern Conditions, reveals little about how China will fight its next war. Nor does military doctrine (available to western observers) explain military aspirations, or the long term vision for the present modernization of its armed forces. Perhaps by cloaking itself in secrecy, China invites probing, inspection, and even suspicion. To maintain international stability and promote prosperity in the world economy, (an economy from which China itself reaps benefits) prudence dictates that the West view the PLA Navy's modernization with caution. To add to the uncertainty of the PLA Navy's potential size and capability, are China's outspoken

¹ US Arms Control and Disarmament Agency, *World Military Expenditures and Arms Transfers 1995* (Washington DC: US Government Printing Office, April 1996) p. 42.

political goals, and its (demonstrated) willingness to use naval force to achieve those ambitions.

The world little noticed when China announced its four modernizations nearly twenty years ago. Of these, the military was ranked fourth.² In relatively short time, China rose to become a significant trading partner with the West, and wields great economic strength. Western defense analysts anxiously wonder whether or not this quick rise in economic strength will translate to an equally expedient climb in naval might. Perhaps it is the potential magnitude of the force the world's most populous nation can bring to bear that causes alarm in the West. But the West possesses fine armed forces, and is likely to maintain its technological and capability advantages for the foreseeable future. Further, the West too, particularly the United States, has a strong and robust economy. As long as the West takes notice of China's recent initiatives, and continues to engage the PRC on economic and political fronts in a consistent manner, China's entry onto the world scene may not cause the great aftershocks Napoleon forecast.

² Paul H.B. Godwin, "A Tentative Appraisal of China's Military Reforms," in *Reform and Development in Deng's China*. ed. Shao-Chaun Leng (New York: Univ. of America Press, 1994) 106.

CHAPTER TWO: PEOPLE'S WAR

There is little information available on the subject of Chinese naval doctrine. The People's Republic of China is a closed society, and keeps its warfighting doctrine close. The doctrine of People's War, promulgated by Mao Zedong, is a broad philosophy of warfighting that still has implications for naval doctrine today. This doctrine and its modifications guide today's PLA Navy. This chapter summarizes the PRC military doctrine.³

PEOPLE'S WAR

People's War grew out of the communist military experience in the early war years. It recognized the inherent weakness of the People's Liberation Army (PLA), and overcomes military disadvantages with a doctrine that takes advantage of the strengths it does have: huge landmass, a large (sympathetic) population, and time. It stresses the importance of mobilization of the masses, and the importance of men and politics over weapons. Since the PLA expects to face forces which are superior to it in military terms, it makes up for this in the morale and political motivation of the masses. China's huge landmass becomes important as the army trades space for time in the tactic of strategically wearing down the opponent. This is primarily a land battle. Under the

³ For a more complete discussion on the concept of People's war, especially with respect to naval operations, see Alexander Chieh-cheng Huang, "The Chinese Navy's Offshore Active Defense Strategy: Conceptualization and Implications," *Naval War College Review*, Vol. XLVII, No 3, Sequence 347 (Summer 1994). Huang's work is an excellent review of the doctrine and how it relates to today's PLA Navy. Much of the discussion in this chapter is from Huang's work. See also William V. Kennedy, "The

doctrine, the PLA assumes roles as a work force and a production force in addition to being a fighting force under the direct leadership of the communist party. Traces of this doctrine are visible in the PLA today.

The concept of People's War is generally one of *active defense* in which the population's masses mobilize to fight a protracted war against an invader. In active defense, Chinese forces take advantage of large landmass and population. Active defense invites enemy forces deep into the interior of the country. By allowing the enemy deep inland, lines of communication become extended, exposing the superior force's (the invader) vulnerabilities which the defenders can exploit. The concept of *strategic depth* embodies this notion. On a tactical level, the PLA concentrates force, seizes local superiority, and destroys the enemy piecemeal. Strategically, the People's War wears down the invader, over time, by slow attrition.

PEOPLE'S WAR UNDER MODERN CONDITIONS

The world has changed since the Japanese invasion and the Chinese Civil War. In spite of the changes, Chinese military forces remained inferior to the West's in relative terms, and China's leaders have clung to the doctrine of People's War. Still, after Mao Zedong's death in 1976, there was much debate over the doctrine of People's War. Central to the debate was the fact that China's population and industrial centers had shifted to the coastal regions. Coastal cities became indispensable to the Chinese

Defence of China's Homeland," of *The Chinese War Machine: A Technical Analysis of the Strategy and Weapons of the People's Republic of China*. ed. Ray Bonds (London: Salamander Books, 1979).

economy. Trade from coastal ports became a great source of economic strength and wealth. People's War became untenable since the country could not allow invaders to control these regions. In the mid-seventies, the Central Military Commission called for modernization, but this met with great opposition. Why abandon doctrine that had served China so well in the face of superior enemies? Under Deng Xiaoping's leadership, the new doctrine, People's War Under Modern Conditions, took on a face that both accounted for changes in the world, and remained loyal to the old strategy.

People's War Under Modern Conditions remains similar to People's War in many respects. The primary differences are the *conditions* under which the armed forces will fight, and how they adapt to them. People's War Under Modern Conditions has a military-specific doctrine which military leaders call *Active Defense Under New Historical Conditions*. The modified doctrine acknowledges that in order to fight a protracted war, China cannot afford to give up its coastal regions. Therefore, the concepts of *strategic depth* and *active defense* had to be changed. *Extended strategic depth* establishes a defense zone, or region, beyond China's territorial and maritime borders as necessary in time of conflict. In this area, Chinese forces engage in a new form of *active defense* by fighting the enemy in the forward areas. For the PLA Navy, *offshore active defense* is the naval extension of the new strategy. Offshore active defense includes areas of the sea stretching as far as the first and second island chains. (See Appendix A) People's War Under Modern Conditions links modern thought to Maoist principles thus lending legitimacy to the new strategy. Although, like People's

War, this strategy is basically a defensive one, it calls for forward capabilities that require modernization.

SUMMARY

This chapter provided a brief summary of People's War, and People's War Under Modern Conditions. The Maoist tradition of defensive war countering superior forces with masses sympathetic to the Chinese cause (People's War) still has a place in today's Chinese military doctrine. The newer doctrine, People's War Under Modern Conditions, acknowledges changes in China and the world. It also acknowledges persistent relative weaknesses in China's military forces. It also has a defensive nature; in this sense, it bears similarities to People's War. China today can not allow an enemy to occupy or otherwise disturb the coastal regions. The new strategy accounts for this by introducing a new concept of strategic depth which includes forward areas that extend beyond territorial and maritime boundaries. This, in turn, has implications for the PLA Navy, as offshore active defense becomes its new doctrinal guidance.

CHAPTER THREE: THE PLA NAVY

This chapter provides a brief naval history to introduce today's PLA Navy. The review of today's PLA Navy is an estimate of the size, nature, and capability of the PRC's fleet. This review, drawing on the military doctrine discussion in chapter two, and the historical note below, should provide an understanding of why the PLA Navy is where it is today.

PLA NAVY HISTORY IN BRIEF

By 1937, China had no navy -- the Japanese had virtually destroyed the entire coastal fleet.⁴ The Chinese nationalists, with British and American help, slowly built the fleet back up in the following decade. By the end of the Chinese Civil War, most of these men and ships defected to the communists, or the PLA commandeered them. The PLA Navy was established in April 1949. Since its formation, it was by design employed as a coastal defense navy. At the dawn of communist rule, the coastal fleet could most accurately be described as an extension of the people's army rather than a navy.⁵

Subordinate to the army, and subject to the doctrine of People's War, the early PLA Navy was charged with the mission of defense of the homeland.⁶ The early fleet

⁴ Hugh Lyon, "China's Navy: For Coastal Defence Only," of *The Chinese War Machine: A Technical Analysis of the Strategy and Weapons of the People's Republic of China*. ed. Ray Bonds (London: Salamander Books, 1979). p. 150.

⁵ Huang, p. 8-9.

⁶ Lyon, p. 155.

consisted of obsolete vessels in generally poor condition, but some remained in service well into the seventies.⁷ The PLA Navy was powerless to project force offensively, and considering the length of China's coastline, it is arguable whether or not the PLA Navy could even adequately perform its coastal defense mission effectively in the early years. In 1949, the communist regime under Mao Zedong endorsed a modernization plan for the PLA Navy. Its security concerns were: 1) Nationalists still controlled many offshore islands, 2) The Kuomintang (KMT) Navy controlled sea lines of communication from Shanghai, and 3) The United States Navy could mount amphibious attacks against China's coasts.⁸

In the 1950s, the Soviet Union built up the PLA Navy. Over 2,500 Russian technicians and advisors oversaw reconstruction and training of the PLA Navy.⁹ Many Soviet ships were transferred to the PRC's fledgling fleet. In spite of this assistance, the PLA Navy was ineffective during the Korean War, and could do nothing to impede the American Seventh Fleet's operations against North Korea.¹⁰ By the early sixties, a political rift between the Soviet Union and the PRC had formed, and Soviet modernization efforts came to an end.

The decades of the 1960s and 1970s were relatively stagnant years for the PLA Navy. Despite some additions and improvements, modernization efforts essentially came to a halt.¹¹ Additionally, during this time, Mao was preoccupied with the cultural

⁷ Lyon, p. 150.

⁸ Center for Naval Analysis (CNA), *People's War at Sea: Chinese Naval Power in the Twenty-First Century*. Study. ADA306680, March 1996. p. 12.

⁹ Lyon, p. 150.

¹⁰ *Ibid.* p. 154.

¹¹ CNA, p. 12.

revolution and defense of the Sino-Soviet border.¹² Poor combat performance against the Vietnamese in 1974 was evidence of the PLA's (and its navy's) general decline.¹³ It was during the 1970s that the PLA Navy assessed the enormous difficulty of patrolling and defending China's large Exclusive Economic Zones (EEZ) in neighboring seas. Finally, in the late 1970s, Deng Xiaoping introduced plans to modernize the military (and the PLA Navy).¹⁴

Liu Huaqing, Commander in Chief of the PLA Navy from 1982 to 1987, advanced the mission and role of the PLA's naval arm in the eighties. Under his leadership, the concept of China's maritime defense in modern conditions gained importance in military doctrine.¹⁵ People's War was still a valid doctrine, but under new conditions, the territory in which the enemy would be engaged (and China defended) would be the regions beyond China's coastline -- the seas. This region extended as far as the first and second island chains. (See Appendix A) Moving the protective perimeter well forward had obvious implications for the PLA Navy. The PRC needed more than a coastal defense fleet. In 1980, the West observed the first signs of Chinese blue water operations in an exercise in the South Pacific. These exercises, which advanced the PLA Navy's role in the new doctrine, increased in frequency throughout the 1980s.¹⁶

¹² David C. Johnson, "Modernization of the PLA Navy and East Asian Regional Security Issues," *Journal of Public and International Affairs*, online edition under www.wws.princeton.edu/~jpia/ (Princeton Univ.: Woodrow Wilson School of Public and International Affairs, July 1996)

¹³ CNA, p. 12.

¹⁴ Ibid.

¹⁵ Geoffrey Till, "China, Its Navy and the South China Sea," *RUSI Journal*, Vol. 141, No. 2, (London: Whitehall, April 1996), p. 50.

¹⁶ Johnson.

The guns fired in a naval skirmish in March 1988 announced the arrival of China's nascent blue water fleet. This engagement, in which three Vietnamese ships were sunk, killing 70 sailors, demonstrated the PRC's willingness to use its new fleet when it deemed successful engagement would achieve a political end.¹⁷

During the 1980s, the PLA Navy modernized and grew in importance to the PRC. By 1992, its political power increased; at the 14th Communist Party of China (CPC) congress, the PLA gained a nine percent increase in the number of seats it holds, and importantly, Liu Huaqing, an advocate for overall military modernization, was elevated to the Politburo Standing Committee.¹⁸ The 14th CPC congress gave clear direction to the PLA Navy stating it should modernize "... and place education and training in a strategic position; to raise the quality of officers and men in an all-around manner. It is important to attach importance to scientific and technological research in national defense, national defense industries, as well as improve weaponry and equipment step by step."¹⁹ Some reasons given for the modernization were: 1) the PLA Navy's inventory consisted mostly of 1950s and 1960s technology, 2) The PRC's desire to have a military power commensurate with its growing economic power, 3) To defend its sovereign territory -- including disputed territory, 4) Observations of recent western conflicts (Falklands, Gulf War), and 5) the PLA's role in supporting the communist regime.²⁰ In a traditional sense, the PLA Navy remained an instrument of PRC politics; but PRC

¹⁷ Philip Shenon, "China Sends Warships to Vietnam Oil Site," *New York Times*, January 2, 1994, Sec A16.

¹⁸ Johnson. Author's note: Liu Huaqing's appointment had as much importance for the PLA as it did for the PLA Navy.

¹⁹ Ibid.

²⁰ United States General Accounting Office (US GAO), *National Security: Impact of China's Military Modernization in the Pacific Region*. Report to Congressional Committees. (Washington DC: US GAO, June 1995), GOA/NSAID-95-84 National Security. p. 12.

politics, given the new doctrine and needs to protect the neighboring seas, called for a modern blue water navy.

TODAY'S PLA NAVY

At over 600 ships, the PLA Navy, in numerical terms, is certainly one of the largest navies in the world.²¹ Appendix B provides a summary of the composition of the PLA Navy. Measured by personnel, 268,000 strong, the PLA Navy, again, weighs in as one of the largest naval forces in the world today.²² The PLA Navy is organized in three regional fleets of approximately equal size: 1) The North Sea Naval Region Group, headquartered at Qingdao, 2) The East Sea Naval Region Group, headquartered at Shanghai, and 3) The South Sea Naval Region Group, headquartered at Zhangjiang.²³

The PLA Navy's ability to project power over vast ocean distances is questionable. Mr. James R. Lilley, Director of Asian Policy Studies at the American Enterprise Institute, and former Ambassador to China, stated at a March 1996 House hearing on security challenges posed by China, that "China is far from being able to mount sustained operations very far from Chinese mainland shores, particularly, it will be unable to successfully invade Taiwan for at least three to four years. One of the most

²¹ As noted earlier, exact numbers are difficult to arrive at, given China's reluctance to openly reveal specific data on the size of its force. (US Arms Control and Disarmament Agency) Numbers for the PLA Navy's fleet composition in this paper are taken primarily from Jane's Information Group, "China, People's Liberation Army Navy (PLAN)," of *Jane's Fighting Ships 1997-1998*, 100th ed. (1997), p. 113. The numbers given in *Jane's* vary slightly from other sources reviewed by the author, (CNA, p. 13, and McVadon, cited later in this paper, p. 258.) but estimates generally reconcile, and give a relatively similar appreciation for the size and composition of the PLA Navy.

²² *Jane's Fighting Ships 1997-1998*, p. 113.

²³ Johnson.

notable obstacles in its way is doctrine. It lags in technology, and is devoid of the doctrine and training necessary to exploit new and improved systems, equipment and technology.”²⁴ Ambassador Lilley’s comments on doctrine are interesting. China’s leaders are old. Chapter two noted the struggle to reconcile the changing world with Mao’s philosophy for legitimacy; perhaps this debate is where naval doctrine finds the obstacle that prevents it from unleashing the intellectual imagination to fully exploit modern technologies. In fact, this is an issue that today’s PLA Navy addresses in its attempt to become a truly professional force. There is a new doctrine forming in today’s PLA Navy that will reconcile this question, and eventually replace the doctrine of People’s War Under Modern Conditions. It is called People’s War Under Highly Technological Conditions.²⁵ The PLA Navy recognizes the importance of technology in today’s world, and this doctrine attempts to account for it by allowing the PLA Navy to exploit it. But, as Mr. Eric A. McVadon, former senior military analyst for the United States Embassy in Beijing noted, “... even the units that have received modern equipment are not capable of technologically advanced warfare.”²⁶ Although not yet fully firmed, the doctrinal foundation for exploitation of modern warfare systems is taking shape in its forms; meanwhile, in spite of efforts to modernize, technology still lags.

Today, western observers see in the PLA Navy a naval force that grapples with the issues above in its attempt to become a truly professional blue water fleet. Most of the

²⁴ US Congress, House, Committee on National Security, *Security Challenges Posed by China*. Hearing. 100th Cong., 2nd sess., March 1996, (Washington DC: US GPO) Y4.SE 2/1 A:995-96/39. p. 40, 41.

²⁵ A source, high ranking officials of the Taiwanese Mission to the United States, interview by author, Washington DC, November 13, 1997. Author’s note: People’s War Under Highly Technological Conditions has applications for the PLA as well as the PLA Navy.

fleet consists of old, obsolete vessels, but there is a nucleus of newer, modern ships that will form the 21st century PLA Navy. Among these are the *Luda* and *Luhu* class destroyers, the *Jiangwei* and *Jianghu* class frigates, the *Huang* and *Houxin* class fast attack craft, and the *Ming*, *Song*, and *Kilo* class submarines.

Surface to Surface Missiles

Perhaps one of the greatest strengths of today's PLA Navy is its cruise missile capability. It has built up a powerful antishipping force in large part to conduct combat operations against Taiwan.²⁷ Although its missiles possess great range and capability, targeting remains a problem for the PLA Navy.²⁸ In comparison to Taiwanese combatants, the two naval forces are of approximately equal strength. The Taiwanese ships possess modern antishipping cruise missiles such as American *Harpoons*. The PLA Navy elected to counter these systems with large numbers of longer range antishipping missiles of its own, rather than anti-missile defense systems (although emphasis is now being placed on such systems).²⁹ The result is a formidable offensive antishipping capability for the PLA Navy.

A new generation of surface-to-surface missiles (SSM) is replacing the older *Styx* variants and *Silkworm* missiles. The new *Sardine* (C-801) and *Saccade* (C-802) missiles

²⁶ Patrick E. Tyler, "China's Military Stumbles Even as Its Power Grows," *New York Times*, December 3, 1996, Sec. A1.

²⁷ Eric A. McVadon, "PRC Exercises, Doctrine and Tactics Toward Taiwan: The Naval Dimension," of *Crisis in the Taiwan Strait*, ed. James R. Lilley and Chuck Downs (Washington DC: National Defense Univ. Press, 1997), p. 259.

²⁸ *Ibid.* p. 265.

²⁹ *Ibid.*

are more reliable, and in the case of the C-802, have twice the range -- up to 65 nautical miles.³⁰ Appendix B provides a table of PLA Navy ships equipped to fire the SSM arsenal. Not surprisingly, the newer class destroyers (*Luhu, Luda*) and frigates (*Jiangwei, Jianghu*) are configured to fire the newer *Sardine* and *Saccade* missiles. It is significant to note that small new fast attack craft (*Huang* and *Houxin* class PGGs) are being constructed with the same missile firing capabilities as the larger destroyers and frigates.³¹ Both *Huang* and *Houxin* PGG class ships entered service in the nineties, and *Houxin* class continues production at a rate of approximately three new ships per year.³²

Naval Air Defenses and Air Forces

If cruise missiles are a PLA Navy strength, then air defense is a PLA Navy weakness. Only a few PLA Navy ships have modern air defense systems, and fewer still have sophisticated, modern air defense radars capable of early detection, identification, and tracking of multiple air targets.³³ The most capable anti-air warfare ship is the *Luhu* class destroyer. Its *Rice Screen* three dimensional air search radar can detect and track airborne targets out to approximately 110 miles. Once within approximately 7.5 miles, the destroyer can then engage the air contacts with its eight *Crotale* missiles. The French *Crotale* surface-to-air missile (SAM) and TAVITAC combat data system are the heart of this capability.³⁴ There are only two *Luhu* class ships in the PLA Navy, and both are

³⁰ Jane's Information Group, "Surface to Surface Missiles," *Jane's Naval Weapon Systems*, (Surrey, UK, 1996), Issue 13.

³¹ *Jane's Fighting Ships*, p. 113-119.

³² *Ibid.*

³³ McVadon, p. 260.

³⁴ Felix K. Chang, "Beijing's Reach in the South China Sea," *Orbis* Vol. 40, No. 3, (Summer 1996), p. 367-368.

assigned to the North Sea Fleet.³⁵ The next most capable air defense systems are on the *Jiangwei* and *Jianghu* class ships. These possess Chinese SAM systems: Chinese HQ-61 launchers, and PL-9 missiles with a range of approximately five miles. However, this SAM system has had a long history of technical problems.³⁶ *Luda* class destroyers are being upgraded with the SAM/TAVITAC suite; already three possess this system.³⁷ This upgrade to the *Luda* is critical to South China Sea operations where six ships of this class are assigned.³⁸ Of the three fleets, the South China Sea Fleet is the least capable in terms of air defense.³⁹

Naval air forces are relatively ineffective, and air superiority is a problem for the PLA Navy. Since the PLA Navy does not possess an aircraft carrier, fixed wing air force projection must come from shore-based aircraft. PLA naval aircraft are dependent on ground controlled radar for air interception.⁴⁰ In the Taiwan Strait, this may not be a significant issue, but in the South China Sea it is. To exacerbate the problem, ship-based radar systems are inadequate for the task of effectively controlling large numbers of aircraft in an air defense role.⁴¹ In recent years, the PLA has made efforts to correct this situation. In February 1996, Russia concluded an agreement to sell 72 high performance SU-72 fighters to the PRC as a prelude to a licensing agreement which will allow production of this aircraft in China.⁴² The SU-72 can be modified for (eventual) carrier use, but in the meantime, it significantly increases the combat range of the PLA Air

³⁵ Philip Young, "Navy of the PLA," *Chinese Military Digest* online edition under www.pasadena.net/~gsprint/cmd/cmd.htm, 1997.

³⁶ Chang, p. 368.

³⁷ Ibid.

³⁸ Young.

³⁹ Chang, p. 369.

⁴⁰ McVadon, p. 262.

⁴¹ Ibid.

Force's (PLAAF) air protection for the PLA Navy.⁴³ Add to this the forward airstrip the Chinese built on Woody Island in the South China Sea, and naval air forces have legs from which they can project power at sea.⁴⁴ In spite of these efforts, many issues confront China's naval air forces today. Woody Island is still far from being a primary base of operations.⁴⁵ Maintenance and training issues limit naval air power effectiveness. Further, for all the advances in size and capability of PLA air forces, Taiwan and other regional powers keep these in check. At the same time Chinese and Russian negotiators signed the SU-72 agreement, Taiwan began taking delivery of 150 American F-16s and 60 French *Mirage 2000* fighters.⁴⁶ Air superiority over the South China Sea and other forward regions is a problem for the PLA Navy; therefore, the short supply of ship-based air defense systems is of critical importance to the fleet.⁴⁷

Surface Combatants

Luda class guided missile destroyers are the PLA Navy's primary surface combatants tailored for blue water operations. These ships are mostly 25 year old vessels that have gone through modernization which includes various mixes of radar sensors, surface-to-surface missiles, and multi-threat combat direction center display systems. (Much of these were discussed above.) The newest *Luda* class prototypes include helicopter platforms, and improved anti-submarine warfare defense systems.⁴⁸ Appendix B will show that the PLA Navy, while large, is comprised mostly of small combatants.

⁴² Patrick E. Tyler, "China to Buy 72 Advanced Fighter Planes from Russia," *New York Times*, February 7, 1996, Sec A1.

⁴³ Ibid.

⁴⁴ Chang, p. 362.

⁴⁵ Ibid.

⁴⁶ Tyler, Sec. A1.

⁴⁷ Chang, p. 365.

Of significant note is the large number of fast attack craft. The *Huang* and *Houxin* class PGGs represent the latest design to this type of small surface combatant and give the PLA

Navy a powerful antishipping capability. These ships are capable of firing the same C-801 and C-802 missiles the larger destroyers carry. Their size and number could present a potential adversary with a difficult problem.

Submarines

At over 60 vessels, the PLA Navy's submarine force ranks as one of the largest submarine fleets in the world.⁴⁹ Most of these are older class submarines which are limited in power projection capability. In spite of this, the submarine force has some noteworthy capabilities such as the *Xia* class SSBN which carries 12 JL-2 missiles, and is capable of submerged launches. This is the only ship of its class in the PLA Navy, and is currently undergoing retrofit; it is expected to be back in service in 1998.⁵⁰ The cruise missile SSG (see Appendix B) is a modified Soviet *Romeo* class submarine. It must surface to fire its missiles, and is still in active service today.⁵¹ *Han* class SSNs joined the fleet in the seventies. Five were built, and four are still in service today.⁵² Among the newest ships in the PLA Navy's submarine force are the *Kilo* class SSs. The PRC purchased four of these from Russia. The third unit was scheduled for delivery to the

⁴⁸ James Bussart, "Chinese Destroyers Incorporate Western Technologies, Designs," *Signal*, Vol. 49, No. 7, (March 1995), p. 53-55.

⁴⁹ *Jane's Fighting Ships 1997-1998*, p. 113.

⁵⁰ *Ibid*, p. 114.

⁵¹ *Ibid*, p. 117.

⁵² *Ibid*, p. 114.

PLA Navy in November 1997.⁵³ The last two *Kilos* are upgraded units known as *Project 636*. These variants of the *Kilo* class submarines rank among the most quiet submarines

⁵³ Jane's Information Group, "China Should Receive Third Kilo by November 1997," *Jane's Defence Weekly*, Vol. 28, No. 4. July 30, 1997. p. 13.

in the world. Additionally, they include wake homing and acoustic wire-guided homing torpedoes.⁵⁴ The fourth delivery is expected to take place in 1998.

In general, the submarine fleet, like the aviation arm of the PLA armed forces, has challenges to overcome. *Han* and *Xia* class nuclear submarines are old and experience numerous technical problems with their propulsion plants. Radiation leaks have been reported as some of the problems experienced by these ships.⁵⁵ The *Kilos* represent an injection of modern capability and sophistication to the PLA Navy's submarine force, but training is a problem for the crews that man these new ships. The crew designated to man the first of the *Kilo* SSs spent one year at St. Petersburg, Russia, to learn to operate the submarine's systems.⁵⁶ Future crews will require equally lengthy programs in China. To exacerbate the training deficiency, there is no training program in place for the newer, *Project 636* variants of the *Kilos*.⁵⁷

Exercises and Training

Observation of exercises the PLA Navy conducts provides insights to all the issues discussed above. Doctrine, blue water operations, and newer ships develop with each exercise at sea. Doctrine, the nature of the PLA Navy's capability, and warfighting strategies reveal themselves by critical analysis of the type, and quantity of each ship, and by the type operations performed in the exercises.

⁵⁴ Office of Naval Intelligence (ONI), *Worldwide Submarine Challenges* (Washington DC: US GPO, February 1997) Monograph. p. 20.

⁵⁵ Jane's Information Group, "Russia Helps China Take New SSNs into Silent Era," *Jane's Defence Weekly*, Vol. 28, No. 6. August 13, 1997. p. 13.

⁵⁶ Jane's Information Group, "China Should Receive Third Kilo by November 1997." p. 13.

⁵⁷ *Ibid.*

By the mid 1980s, military training became oriented less on massive war against the Soviet Union (Russia), and more focused on small scale, short limited wars with specific objectives. In 1988, the PLA conducted four major exercises with these objectives in mind. Three were army exercises in the north, the fourth was a South China Sea scenario in which China defended territorial islands against Vietnam.⁵⁸ This reflects the new doctrine and Liu Huaqing's direction: "The Chinese Navy should exert effective control of the seas within the first island chain. Offshore should not be interpreted as coastal as we used to know it. Offshore is a concept relative to the high seas. It means the vast sea waters within the second island chain."⁵⁹ Interestingly, the PLA Navy established its first Marine brigade under the South Sea Fleet in 1979.⁶⁰ Recently the PRC tailored its Marine forces for amphibious assault and trained airborne units for rapid deployment. One such force is based on Hainan Island, ideally located for quick deployment to the Spratlys, or the Paracels.⁶¹ These exercises, and the nature of the force capabilities the PLA Navy trains to in them, demonstrate serious attempts to implement the new doctrine.

Exercises in the Taiwan Strait demonstrate open ocean and missile firing capabilities. These seem to increase in frequency, and often coincide with political events inside Taiwan. In July 1995, an exercise in the Taiwan Strait (one month after Taiwanese President Lee Teng-hui's trip to the United States) included firing six *Dongfeng-21* and *Haiying-8* missiles from Anhui Province into a designated area near

⁵⁸ Godwin, p. 112.

⁵⁹ ONI, p. 18.

⁶⁰ Huang, p. 24.

⁶¹ Patrick E. Tyler, "China Revamps Forces With Eye to Sea Claims," *New York Times*, January 2, 1995, Sec A2.

strategic shipping lanes off Taiwan's coast.⁶² In August 1995, the PLA conducted a joint Navy-Air Force exercise in the East China Sea including simulations of the types of warfare necessary for enforcing a naval blockade. These included sea-to-sea, sea-to-air, and undersea exercises. In November, (immediately prior to Taiwan's legislative elections) army, air force, and naval forces conducted an amphibious assault exercise on the coast of Fujian Province.⁶³ In another exercise in March 1996, China again fired ballistic missiles at Taiwan's shipping lanes.⁶⁴

The PLA Navy's exercises increasingly integrate submarines and undersea warfare in various training scenarios. Generally, submarines operate within twenty miles of their home port,⁶⁵ but more and more, the submarine force is at sea, long distances from home, training with the fleet. Chinese industry has made great strides in underway refueling capability for submarines.⁶⁶ Currently it appears that submarines participate in large scale exercises twice a year, although extended deployments are few. In the future, PLA Navy submarines can expect to increase the number of deployments made out of local waters.⁶⁷ The exercise in March 1996, referred to above, included a *Kilo* class SS, a *Han* class SSN, and a *Romeo* class SS.⁶⁸

The weaknesses in air defense have an impact on fleet tactical formations. The PLA Navy practices two fundamental types of tactical formations: concentration and

⁶² Johnson.

⁶³ Ibid.

⁶⁴ Patrick E. Tyler, "China's Military Stumbles Even as Its Power Grows," *New York Times*, December 3, 1996, Sec. A2.

⁶⁵ ONI, p. 19.

⁶⁶ Johnson.

⁶⁷ ONI, p. 23.

⁶⁸ Ibid, p. 19.

dispersal. Concentration allows less capable ships to enjoy the air defense umbrella. It also mitigates deficiencies in Chinese command and control. However, dispersal is the likely formation to be used in South China Sea operations. Dispersion in this theater would make detection of the force less likely, and holds the possibility of dividing enemy air forces as they seek out PLA Navy ships.⁶⁹

SUMMARY

The brief history in this chapter, in light of the discussion of doctrine in chapter two, should provide an understanding of how the PLA Navy arrived at its status today. For many years, the PLA Navy served the doctrine of People's War by providing a coastal defense force. As doctrine changed, the Navy attempted to amend its role in the PLA accordingly, but years of neglect, and technological shortcomings make this a difficult task. This chapter also provided a snapshot of today's PLA Navy, its general capabilities, and the nature of operations to which it trains. Today's PLA Navy struggles to convert an aging coastal fleet into a modern blue water navy, capable of quick, decisive strikes. This conversion includes reevaluation of doctrine as well as modernization of the fleet and fleet tactics. People's War Under Highly Technological Conditions is the evolving doctrine which will guide the new fleet. In the PLA Navy today, amongst the many obsolete vessels, there is a nucleus of ships that supply modern capabilities now, but more importantly, these ships are 'stepping stones' to the next generation of warships.

⁶⁹ Chang, p. 368.

Today, these ships, and the exercises they participate in, demonstrate the nature and capability of the current Navy. They also provide clues for future PLA Navy strengths and capabilities.

CHAPTER FOUR: CHINA'S ECONOMIC GROWTH AND POLITICAL GOALS

This Chapter briefly discusses China's rise as an economic power, and its political goals. This background is necessary for a complete understanding of the motivation behind the drive to modernize the PLA Navy. As discussed earlier, the PLA Navy necessarily subscribes to PLA doctrine. The communist party of China and the political leadership provide guidance and direction for military doctrine. The PLA Navy is an instrument of political policy. Meanwhile, the economy is the fuel that makes modernization possible. China's rise as an economic power is fairly obvious, and detailed discussion of its economic growth is beyond the scope of this paper; therefore, the paper will highlight only certain aspects of recent economic growth to underscore the economy's importance to the political leadership, and consequently, to the PLA Navy.

ECONOMIC GROWTH

Lui Huaqing told Robert McNamara, while the former US Secretary of Defense was on a visit to China in late 1994, that one of the obstacles in the way of modernization of Chinese armed forces is the Chinese economy itself, "... if we compete with economic needs, we will be in competition with the economy, and that is not in China's interest."⁷⁰ Chinese leaders understand that the communist party's continued control depends on its ability to sustain continued economic growth. If the standard of living does not continue

⁷⁰ Tyler, "China Revamps Forces With Eye to Sea Claims," Sec. A2.

to improve, the CPC could face the same fate as its counterparts in the Soviet Union and Eastern Europe.⁷¹

The PRC's participation in the world economy is growing both in total value, and importance to the sustenance of the Chinese economy. Approximately forty percent of the PRC's gross national product comes from foreign trade.⁷² The mainland possesses vast natural resources, and with the largest population on earth, has a workforce of immense potential. China's neighboring seas, and EEZs therein, provide a wealth of resources to the nation. Fishery resources are also of growing interest in the South China Sea region. With the increasing size of Asian populations, and the proximity of this food source, this aspect of the sea's importance is rising.⁷³ The South China Sea also has commercial value as an international highway since one fourth of all the world's shipping transits through its lanes each year.⁷⁴

As China's economy grows, so too does its requirement for fuel -- oil. China is the fifth largest oil producer in the world; yet, due to the growing consumption of its population and economy, it became a net oil importer in 1994.⁷⁵ Oil and natural resources which are thought to reside beneath the South China Sea bring interest to that body of water. Although oil fields line the periphery of the region in Indonesia, Brunei, and near southern Vietnam, no oil has been discovered in the South China Sea itself. Estimates of possible reserves vary greatly. If oil is discovered, it is likely to be in very

⁷¹ Sheldon W. Simon, "Alternative Visions of Security in Asia Pacific," *Public Affairs*, Vol. 69, No. 3, (Fall 1996), p. 382.

⁷² *Ibid*, p. 387.

⁷³ Till, p. 47.

⁷⁴ *Ibid*, p. 46.

⁷⁵ Johnson.

deep water, and therefore, very expensive to extract.⁷⁶ It is not surprising that China now looks to the Middle East as a source of oil. There is a proposal to construct an oil pipeline from Kazakhstan to China. In 1995, the Exxon Corporation, the Mitsubishi Corporation of Japan, and the PRC's state oil company announced their intention to study the feasibility of construction of a 4,200 mile gas pipeline from Turkmenistan to the Yellow Sea -- possibly with an underwater spur to Japan! This is a goliath project, estimated at 10 billion dollars. If construction were started now, it would not be complete until early next century.⁷⁷ For at least the next decade, probably even longer, the quickest (and least expensive) way to transport oil from Middle East oil fields to Chinese factories is via tankers over ocean waters.

The common theme and trends are clear: the sea is fast becoming of great economic importance to China. Chinese policy makers claim that a strong naval force is necessary to protect sovereign territory, economic rights, and commercial shipping in the immediate region.⁷⁸

POLITICAL GOALS AND AMBITIONS

The economic and strategic value of the seas adjacent to the PRC cannot be overstated, and this fact is not lost on China. The doctrinal issues and outright quotes by the PLA Navy's former commander (discussed earlier) reflect China's desire to control

⁷⁶ Till, p. 47.

⁷⁷ Geoffrey Kamp and Robert E. Harkav, *Strategic Geography and the Changing Middle East*, (Washington DC: Brookings Institution Press, 1997) p. 140-151.

⁷⁸ Johnson.

these waters. Liu Huaqing is adamant in his assertion that naval power is critical to attaining China's regional ambitions.⁷⁹ Clearly, the PRC desires undisputed control of its adjacent seas.

To lend legitimacy to their extensive claims in neighboring seas, the Chinese draw on history. The PRC argument states that Chinese fishermen traveled the South China Sea in the vicinity of the Spratly Islands as early as 200 B.C. They claim Chinese sovereignty nominally extended down to the islands during the dynastic era, but was never formally asserted.⁸⁰ Other official claims use the voyages of Admiral Cheng Ho in the 15th century as historical references staking Chinese rights to the area.⁸¹ Connecting these historical examples to today's PRC claims to vast ocean regions seems a questionable argument.

In addition to the South China Sea's potential wealth, China has interests in the East China Sea. The East China Sea has promising geological formations that some experts say resemble those of the North Sea. Some sources say potentially 10 to 100 billion barrels of oil may reside in fields under this body of water.⁸² Japan and the PRC both have claims to the Senkaku Islands. (See Appendix A) In May 1996, five Chinese research ships conducted sonar exploration in areas that Japan regards as its seabed.⁸³

⁷⁹ US Congress, Senate, Subcommittee on East Asian And Pacific Affairs of the Committee on Foreign Relations, *The Growth and Role of the Chinese Military*, Hearing. 100th Cong., 1st sess., October 11-12, 1995. Y 4.F 76/2:S.HRG.104-330, p. 35.

⁸⁰ Johnson.

⁸¹ Till, p. 47.

⁸² Nicholas D. Kistof, "Tension in Asia Over Wealth Under the Sea." *New York Times*, May 19, 1996, Sec A1.

⁸³ Ibid.

The Japanese claim that China began to contest Japan's sovereignty in the East China Sea when reports surfaced that the area may include a lot of oil.⁸⁴

China's claims in the South China Sea appear similar in motive and timing to Japan's assertion that China's claims to large areas of the East China Sea came *after* potential reserves of wealth were discovered. Whatever the alleged legitimacy, it is clear that China wants control of these strategic waters, and rights to their natural resources. The Spratly and Paracel Islands in the South China Sea are examples of China's claims, and a source of much friction in the region.

In pursuit of its interests in the region, the PRC's efforts are aggressive and calculated. China awarded drilling rights to a small American oil company, the Crestone Energy Corporation of Denver, in an area roughly 280 miles off the coast of southern Vietnam. In July 1994, the PRC emphasized it will use force if necessary to protect the company's activities.⁸⁵ Coming after the successful naval skirmish in 1988 (mentioned earlier) over similar issues, potential adversaries must conclude this is no bluff.

In July 1994, China sent two warships to blockade a Vietnamese oil rig. The PLA Navy turned back at least one supply ship headed towards the rig.⁸⁶ Another example of the PRC's willingness to employ action is the early 1995 seizure and occupation of Mischief Reef, a small island in an area in the Spratlys claimed by the Philippines.⁸⁷ (See Appendix A) In one sense, the Chinese move to take islands and make its naval presence felt may be viewed as a carefully designed plan for a "late-comer" like the PRC to stake a claim on an island group that is the focus of many such claims by surrounding nations:

⁸⁴ Kistof, Sec A1.

⁸⁵ Shenon, Sec. A1.

⁸⁶ Ibid.

Vietnam, Malaysia, the Philippines, and other Southeast Asian nations.⁸⁸ The PRC claims it seeks peaceful solutions to territorial disputes in the South China Sea. In August 1997, Chinese prime minister Li Peng visited Malaysia for four days of political talks with the Spratly Island dispute topping the agenda.⁸⁹ Again, in talks in September 1997, Chinese negotiators argued the PRC's position on territorial disputes in the South China Sea. In these talks, China firmly asserted its position that the Paracel Islands in the South China Sea are within Chinese maritime borders.⁹⁰ The PRC occupation, and presence of the PLA Navy are realities regional powers must now consider. Employing calculated action has achieved a bargaining position for territorial and economic rights that no talks or diplomacy could have acquired.⁹¹ The PLA Navy is the muscle behind the 'diplomacy.'

Among the most important of the PRC's political ambitions is the reunification of Taiwan. The PRC views Taiwan as a province of the mainland, and desires unification. The PRC desires to resolve this issue itself. It would prefer peaceful means, but China insists it has the right to settle its disputes by any means necessary. In official statements on the Taiwan issue, the PRC refuses to renounce the use of force. It views the United

⁸⁷ _____. "China Mishandles Spratleys Dispute," *China and North Asia Monitor*, Vol. 2, No. 6, June 1995, p. 4.

⁸⁸ You Ji, "The Chinese Navy and Regional Security," *Asian Defence Journal*, September 1995, p. 12.

⁸⁹ Muzi Network, "Spratlys to Top Li Peng Talks in Malaysia," *Lateline - Daily News of the Chinese World*, (Issue No. 538), online edition, under *China News* downloaded from *Yahoo* through *America Online*, August 21, 1997.

⁹⁰ Muzi Network, "China Sticking to Paracel Island Position," *Lateline - Daily News of the Chinese World*, (Issue No. 538), online edition, under *China News* downloaded from *Yahoo* through *America Online*, September 25, 1997.

⁹¹ You, "The Chinese Navy and Regional Security," p. 12.

States Navy as one of the chief obstacles should the requirement to employ naval power arise.⁹²

Another main objective of China's national strategy is to ascend to the status of a great power.⁹³ The October 1997 summit between Presidents Clinton and Jiang Zemin marked an important milestone for the communist regime. It symbolized normalization of relations between the United States and the PRC, and most importantly (in Beijing's eyes), it served as acknowledgment that the PRC has emerged and is now a great economic and political power in the world.⁹⁴

The common theme and trends are clear: the sea is fast becoming of great political importance to China. In order to resolve territorial disputes, and force resolution to the Taiwan issue, a strong navy is necessary. To be a world power that can act as it desires within its seas without regard to the American Pacific fleet requires a strong navy.

SUMMARY

The local seas possess great economic and political value for the PRC. China is staking its claim to large portions of these vast ocean areas, and uses arguable historical precedents to establish its legitimate rights to the regions. Its actions give clues to the PRC's ambitions in Asia -- notably its claims to areas of local seas and archipelagos. Other nations also have legitimate long-standing legal claims to these. Some argue that

⁹² A source, high ranking officials of the Taiwanese Mission to the United States, interview by author, Washington DC, November 13, 1997.

⁹³ US Congress, House, Committee on National Security, *Security Challenges Posed by China*, p. 44.

⁹⁴ _____. "Jiang Scales Summits," *China and North Asia Monitor*, Vol. 4, No. 12, (December 1997) p. 2.

China became interested in the area only after potential for wealth was discovered. It is clear that the PRC has commercial and economic interests in the neighboring seas, and intends to exercise both strategic control of the regional waters, and rights to the region's natural resources. The PRC has a political interest in control of the seas as well. This includes the ability to resolve territorial disputes and the Taiwan reunification issue -- without foreign intervention of any kind. Underlying all this is another ambition: the pursuit to rise in the world as a great power.

CHAPTER FIVE: MODERNIZATION OF THE PLA NAVY

The degree to which the PLA Navy was impressed by the performance of Western technology in recent conflicts (e.g., Falklands, Persian Gulf War) is great. After watching these harbingers of future war between uniformed forces unfold, the PRC leadership viewed its fleet as inadequate to the tasks of protecting the homeland, and controlling the sea inside the first and second island chains.⁹⁵ In light of the political goals noted above, it follows that a great power, desirous of, among other things, control of vast local seas, should have a great modern navy. Hence, the recent naval modernization ongoing in China today. This chapter provides a review of the PRC's efforts to upgrade its fleet.

NOT JUST THE FLEET; BUT THE WHOLE MILITARY-INDUSTRIAL COMPLEX

Deng Xiaoping viewed defense modernization in broad terms, and recognized it as a complex, multifaceted process. He articulated the military modernization program as the fourth of four grand-scale modernizations for China. In the short-term it was to improve the current combat effectiveness of the PLA forces. In the long-term it was to create a self-sustaining defense *establishment*. The goal then, as today, is to build the

⁹⁵ A source, high ranking officials of the Taiwanese Mission to the United States, interview by author, Washington DC, November 13, 1997.

defense establishment necessary for a major power in world politics.⁹⁶ Some areas of this establishment are achieving high levels of sophistication: radar, surface-to-surface

⁹⁶ Godwin, p. 106.

missile production, cruise missiles, and nuclear warheads. Great emphasis is being placed on nuclear powerplant production for nuclear submarines, perhaps to correct deficiencies noted above. Areas where China is still substantially weak are aircraft power plants, gas-turbine engines for naval applications, and aircraft materials. Clearly the program was designed not simply to modernize, but to create a military-industrial complex capable of research, development, testing, evaluation, and production within China.⁹⁷

In the past six years, China's shipbuilding program has focused on developing destroyers, frigates, anti-submarine warfare (ASW) capability, ship defense systems, medium lift amphibious ships, resupply ships, and coastal patrol craft.⁹⁸ Chinese shipyards built eight *Luda* class destroyers, 21 *Jianghu* class frigates, 40 *Romeo* class submarines, and numerous other craft. The table in appendix C provides a summary of Chinese shipbuilding efforts. Since 1978, shipyards at Wuhan, Hudong, and Dalian manufactured sales-quality frigates. They sold five *Jianghu* class frigates: one to Bangladesh, and four to Thailand.⁹⁹ Built in the Hudong shipyard, the *Jiangwei* class frigates (first sea trials were in 1991) are nearly totally of indigenous Chinese construction.¹⁰⁰ Two *Song* class SSs were under construction in the Wuhan shipyards as of the end of summer 1997. The first *Song* class SS was placed in operational service early in 1997.¹⁰¹ Hundreds of Russian technicians are again at work in China in many military-technical fields. The transfer of knowledge serves to assist the PRC in its

⁹⁷ Godwin. p. 106.

⁹⁸ CNA, p 13.

⁹⁹ Johnson.

¹⁰⁰ *Jane's Fighting Ships 1997-1998*. p. 120.

¹⁰¹ Jane's Information Group, "Russia Helps China Take New SSNs into Silent Era," p. 13.

development of its own base of domestic production. It is unlikely that China will replace domestic production with foreign purchases.¹⁰²

EFFORTS AND PROJECTS IN WORK

Aircraft Carriers and Surface Combatants

Among the naval construction projects is an aircraft carrier for the PLA Navy. In 1989, China bought a medium sized Australian carrier as scrap. Study of this vessel, combined with lessons learned from the recent construction of a 120,000 ton tanker for Norway, may translate to knowledge for construction of an indigenously produced aircraft carrier.¹⁰³ At current rates of modernization and technological development, the PLA Navy will be able to indigenously design and build a blue water aircraft carrier by 2020.¹⁰⁴ This date is a US estimate -- Chinese leaders estimate that it will take fifty to sixty years for the PLA to reach a level of technological parity with the West.¹⁰⁵ Another US source, the Office of Naval Intelligence, projects that China will be able to field its first aircraft carrier by 2010.¹⁰⁶ The dates vary significantly -- perhaps due to uncertainties that stem from the technological difficulties China faces in this project. But the PLA Navy aspires to eventually establish two battle groups centered on the aircraft carrier. Chinese diplomats suggested this aspiration at the 9th Asian Pacific Round Table

¹⁰² US Congress, Senate, Subcommittee of East Asian and Pacific Affairs of the Committee on Foreign Relations, *The Growth and Role of the Chinese Military*, p. 33.

¹⁰³ Johnson.

¹⁰⁴ US Congress, Senate, Subcommittee of East Asian and Pacific Affairs of the Committee on Foreign Relations, *The Growth and Role of the Chinese Military*, p. 62.

¹⁰⁵ Johnson.

¹⁰⁶ ONI, p. 16.

in Kuala Lumpur in June 1995.¹⁰⁷ As they noted at the conference, it is only a matter of time before China possesses aircraft carriers.

Another project of great importance to the PLA Navy is the effort to increase blue water operations proficiency as the fleet moves further away from its coastal defense role, and the mainland's shores. Two *Sovremenny* class destroyers purchased from Russia in 1996, and scheduled for delivery to the PLA Navy in late 1997, should contribute to this capability.¹⁰⁸ Indigenous production, however, is more important to the PRC, and on that front, new classes of ships are being designed and produced. *Luhu* class destroyers, *Jiangwei* class frigates, and *Dayun* class supply ships, all made in China will all contribute to a much more modern and capable open ocean fleet.¹⁰⁹ Although the *Luhu* destroyers are built in Chinese shipyards, their gas turbine powerplants will come from the Ukraine.¹¹⁰ The relatively high number of tankers and supply ships noted in appendix B reflects the new emphasis on blue water operations.

Weapon systems onboard the PLA Navy's warships are also receiving much attention in the modernization effort. The centerpiece of the *Luda* class upgrade is the combat direction system called *Traitement Automatique et Visualization Tactique* (TAVITAC) by France's Thomson CSF. TAVITAC includes four operator consoles and one tactical summary console. Each console can track 16 to 32 targets automatically.¹¹¹ The *Vega II* fire control system, also built by Thomson CSF, integrates with the TAVITAC system and can track one air and two surface targets simultaneously while scanning for other targets. The *Vega II* console has control of small anti-air and 100

¹⁰⁷ You, p. 13.

¹⁰⁸ *Jane's Fighting Ships 1997-1998*, p. 118.

¹⁰⁹ US GAO, p. 20.

¹¹⁰ *Jane's Fighting Ships 1997-1998*, p. 118.

millimeter main battery guns. There is a long range console that controls torpedoes and the C-801 surface-to-surface (replacing the older *Silkworm*) missiles.¹¹²

Submarines

The submarine will become the capital ship of the 21st century.¹¹³ Submarines are important to the PLA Navy for two primary reasons: First, at the tactical level, it expects a strong conventional submarine force with long distance capabilities can achieve a combat edge over neighboring countries which do not possess sophisticated ASW capabilities, or even a submarine force of their own. Second, at the strategic level, it believes the nuclear submarine fleet is the most reliable method to deter a US nuclear strike by presenting a credible second strike capability in the event of a nuclear exchange.¹¹⁴ Judging by the size of the current submarine force (see Appendix B) and efforts to modernize it, submarines remain the PLA Navy's most important combatants.¹¹⁵

Modernization of the submarine force does not equate to an all nuclear-powered fleet: the PLA Navy places significant emphasis on its diesel-electric submarines. In addition to the four *Kilo* class submarines purchased from Russia (discussed above) the

¹¹¹ Bussert, p. 53-54.

¹¹² Bussert, p. 53-54.

¹¹³ Shen Zhonchang, Zhang Haiyin, and Shou Xinsheng, "21st Century Naval Warfare," of *Chinese Views of Future Warfare*, (Washington DC: National Defense Univ., GPO, 1997) p. 263.

¹¹⁴ You, p. 12.

¹¹⁵ The relative importance of the submarine force was also noted in US Congress, Senate, Subcommittee of East Asian and Pacific Affairs of the Committee on Foreign Relations, *The Growth and Role of the Chinese Military*, p. 35, and ONI p. 19-29.

PLA Navy may eventually purchase more than twenty of these ships.¹¹⁶ It is quite possible Chinese engineers may begin the process of reverse-engineering the systems onboard in attempts to produce them indigenously; however, such efforts are not likely to be successful until after 2000.¹¹⁷ *Ming* and *Song* class SSs, indigenously produced, are replacing the older Soviet *Romeo* class SSs. China introduced its first *Song* class SS in 1994, and expects to launch two a year from 1998 on.¹¹⁸ *Song* class submarines are expected to be the first Chinese submarines with submerged launch anti-ship cruise missile capability.¹¹⁹

Far from being neglected, or assigned second class status to conventional submarines, China places great importance on its nuclear fleet SSNs and SSBNs as well. A new class of SSBNs (on the drawing boards as the *Type 94*) that will carry 16 *Julang-2* submarine launched ballistic missiles (SLBM) is expected to enter service soon after the year 2000. The *Julang-2* SLBM's range is estimated between 4,000 and 5,000 miles, and could potentially give China its second strike capability against the United States. The *Type 94* SSBN will be the largest submarine ever produced in the PRC. Construction of this vessel will take place in the Bohai shipyard.¹²⁰ The Chinese are receiving Russian assistance on the *Type 93* SSN (also on the drawing boards) and *Type 94* SSBN. Hullcoating for silencing is among other technological advancements being introduced to

¹¹⁶ US Congress, Senate, Subcommittee of East Asian and Pacific Affairs of the Committee on Foreign Relations, *The Growth and Role of the Chinese Military*, p. 31. This projected figure also noted in _____, "China Navy Called Distant Threat," *Navy Times*, November 6, 1995, p. 30.

¹¹⁷ _____, "China Navy Called Distant Threat," *Navy Times*, November 6, 1995, p. 30.

¹¹⁸ *Jane's Fighting Ships*, p. 115.

¹¹⁹ ONI, p. 20.

¹²⁰ US Congress, Senate, Subcommittee of East Asian and Pacific Affairs of the Committee on Foreign Relations, *The Growth and Role of the Chinese Military*, p. 35. See also ONI, p. 21.

the Chinese. The *Type 93* SSN is similar in design to the Russian *Victor III* SSN. First launch is expected early in the next decade. These two classes will replace the *Han* SSNs and *Xia* class SSBN respectively.¹²¹

SUMMARY

As indigenous production rises, reliance on foreign technology will diminish -- a mark of a truly great world power. The PRC's effort to modernize its fleet is part of a long range plan to establish a whole military-industrial complex within China. It seems there can be no question that the modernization of its fleet is the source of great technological and industrial activity within China. The modernization efforts summarized above are evidence of this fact. Further evidence is the financial resources the PLA demands as it upgrades to a professional, modern force. Although (as noted earlier) exact numbers are difficult to come by, it is clear that the PLA budget is growing.¹²² According to testimony at a hearing before the Senate Subcommittee on East Asian and Pacific Affairs of the Committee on Foreign Relations, in 1994 the PLA budget rose 150 percent from its 1989 level, and is estimated to exceed 200 billion dollars by 2000.¹²³ Another estimate of climbing PRC military budgets indicates the PLA budget increased 60 percent between 1989 and 1993, and between 1993 and 1994 alone, the budget increased 22 percent.¹²⁴ Whatever the specific increases, the trend is clear:

¹²¹ Jane's Information Group, "Russia Helps China Take New SSNs into Silent Era," p. 13.

¹²² US Arms Control and Disarmament Agency, p. 42.

¹²³ US Congress, Senate, Subcommittee of East Asian and Pacific Affairs of the Committee on Foreign Relations, *The Growth and Role of the Chinese Military*, p. 29.

¹²⁴ Johnson.

the PRC is increasing its military budgets annually, and the modernization is one of the requirements driving resources to the PLA.

The fleet is the beneficiary of many of the resources diverted to the PLA. This chapter summarized some specific projects in work to modernize the navy. They are achieving their goals, albeit slowly. In recent years, Central Intelligence Agency analysts have found “pockets of excellence” in some of China’s armed forces, where elite units are obtaining better training and weapons for sophisticated mobile warfare.¹²⁵ Still, there are challenges ahead for the PLA Navy. The small number of anti-air warfare capable ships, and inadequacies in their systems has limiting implications on the number of effective task forces the PLA Navy can field.¹²⁶ The US Department of Defense says that the PRC is fifteen years away from developing a modern sustainable force projection capability with command and control, aerial refueling, and possibly an aircraft carrier.¹²⁷

Whatever the measure; numbers on budget ledgers in offices, rivets on bulkheads in shipyards, or microchips on silicone cards in laboratories, the PLA Navy is clearly the beneficiary of a far-reaching modernization effort. As the strength of the PLA Navy burgeons, China’s ability to control its corner of the world’s oceans without foreign intervention will increase -- another mark of a truly great world power.

¹²⁵ Patrick E. Tyler, “China’s Military Stumbles Even as Its Power Grows,” Sec A1.

¹²⁶ Chang, p. 368.

¹²⁷ Simon, p. 388.

CHAPTER SIX: FUTURE IMPLICATIONS

“Power comes from the barrel of a gun.”

- Mao Zedong

“Our country currently does not pose a threat to any other country, and it will not do so even when it is fully developed and when its overall national strength has increased. China has always pursued an independent foreign policy of peace. It is diametrically opposed to both hegemonism and power politics in any form, and never seeks hegemony.”

- Qiao Shi¹²⁸

The Chinese economy is growing, and the PLA Navy’s modernization is in progress. These increases in the PRC’s might will no doubt have impact on its ability to realize its aspirations. This in turn raises questions about the future. What kind of navy will the PLA Navy be? What will be its oceanic designs? Will the PRC invade Taiwan? Will the PLA Navy be able to militarily fulfill the nation’s political ambitions? Is the PLA Navy a near or long term threat, or a threat at all to the American Seventh and Third fleets? Observation of the Chinese military modernization and PLA Navy exercises reveals clues. Additional hints can be found in what is known of doctrine, and the nation’s political ambitions. The two quotes above illustrate how confusing this reconciliation can be. On the one hand, China is a communist nation, steeped in tradition

¹²⁸ Edward Cody, “China Not a US Rival, Beijing Official Says Opposition Expressed to Power Politics in Asia,” *Washington Post*, January 18, 1997, Sec. A26. Qiao Shi is chairman of the National People’s Congress Standing Committee, and is a senior member of the Communist Party Central Committee. These remarks were made in January 1997, in an interview with *China Information*, a monthly magazine.

and attachments to Mao and his doctrine. On the other hand, the current leadership sends signals such as the message in Qiao Shi's remarks. China stands firm on its territorial disputes in the region, and has demonstrated willingness to use its navy if necessary to enforce the nation's position; yet, claims it seeks peaceful resolution to its conflicts with neighboring countries. This chapter attempts to explore future goals of the PLA Navy, and as seen earlier in the paper, these are tied to the political ambitions of the PRC.

GREEN OR BLUE WATER NAVY?

What type of navy will the PLA Navy be in the 21st century? To answer this, roles, missions, doctrine, and observations of exercises and type ships employed in the fleet provide clues. Specific actions with respect to territorial claims in local seas, the Taiwan reunification issue, and oceanic trade routes also hint to the future direction of the PLA Navy.

Michael Swaine, research director of the RAND Center for Asia-Pacific Policy, observes that instead of building a military aimed at the US as an adversary, China's armed forces are being tailored to handle limited, short duration conflicts along China's periphery, including economically important maritime areas.¹²⁹ David C. Johnson also agrees in his analysis that the nature of the force, considering the types of ships the PLA Navy is procuring, is ideal for two basic employment objectives: Rapid deployment, and

¹²⁹ Michael D. Swaine, "Don't Demonize China: Rhetoric About Its Military Might Doesn't Reflect Reality," *Washington Post*, May 18, 1997, Sec. C1.

long distance patrol.¹³⁰ The nature of exercises observed recently (discussed earlier) supports these arguments.

All three fleet areas appear to be forming rapid combat action groups. Most of the *Yuliang* and *Yukan* class amphibious warfare ships have been attached to the South Sea fleet.¹³¹ The South Sea fleet has been observed practicing island defense as discussed earlier. Also mentioned earlier, the PRC has significant territorial disputes in the South China Sea, most notably the Paracel Islands and the Spratly archipelago. There is potential oil wealth in each of these island groups, and certainly they provide strategic footholds in an economically important area of the world. The exercises, type ships, and forces augmenting the South China Sea fleet are ideally suited to fulfill a mission of dominance in these seas.

It seems the PRC wants undisputed supremacy in its corner of the world. Liu Hauqing's quotes (noted earlier) make this quite clear. Specifically, the areas in question are the South China Sea, and the seas extending to the second island chain. The magnitude of the efforts to modernize its fleet (discussed in chapter five) give credence to the gravity of China's intent to fulfill this goal. For neighboring nations, this gives China a powerful 'bargaining chip' that must be considered when engaging in negotiations to settle any maritime dispute with the PRC. China's rise as a formidable sea power, and the demonstrated willingness to use that sea power has caused Southeast Asian nations to draw together defensively. ASEAN boldly backed the Philippines when the Chinese

¹³⁰ Johnson.

¹³¹ Till, p. 50.

proposed bilateral talks over Mischief Reef.¹³² Defensive alliances such as this may become the most effective means for local nations to deal with China. China recognizes this fact, and in turn finds it another reason why it must increase the strength of its navy. Except for North Korea, the PRC has no allies in the region. The implication for future foreign fleets is that when sailing in these waters, the PLA Navy will represent a potent adversary as guardian of these seas.

An invasion of Taiwan today would be an effort of monumental proportion. The Taiwan Strait is three times the width of the English Channel, weather is generally adverse, and study of the topography reveals mostly unfavorable landing sites to invaders. One source estimates that for an invasion of Taiwan to be successful, up to 600,000 troops would be necessary.¹³³ The PLA Navy does not have near the number of ships necessary to meet the logistical requirements of such an assault.¹³⁴ An outright invasion is not likely to occur.

The doctrine of People's War is essentially a defensive one. Its modifications (Chapter two), although more aggressive, also have a defensive nature. The areas where investment is going in today's PLA Navy: aircraft; modern destroyers and frigates; submarines, significant quantities of both nuclear and diesel types; the large quantities of very capable small patrol craft; and antishipping missiles, all indicate a force tailored to dominate the regional seas. (Chapter five) This is a force capable of enforcing a commercial blockade in local waters, or threatening inhabitants of local islands.¹³⁵ All this hints of a green water navy that dominates local seas.

¹³² Arthur Waldron, "Dragon Growling," *National Review*, Vol. 47, Issue 14, July 31, 1995, p. 44.

¹³³ McVadon, p. 252.

¹³⁴ Ibid.

¹³⁵ McVadon, p. 252.

The potential need to import vast quantities of oil from the Middle East to fuel the growing economy also has future implications for the PLA Navy. As discussed earlier, land routes and pipelines are not viable transportation methods. Estimates vary, but decades may pass before a pipeline can provide sufficient quantities of oil to fuel Chinese industry. The sea remains the quickest and least expensive method. This is where the PLA Navy comes into the picture. There is speculation that China's fleet will eventually deploy to the Indian Ocean in part to assure the security of oil supplies from the Persian Gulf region.¹³⁶ China and India historically have not enjoyed the best relations. In the future, Chinese naval deployments to the Indian Ocean may provoke some sort of response from India, itself a formidable naval power, and the world's second most populous nation.¹³⁷ The requirement to protect shipping in the far reaches of the Indian Ocean hint of a need for a blue water navy.

In the background of the issues above is the construction of tomorrow's PLA Navy. This was discussed in detail in chapter five. Construction indicates great emphasis on the submarine fleet. Significantly, a large portion of tomorrow's submarine force will be conventionally powered diesel submarines, ideal for shallow water and coastal operations. The Diesel submarine combined with the surface fleet's potent antishipping capability indicates a force that will be able to enforce naval blockades, and threaten any ship, combatant or merchant, that enters proximity of the PLA Navy's fleet. In the literature on development of an aircraft carrier for the PLA Navy, most sources indicate that two battle groups centered on the carrier are the most the PLA Navy aspires to. Continuous worldwide coverage with two carrier battle groups is impossible, but

¹³⁶ Kemp and Harkav, p. 130.

such a carrier force would quite ably monitor the region's seas. This all hints again of a green water fleet that will effectively control the local waters. But a note here, the ships (aircraft carriers, nuclear submarines etc.) required for this mission, by default, are blue water capable. In Liu Huaqing's words, "... a fleet that will effectively control the seas out to the second island chain."

Supply ship construction, purchase of the *Sovremenny* class destroyers, introduction of the *Luhu* class destroyers, and modernizations to the *Luda* class destroyers indicate capabilities (and intentions) to conduct blue water operations. Certainly the investment observed in the nuclear submarine fleet indicates aspirations of open ocean capability. The Philippine Sea is no small body of water to protect; these vessels will be necessary. Additionally there is now a need to conduct extended operations over open oceans as the PLA Navy may one day need to protect Chinese interests in shipping from the Middle East.

Another reason for the need for a blue water navy is the American Pacific Fleet. As noted in the March 1996 exercise, the PRC recognizes power, and the presence of power, in the form of the Nimitz Battle Group, caused the PRC to refrain from its dangerous intimidation tactics. The PLA perceives the United States as a potential threat. A November 1993 symposium of top PLA military leaders concluded that "... the major target of US hegemonism and power politics is China ... to force China to change the course of its ideology."¹³⁸ The US National Security Strategy (NSS) publishes one

¹³⁷ Ibid.

¹³⁸ US Congress, Senate, Subcommittee of East Asian and Pacific Affairs of the Committee on Foreign Relations, *The Growth of the Chinese Military*, p. 32.

national goal, among others, as “... to promote democracy abroad.”¹³⁹ It is clear that the PRC is still a communist government, and Taiwan is a democracy living in the shadow of the huge mainland. US national interests in the region call for a military presence in that part of the world.¹⁴⁰ This can only fuel the PRC notion that the United States Navy is the PLA Navy’s obstacle to naval supremacy, and therefore, PRC influence in the region.

NEAR OR LONG TERM THREAT?

In the near term, the PLA Navy is not a threat to the US Pacific Fleet. US naval power is greater than that of the PRC. But the balance may tip in the PLA Navy’s favor in the next century if their modernization and growth continues unchecked. While the PLA Navy works overtime to become a world class naval power, capable of dominating the region, the United States’ presence in Asia has been diminishing: bases in the Philippines have closed, and the size of the American Navy decreases as military cutbacks continue. While the American military budget decreases, the defense load shifts more and more to ASEAN nations. China is very much aware of all this.¹⁴¹ To exacerbate the issue of decreasing American military presence in the region, some experts note American policy in Asia is becoming less consistent.¹⁴² Meanwhile

¹³⁹ The White House, *A National Security Strategy for a New Century*. (Washington DC: US GPO, May 1997) p. i.

¹⁴⁰ Institute for Strategic Studies, *Strategic Assessment 1997*, (Washington DC: National Defense Univ. US GPO, 1997) p. 55-56.

¹⁴¹ Yu Qufen, “The International Military Situation in the 1990s,” in *Chinese Views of Future Warfare*, (Washington DC: National Defense Univ., GPO, 1997) p. 74.

¹⁴² Simon, p. 381. Note also the following quote from Gerald Segal, “China Takes on Pacific Asia,” *Jane’s Defence ‘96: The World in Conflict* (London: Jane’s Defence Magazines, 1996) p. 68: “Observers of US policy in 1995 will have already noted that Washington’s policy in East Asia in general, and towards China in particular, is far from consistent. The divisions within various branches of the administration, not to mention the Congress, have been part of the problem in Sino-US relations.” James Schlesinger also

territorial disputes simmer. It is not surprising, in the face of this backdrop, that there is an arms build-up among the nations in the region.¹⁴³ This all adds to instability and potential for conflict as countries may decide they have the capability to press their claims.¹⁴⁴ Although no threat to the US in the near term, the PLA Navy's rise as a regional naval force of considerable power may soon add to instability in the region. Right now, the US fleet has the power to keep the regional military balance stable.

If China is no immediate threat to the US, what about its Asian neighbors, for example, Taiwan? It is in the PRC's interest to resolve the Taiwan dispute peacefully, but as noted earlier, a great power needs to possess the right to employ force if necessary. The PLA Navy, again, is the muscle behind the 'diplomacy.' The doctrine meshes with observations: since outright attack is impossible, the PRC believes it can wear down Taiwan into submission over time. As noted earlier, intimidating naval exercises are timed to take place near political events inside Taiwan. These are designed to remind the Taiwanese that the mainland has not forgotten them. Over the years, the Taiwan Strait and the US Pacific Fleet have been the chief obstacles to military means of unification.

In March 1996, when the United States sent a second carrier battle group to the region during the PLA exercise aimed at intimidating Taiwan, the PLA Navy realized its current ineffectiveness in the face of such naval power. It was forced to back down.¹⁴⁵ This reinforced the peaceful resolution approach. But, in the future, as the PLA Navy's

critiques the foreign policy in "Fragmentation and Hubris: A Shaky Basis for American Leadership," *The National Interest*, No. 49, Fall 1997, p. 1-9. Robert B. Zoellick, a former Undersecretary of State writes about absent US leadership in Asia in "A Larger Plan for Asia," *Washington Post*, January 6, 1998. p. 13.

¹⁴³ Simon, p. 381, and US GAO, p. 12.

¹⁴⁴ US GAO, p. 12.

strength increases, this may not always be the case. In the future, a powerful PLA Navy may be able to keep the US Navy at bay while the PRC resolves the issue by its own means.¹⁴⁶

In addition to its economic interests in the area, the United States has long pursued a policy discouraging use of arms to settle disputes. In June, 1962, Mr. John Moors Cabot, United States Ambassador to Poland, delivered a firm message to the Chinese communist ambassador, Wang Pang-nan: the United States will not support any attempt by the Chinese Nationalist Government to land forces on the mainland, nor will it tolerate use of force by the PRC to attack Taiwan.¹⁴⁷ The interesting note about the 1962 message is that it sought primarily to restrain *Taiwan* from using force against the mainland! Thirty six years later that policy remains unchanged, and the US now cautions the mainland to carefully reconsider use of its new found strength against Taiwan. In the long term, American policy in the region has been consistent, and its military presence in Asia has been a stabilizing force. Today, experts note there are signs of inconsistencies (discussed above) in American policy in Asia, and the American military presence is diminishing as US military budgets decrease. This may ultimately lead to destabilization in the region as local nations attempt to make up the leadership and military voids.

In the long-term, as noted above, it will take at least a decade for China to develop military capability to implement its local war approach to doctrine. At that, ten years from now, China will still have little or no capability to mount effective operations

¹⁴⁵ McVadon, p. 275. McVadon provides an excellent insight to this issue and reports comments of a PLA Navy Officer on this subject.

¹⁴⁶ A source, high ranking officials of the Taiwanese Mission to the United States, interview by author, Washington DC, November 13, 1997.

¹⁴⁷ E.W. Kenworth, "US Assures Red China It Wouldn't Back Attack," *New York Times*, June 27, 1962, Sec. A1.

outside its own corner of the Asia-Pacific region.¹⁴⁸ Other estimates, noted above, vary, and some calculate it will take longer than ten years for the PLA Navy to field a force equivalent to the US Pacific Fleet. For the time being, despite a generally diminishing military presence in the Far East, the US Navy maintains its advantages over the PLA Navy in strength and technology. As Ambassador Lilley estimated at the House Committee on National Security in his testimony in March 1996, the PLA Navy seeks dominance in local seas, and in the near term will not be a great threat “... outside its own corner of the Asia-Pacific region.”¹⁴⁹ The PRC wants undisputed control inside its corner of the world. It may take time to replace the US Navy, but nothing short of sea control in the region is the PLA Navy’s goal. To meet the need to protect Chinese shipping around the world’s oceans is a long-term need that will eventually come with the modernization of the fleet. Herein lie potential long-term implications for the United States -- the US has interests in the Far East.

¹⁴⁸ Reported by Ambassador Lilley to the Committee on National Security in US Congress, House, Committee on National Security, *Security Challenges Posed by China*, p. 44.

¹⁴⁹ Reported by Ambassador Lilley to the Committee on National Security in US Congress, House, Committee on National Security, *Security Challenges Posed by China*, p. 44.

SUMMARY

The exact nature of the future PLA Navy is not precisely certain. What is certain is the desire for a green water navy, capable of supreme control of local seas, and the need for a blue water navy, capable of projecting Chinese power in the open oceans to protect Chinese commerce. Equally sure, the modernization is in progress. Future implications of the PLA's new power are fairly clear. China expresses the desire to resolve regional disputes peacefully, but has demonstrated willingness to employ its naval power to achieve political ends. Power comes from the barrels of the PLA Navy warships' guns while Chinese diplomats profess aversion to power politics. In the near term, the rise in the PLA Navy's strength may embolden the PRC to use force in future disputes. This causes concern in ASEAN nations. It is not surprising that there is a general increase in military expenditures in Asian nations. This, in turn, spells short-term instability for the region if there is no check to the military balance. Here lies the near-term implication for the United States Navy: it is a stabilizing force in the region since no other nation can match its power -- now. In the long-term, if unchecked, the PLA Navy may one day be capable of keeping the Seventh and Third fleets at bay while it exerts sea control over the region's waterways.

CHAPTER SEVEN: CONCLUSION

This paper attempted to annotate observations of the capabilities of today's PLA Navy, and the exercises it engages in for training. These observations, along with the overview of the PLA Navy's modernization efforts, provide clues to the future direction of the PLA Navy. The PLA Navy is an extension of the PLA, which in turn is an instrument of communist party politics and foreign policy. The discussion of doctrine and political ambitions throughout the paper was necessary in order to understand future implications of the PRC's rising naval power. This paper illustrated the growing need to strengthen the PLA Navy as China's economy and political aspirations grow.

The PLA Navy's modernization is in progress. Chinese efforts to convert the aging coastal defense fleet into a professional, modern navy are serious. Already the PLA Navy possesses formidable power at sea, and is gradually obtaining the legs to project power over great oceanic distances.

From the PLA Navy's rise in strength comes an increase in China's ability to control the seas in the region. It is clear that the PRC desires undisputed supremacy in the local seas. In this sense, it aspires to create a green water navy, capable of unchallenged sea control over the waters within the second island chain. Once it achieves this, the PRC will be free to exert its power to resolve regional disputes without any intervention from outside powers. It intends to use peaceful means to accomplish

resolution of conflicts within the region; but, as a great power, (another national ambition), it must have the ability and the right to resolve disputes by any means it deems necessary.

China needs a blue water fleet capable of protecting its economic and shipping interests wherever in the world they may be. In the region, its navy must offset the power of the navies of the ASEAN nations and Taiwan. Outside the region, it must consider the naval power of the Indian Navy, and other fleets as it protects Chinese shipping in the Indian Ocean and beyond. Lastly, the PLA Navy must contend with the American fleet. China seeks to neutralize the Pacific Fleet, or at least, keep it at bay, while the PRC conducts its own business within its own sphere. The modernization in progress now is slowly producing a blue water navy capable of achieving these goals.

What can, or should, the United States do in the face of the mainland's growing potential to enforce a military resolution to the cross-strait issue, and other territorial disputes in the region? There is little the United States can do to stop events inside the PRC. Given China's sovereignty, and its rise in global trade, it is not unreasonable that it should be investing in its military development. The issue for the United States is not how to stop this development, but how to deal with it.¹⁵⁰ The United States should closely monitor the PLA Navy, and ensure the Pacific Fleet remains superior to it.

In pursuit of its national interests in the Far East, the US must remain engaged with the PRC. Likewise, the US has an interest at stake in supporting Taiwan, which is dedicated to democratic ideals and open markets. To be certain, the US has interests in the region, but economic trade and barter benefits all participants in the global economy.

¹⁵⁰ Johnson.

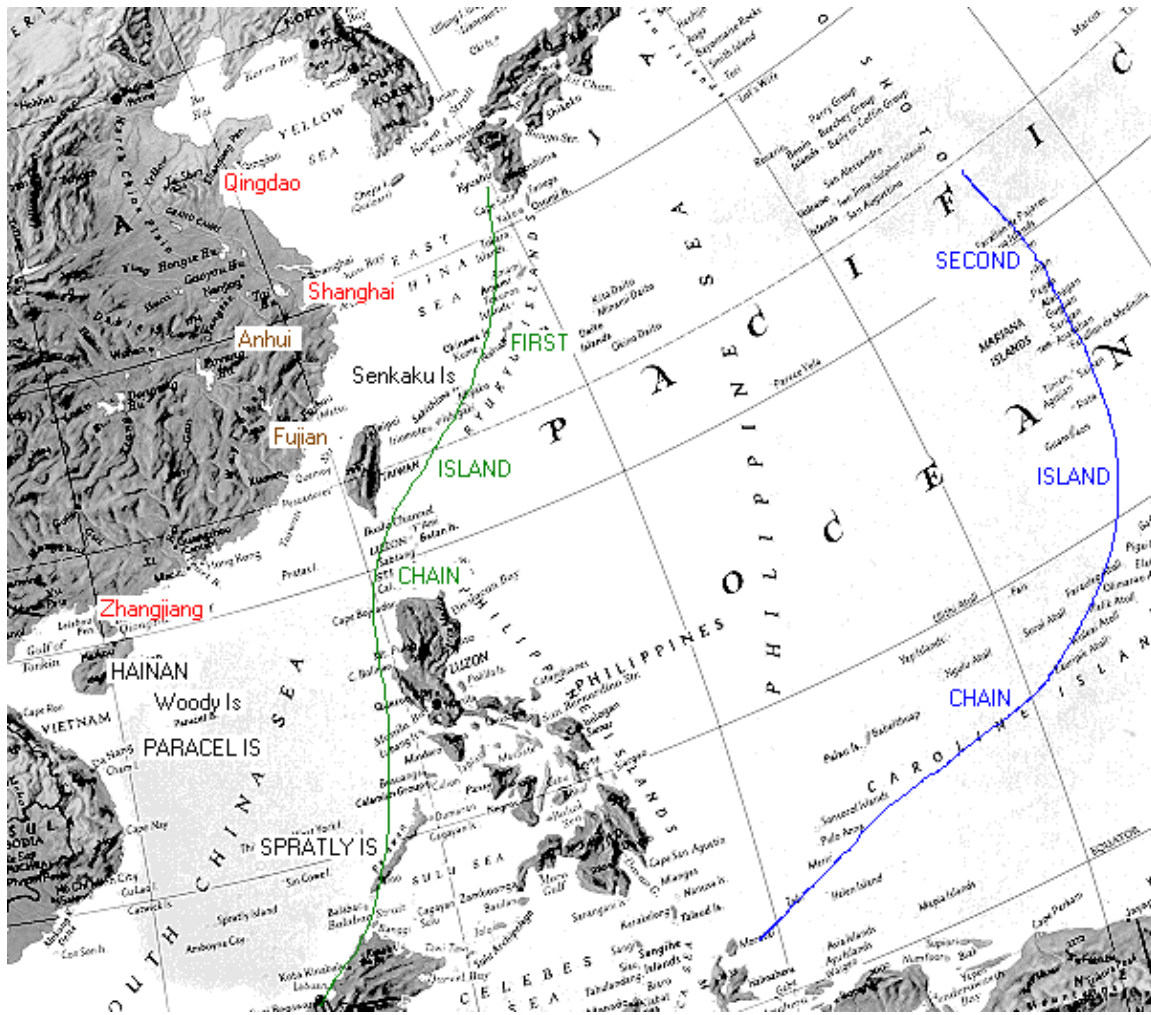
The United States must continue to advocate its long-standing conviction that only peaceful resolution of territorial and political disputes is acceptable to the international arena. US policy in the region must be consistent, resolute, and serve no other motive than these ideals.

In order to do that, the US Navy must remain the deterrent to the PLA Navy it has been for a generation. Thankfully, in spite of budget reductions, the American fleet still possesses the sea control assets to reign unchallenged in the open seas -- today. This is the stabilizing military force in the region. But, as the PLA Navy seeks to expand control of the open oceans, US naval doctrine emphasizes littoral regions while the American military presence in Asia shrinks. The US Navy must maintain its capability to control the open oceans in any and all corners of the world if the country's policy of peace is to work.

The American fleet must maintain the capability to track and monitor the PLA Navy's surface ships and submarines whenever they are underway. It must also maintain its technological and capability advantages over the PLA Navy. The US Navy already possesses assets and weapons that are equal to this task. For some platforms, redesign and replacement may be necessary, for others, upgrades may not require such great expenditure of resources. As noted above the US fleet must be able to neutralize the PLA Navy's submarine force. It must be able to do the same against the PLA Navy's antishipping combatants. These are the capabilities and details that the PRC understands. As long as the American Pacific Fleet remains superior to the PLA Navy, the PRC is likely to seek peaceful resolutions to political differences.

The arrival of the PLA Navy is not a seismic event, and confrontation with it is not likely. In fact, today there are many signs that peaceful resolution to various political issues is the most likely outcome. The recent travels by Jiang Zemin and Le Peng often bring the message that China desires to join in western trade and friendship. China has made many overtures in recent years that can only be taken as honest attempts to join the world's community of nations. This of course, is a political and diplomatic process, and for now, sea control is the means and muscle behind the diplomacy.

APPENDIX A: CHARTS



PLA Navy’s “Corner of the World”

Source: National Geographic Atlas of the World (rev. 6th ed.); and Huang, p. 21





Spratly Islands

Source: Magellan Online Maps

Source: (Previous Page) National Geographic Atlas of the World (rev. 6th ed.)



Indian Ocean routes to the Middle East

Source: Magellan Online Maps

This chart illustrates the some of the vast seas China will need to monitor with its blue water fleet as it protects PRC merchant shipping from the Middle East.

APPENDIX B: THE PLA NAVY

STRENGTH OF THE FLEET¹

<u>Type</u>	<u>Active</u> <u>(Reserve)</u>	<u>Building</u> <u>(Planned)</u>
Aircraft Carrier	0	(1)
SSBN	1	(1)
SSB	1	-
Fleet Submarines (SSN)	5	1
Cruise Missile Submarine (SSG)	1	-
Patrol Submarines (SS)	54 (32)	3 (2)
Destroyers (DDG)	18	(1)
Frigates (FFG)	35	2
Fast Attack Craft (PGG)	129 (56)	3
Fast Attack Craft (Gun)	105 (182)	-
Fast Attack Craft (Patrol)	113	6
Patrol Craft	14	2
Minesweepers (Ocean)	27 (7)	-
Minesweepers (Coastal)	1	-
Mine Warfare Drones	4 (42)	-
Minelayer	1	-
Hovercraft	1	-
LST	21 (2)	2
LSM	41 (3)	3
LCMs/LCUs	44 (230)	-
Troop Transports (AP/AH)	6	-
Submarine Support Ships	5	1
Salvage and Repair Ships	3	2
Supply Ships	23+	3
Tankers	88	-
Icebreakers	4	-
Degaussing Ships	3	-

¹

SELECT SHIPS²

***Luhu* Class (Type 052) Guided Missile Destroyer (DDG)**

This ship is one of the most modern in the PLA Navy. It is made in Chinese shipyards except for the propulsion plants; the gas turbine engines that power *Luhu* DDGs come from Russia. It is suspected that problems with the powerplants are holding up engine delivery, and therefore, production of the class. There are only two of these ships operational at the time of this writing. These ships can operate two *Harbin* helicopters from their decks. They possess hull mounted VDS sonar. They conduct ASW and ASUW missions.

Displacement: 4,200 tons

SSM: C-801 *Sardine* (range: 22 nm) It may also operate the C-802 *Saccade* (range: 65 nm)

SAM: HQ-7 Thomson CSF *Crotale* (range: 7 nm)

Guns: Two 100 mm, eight 37 mm

Deployment:

North Sea Fleet: DDG 112, “*Harbin*”
DDG 113, “*Quingdao*”

***Luda* Class (Type 051) Guided Missile Destroyer (DDG)**

The *Luda* class ships commenced construction in the seventies. Major retrofit of the older *type I* and *type II Ludas* began in 1987. Given the numbers of this class, it represents a potent open ocean capability. It is capable of ASW and ASUW missions.

Displacement: 3,600 tons

SSM: *Type I* and *II Luda*: YJ-1 *Eagle Strike* (range: 51 nm) These may have been replaced with the C-801 *Sardine* (range: 22 nm) Although unconfirmed, it may also operate the C-802 *Saccade* (range: 65 nm)

SAM: HQ-7 Thomson CSF *Crotale* (range: 7 nm)

Guns: Two 130 mm, eight 57 mm, eight 37 mm

Deployment:

² Source for this section of Appendix B is from multiple sources: *Jane's Fighting Ships 1997-1998*, and *Chinese Military Digest*, online edition. This outline of select ships does not include all vessels of the PLA Navy, nor does it intend to be all encompassing: it is intended to provide a general sketch of some of the new class ships that will take the PLA Navy into the 21st century, and provide a general estimate of their capabilities.

North Sea Fleet:	DDG 105 “ <i>Jinan</i> ”	DDG 106 “ <i>Xian</i> ”
	DDG 107 “ <i>Yinchuan</i> ”	DDG 108 “ <i>Xining</i> ”
	DDG 109 “ <i>Kaifeng</i> ”	DDG 110 “ <i>Dalian</i> ”
East Sea Fleet:	DDG 131 “ <i>Nanjing</i> ”	DDG 132 “ <i>Hefei</i> ”
	DDG 133 “ <i>Chongqing</i> ”	DDG 134 “ <i>Zunyi</i> ”
South Sea Fleet:	DDG 161 “ <i>Changsha</i> ”	DDG 162 “ <i>Naning</i> ”
	DDG 163 “ <i>Nanchang</i> ”	DDG 164 “ <i>Guilin</i> ”
	DDG 165 “ <i>Zhanjiang</i> ”	DDG 166 “ <i>Zhuhan</i> ”

***Jiangwei* Class (Type 052) Guided Missile Frigate (FFG)**

Jiangwei class frigates, also of indigenous production, are ASW and ASUW capable platforms. They can operate one *Harbin* helicopter. Blue water capable.

Displacement: 2,200 tons

SSM: YJ-1 *Eagle Strike* (range: 51 nm) These may have been replaced with the C-801 *Sardine* (range: 22 nm)

SAM: HQ-61/PL-9 (range: 5 nm)

Guns: Two 100 mm, eight 37 mm

***Jianghu* Class (Type 053) Guided Missile Frigate (FFG)**

The *Jianghu* class FFGs are older than the *Jiangwei* class, but construction and retrofit continues on these ships. Accordingly, there are four primary variants, all with basically the same capability, but some differences among the platforms. The ship conducts ASW and ASUW missions, and is blue water capable. It operates one *Harbin* helicopter.

Displacement: 1,800 tons

SSM: HY-2 *Seersucker* (range: 43 nm) These are on the older ships. Newer ships have been outfitted with the YJ-1 *Eagle Strike* (range: 51 nm). The latest ships may have been outfitted with the C-801 *Sardine* (range: 22 nm) or the C-802 *Saccade* (range: 65 nm)

SAM: No system, although, hand-held SAM systems may be assumed. Some ships may have the HQ-61/PL-9 system (range: 5 nm).

Guns: Four 3.9”, eight 37 mm

***Huang* Class Missile Fast Attack Craft (PGG)**

This is a new class of surface ship. All vessels have entered service after 1990. These are small ships (approx 180 feet in length); yet, they possess the speed and weaponry of the larger class DDGs and FFGs. Large numbers of these type ships are ideal for the green water mission of controlling the local seas. *Huang* class ships are of

indigenous production, and it is unclear whether or not construction of this class will continue.

Displacement: 500 tons

SSM: YJ-1 *Eagle Strike* (range: 51 nm) or C-801 *Sardine* (range: 22 nm)

SAM: No system, although, hand held SAM weapons may be assumed.

Guns: Four 37 mm

***Houxin* Class Missile Fast Attack Craft (PGG)**

Similar in design and purpose to the *Huang* class, this line of ships is even newer to the fleet. The PLA Navy has produced many of these ships and construction appears to continue at an estimated rate of three new ships per year.

Displacement: 480 tons

SSM: YJ-1 *Eagle Strike* (range: 51 nm) or C-801 *Sardine* (range: 22 nm) It is estimated that in the near future, *Houxin* class PGGs will be fitted with the C-802 *Saccade* (range: 65 nm)

SAM: No system, although, hand held SAM weapons may be assumed.

Guns: Four 37 mm

***Han* Class Nuclear Attack Submarine (SSN)**

This is an old class SSN, but still possesses a potent antishipping capability. The *Type 093* will eventually replace the *Han* class ships. It is capable of firing torpedoes.

Displacement: 5,000 tons

SSM: YJ-1 *Eagle Strike* (range: 51 nm) or C-801 *Sardine* (range: 22 nm)

SAM: No system, although, hand held SAM weapons may be assumed when surfaced.

***Kilo* Class Conventional Attack Submarine (SS)**

Four of these have been purchased from Russia. The Russian variants exported to China represent very sophisticated and quiet vessels. These represent a formidable anti-shipping capability. Capable of firing torpedoes. The PRC may purchase twenty more of these ships.

***Ming* and *Song* Class Conventional Attack Submarines (SS)**

These are indigenously produced submarines that will eventually possess all the capabilities of the *Kilo* class submarines; indeed, some are operational today. All these ships are capable of firing torpedoes, and represent potent antishipping capability.

SURFACE TO SURFACE MISSILES³

Missile	Range	Platform
<i>Silkworm</i> (SY-1/HY-1)	22 nm	<i>Huangwen, Hegu</i>
<i>Seersucker</i> (HY-2/FL-3)	51-54 nm	<i>Luda I & II</i> <i>Jianghu I & II</i>
<i>Sardine</i> (YJ-1/C-801)	22 nm	<i>Han, Luda III, Luhu,</i> <i>Jiangwei, Jianghu III</i> <i>& IV, Huang, Houxin</i>
<i>Saccade</i> (YJ-2/C-802)	65 nm	<i>Luhu, Jiangwei,</i> <i>Jianghu IV, Houxin</i>

Note: The PRC is developing follow-on missiles with even greater capabilities than the *Sardine* and *Saccade* SSMs. At the time of this writing, these have not been seen operationally deployed, and for that reason are not included in this table.

³ Sources for this table: Jane's Information Group, "Surface to Surface Missiles," *Jane's Naval Weapon Systems*, (Surrey, UK: 1996), Issue 13; *Jane's Fighting Ships 1997-1998*; and *Chinese Military Digest* online edition.

APPENDIX C: CHINESE SHIPBUILDING EFFORTS

The ability to build ships is a prerequisite for naval construction. Following the rest of the PRC's economy, China's shipbuilding industry is growing. In 1995, China produced approximately five percent of all the world's new shipping tonnage,¹ eclipsing Germany as the third largest shipbuilder in the world.² There are efforts underway to streamline the Chinese shipbuilding industry to make it even more competitive in world markets. Chinese shipyards in Shanghai, which produced half of China's ships, have delivered several ships in the 100,000 ton + category to Norway.³ More and more, Chinese shipyards produce modern PLA Navy ships. The following table is a summary of *some* recent indigenous naval construction:⁴

Ship Class	Type Ship	Mission	Shipyard
<i>Luhu</i>	DDG	ASW, ASUW, Ship defense	Jiangnan and Dalian
<i>Luda</i>	DDG	ASW, ASUW, Ship defense	Dalian
<i>Jiangwei</i>	FFG	ASW, ASUW, Ship defense	Hudong
<i>Jianghu</i>	FFG	ASW, ASUW, Ship defense	Hudong, Jiangnan, Huangpu
<i>Huang</i>	PGG	ASUW, Coastal patrol	Huangpu
<i>Houxin</i>	PGG	ASUW, Coastal patrol	Quixin
<i>Song</i>	SS	ASW, ASUW, Coastal Patrol	Huludao
<i>Ming</i>	SS	ASW, ASUW, Coastal Patrol	Wuhan

¹ Zhang Yijun, "Shanghai's Shipyards Pull Anchor," *China Economic Window*, an online resource under www.chinaeco.com/siccew/cewhm/u070.htm, 1997.

² Yong S. Park, "China Shipyards Strive to Realize Their Potential," *ONR Asian Office*, on online resource under www.itd.nrl.navy.mil/ONRA/systems/1996/010896S1.html, January 1996.

³ *Ibid.*

⁴ This table constructed from multiple sources: CNA, p. 14; and *Jane's Fighting Ships 1997-1998*, p. 113-119.

GLOSSARY

ASEAN	Association of South East Asian Nations
ASUW	AntiShipping Warfare (May be against combatant or commercial ships)
ASW	AntiSubmarine Warfare
CPC	Communist Party of China
DDG	Destroyer, Guided Missile Capable
EEZ	Exclusive Economic Zone
FFG	Frigate, Guided Missile Capable
KMT	Kuomintang (Chinese Nationalists)
mm	millimeter
nm	Nautical Mile (One nm = 1.06 statute miles)
PGG	Fast Attack Craft, Guided Missile Capable
PLA	People's Liberation Army
PLAAF	People's Liberation Army Air Force
PLA Navy	People's Liberation Army Navy
PRC	People's Republic of China
SAM	Surface to Air Missile
SLBM	Submarine launched ballistic missile
SS	Submarine, conventional power, generally associated with minelaying and torpedo firing capability for coastal defense, or ASUW. Also ASW capable.
SSBN	Submarine, nuclear powered, Ballistic Missile capable
SSG	Submarine, conventional power, Guided Missile capable
SSN	Submarine, nuclear power, fast attack. Used in both ASW and ASUW missions. <i>Han</i> class SSNs are guided missile capable.
SSM	Surface to Surface Missile

BIBLIOGRAPHY

- Bussert, James. "Chinese Destroyers Incorporate Western Technologies, Designs," *Signal*, Vol. 49, No. 7. March, 1995.
- Center for Naval Analysis. *People's War at Sea: Chinese Naval Power in the Twenty-First Century*. Study. ADA306680, March, 1996.
- Chang, Felix K. "Beijing's Reach in the South China Sea," *Orbis*, Vol. 40, No. 3. Summer, 1996.
- Cody, Edward. "China Not a Rival, Beijing Official Says Opposition Expressed to Power Politics in Asia," *Washington Post*, January 17, 1997.
- _____. "China Mishandles Spratleys Dispute," *China and North Asia Monitor*, Vol. 2, No. 6, June, 1995.
- _____. "China Navy Called Distant Threat," *Navy Times*, November 6, 1995.
- Godwin, Paul H.B. "A Tentative Appraisal of China's Military Reforms," in *Reform and Development in Deng's China*. Ed. Shao-Chaun Leng. New York: Univ. of America Press, 1994.
- Huang, Alexander Chieh-cheng. "The Chinese Navy's Offshore Active Defense Strategy: Conceptualization and Implications," *Naval War College Review*, Vol. XLVII, No. 3, Sequence 347. Summer, 1994.
- Institute for Strategic Studies. *Strategic Assessment 1997*. Washington DC: National Defense Univ., US GPO, 1997.
- Jane's Information Group. "China, People's Liberation Army Navy (PLAN)," in *Jane's Fighting Ships 1997-1998, 100th ed.* London. 1997.
- Jane's Information Group. "China Should Receive Third Kilo by November 1997," *Jane's Defense Weekly*, Vol. 28, No. 4 July 30, 1997.
- Jane's Information Group. "Surface to Surface Missiles," *Jane's Naval Weapon Systems*. Surrey, UK: Issue 13, 1996.
- Jane's Information Group. "Russia Helps China Take New SSNs into Silent Era," *Jane's Defence Weekly*, Vol. 28, No. 6. August 13, 1997.
- Johnson, David C. "Modernization of the PLA Navy and East Asian Regional Security

- Issues,” in *Journal of Public and International Affairs*, online edition under www.wws.princeton.edu/~jpia/. Princeton Univ.: Woodrow Wilson School of Public and International Affairs, July, 1996.
- _____. “Jiang Scales Summits,” *China and North Asia Monitor*, Vol. 4, No. 12. December, 1997.
- Kemp, Geoffrey and Robert D. Harkav. *Strategic Geography and the Changing Middle East*. Washington DC: Brookings Institution Press, 1997.
- Kennedy, William V. “The Defence of China’s Homeland,” in *The Chinese War Machine: A Technical Analysis of the Strategy and Weapons of the People’s Republic of China*. Ed. Ray Bonds. London: Salamander Books, 1979.
- Kenworth, E.W. “US Assures Red China It Wouldn’t Back Attack,” *New York Times*, June 27, 1962.
- Kistof, Nicholas D. “Tension in Asia Over Wealth Under the Sea,” *New York Times*, May 19, 1996.
- Lyon, Hugh. “China’s Navy: For Coastal Defence Only,” in *The Chinese War Machine: A Technical Analysis of the Strategy and Weapons of the People’s Republic of China*. Ed. Ray Bonds. London: Salamander Books, 1979.
- McVadon, Eric A. “PRC Exercises, Doctrine and Tactics Toward Taiwan: The Naval Dimension,” in *Crisis in the Taiwan Strait*. Ed. James R. Lilley and Chuck Downs. Washington DC: National Defense Univ. Press, 1997.
- Muzi Network. “Spratly’s to Top Li Peng Talks in Malaysia,” *Lateline - Daily News of the Chinese World*. Online edition under *Yahoo; America Online*. September 25, 1997.
- Muzi Network. “China Sticking to Paracel Island Position,” *Lateline - Daily News of the Chinese World*. Online edition under *Yahoo; America Online*. August 21, 1997.
- _____. High Ranking Officials of the Taiwanese Mission to the United States. Interview by Author. Washington DC, November 12, 1997.
- Office of Naval Intelligence. *Worldwide Submarine Challenges*. Monograph. Washington DC: US GPO. February, 1997.
- Schlesinger, James. “Fragmentation and Hubris: A Shaky Basis for American Leadership,” *The National Interest*, No. 49, Fall, 1997.
- Segal, Gerald. “China Takes on Pacific Asia,” in *Jane’s Defence ‘96: The World in Conflict*, London, Jane’s Defence Magazines, 1996.

- Shen Zhonchang, Zhang Haiyin, and Shou Zinshen. "21st Century Naval Warfare," in *Chinese Views of Future Warfare*, Washington DC: National Defense Univ., US GPO, 1997.
- Shenon, Philip. "China Sends Warships to Vietnam Oil Site," *New York Times*. January 2, 1994.
- Simon, Sheldon W. "Alternative Visions of Security in Asia Pacific," *Pacific Affairs*, Vol. 69, No. 3. Fall, 1996.
- Swaine, Micheal D. "Don't Demonize China: Rhetoric About Its Military Might Doesn't Reflect Reality," *Washington Post*, May 18, 1997.
- Till, Geoffrey. "China, Its Navy and the South China Sea," *RUSI Journal*, Vol. 141, No. 2. London: Whitehall, April, 1996.
- Tyler, Patrick E. "China's Military Stumbles Even as Its Power Grows," *New York Times*, December 3, 1996.
- Tyler, Patrick E. "China to Buy 72 Advanced Fighter Planes from Russia," *New York Times*, February 7, 1996.
- Tyler, Patrick E. "China Revamps Forces With Eye to Sea Claims," *New York Times* January 2, 1996.
- United States Arms Control and Disarmament Agency. *World Military Expenditures and Arms Transfers 1995*. Washington DC: US GPO, April, 1996.
- United States Congress, Senate, Subcommittee of East Asian And Pacific Affairs of the Committee on Foreign Relations. *The Growth and Role of the Chinese Military*. Hearing. 100th Cong., 1st sess., Y4.F 76/2:S.HRG.104-330. October 1-2, 1995.
- United States Congress, House, Committee on National Security. *Security Challenges Posed by China*. Hearing. 100th Cong., 2nd sess. Washington DC: US GPO, Y4.SE 2/1 A:995-96/39. March, 1996.
- United States General Accounting Office. *National Security: Impact of China's Military Modernization in the Pacific Region*. Report to Congressional Committees. Washington DC: US GPO, GOA/NSAID-95-84. June, 1995.
- Waldron, Arthur. "Dragon Growling," *National Review*, Vol. 47, Issue 14, July 31, 1995.
- White House. *A National Security Strategy for a New Century*. Washington DC: US GPO, May, 1997.

Yong S. Park. "China Shipyards Strive to Realize Their Potential," *ONR Asian Office: ONRASIA Systems Info*, an online resource under www.itd.nrl.navy.mil/ONRA/systems/1996/010896S1.html. January, 1996.

You, Ji. "The Chinese Navy and Regional Security," *Asian Defence Journal*, September, 1995.

Young, Philip. "Navy of the PLA," in *Chinese Military Digest*, online edition under www.pasadena.net/~gsprint/cmd/cmd.htm. 1997.

Yu Qufen. "The International Military Situation in the 1990s," in *Chinese Views of Future Warfare*, Washington DC: National Defense Univ., US GPO, 1997.

Zhang Yijun. "Shanghai's Shipyards pull anchor," *China Economic Window*, an online resource under www.chinaeco.com/siccew/cewhtm/u070.htm. 1997.

Zoellick, Robert B. "A Larger Plan for Asia," *Washington Post*. January 6, 1998.