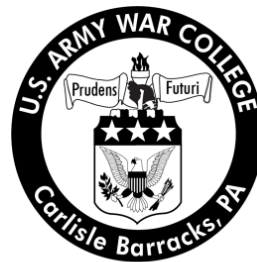


Strategy Research Project International Fellow

Implications of China's Aircraft Carrier Development

by

Lieutenant Colonel Yu-Chin Lee
R.O.C. Army



United States Army War College
Class of 2012

DISTRIBUTION STATEMENT: A

Approved for Public Release.
Distribution is Unlimited.

COPYRIGHT STATEMENT:

The author is not an employee of the United States government.
Therefore, this document may be protected by copyright law.

This manuscript is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY) 16-03-2012		2. REPORT TYPE Strategy Research Paper		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE Implications Of China's Aircraft Carrier Development				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Lieutenant Colonel Yu-Chin Lee				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Dr. David Lai Strategic Studies Institute				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army War College 122 Forbes Avenue Carlisle, PA 17013				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution A: Unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT The PRC's first aircraft carrier, the ex-Varyag, conducted its sea trial in August 2011 and attracted global attention. Some people argued that a single aircraft carrier could not have much significant influence on the Asian region or the world at large. However, if we look at this development from the perspective of the Republic of China in Taiwan (ROC), we can see that the ex-Varyag is not just a power projection platform for the People's Liberation Army (PLA). The deployment implies the political, national and the military ambition and plan of the People's Republic of China. The South China Sea and the Taiwan Strait are the focus of the regional conflict due to territory and political disputes. The deployments of the ex-Varyag will significantly change the military balance in the region and challenge US interests. Although the ex-Varyag still needs more time to fully equip, U.S. allied countries should prepare to understand this challenge. As the ancient Chinese strategist Sun Tzu said; "strategy and diplomacy are better than the military resolution." We should use diplomatic, informational, military and economic (DIME) means to reach a comprehensive approach for this issue.					
15. SUBJECT TERMS South China Sea, ex-Varyag, Taiwan, United States of America.					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UNLIMITED	18. NUMBER OF PAGES 28	19a. NAME OF RESPONSIBLE PERSON
a. REPORT UNCLASSIFIED	b. ABSTRACT UNCLASSIFIED	c. THIS PAGE UNCLASSIFIED			19b. TELEPHONE NUMBER (include area code)

USAWC STRATEGY RESEARCH PROJECT

IMPLICATIONS OF CHINA'S AIRCRAFT CARRIER DEVELOPMENT

by

Lieutenant Colonel Yu-Chin Lee
R.O.C. Army

Dr. David Lai
Project Adviser

This SRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

ABSTRACT

AUTHOR: Lieutenant Colonel Yu-Chin Lee
TITLE: Implications of China's Aircraft Carrier Development
FORMAT: Strategy Research Project
DATE: 16 March 2012 WORD COUNT: 5,725 PAGES: 28
KEY TERMS: South China Sea, ex-Varyag, Taiwan, United States of America
CLASSIFICATION: Unclassified

The PRC's first aircraft carrier, the ex-Varyag, conducted its sea trial in August 2011 and attracted global attention. Some people argued that a single aircraft carrier could not have much significant influence on the Asian region or the world at large. However, if we look at this development from the perspective of the Republic of China in Taiwan (ROC), we can see that the ex-Varyag is not just a power projection platform for the People's Liberation Army (PLA). The deployment implies the political, national and the military ambition and plan of the People's Republic of China.

The South China Sea and the Taiwan Strait are the focus of the regional conflict due to territory and political disputes. The deployments of the ex-Varyag will significantly change the military balance in the region and challenge US interests. Although the ex-Varyag still needs more time to fully equip, U.S. allied countries should prepare to understand this challenge. As the ancient Chinese strategist Sun Tzu said; "strategy and diplomacy are better than the military resolution." We should use diplomatic, informational, military and economic (DIME) means to reach a comprehensive approach for this issue.

IMPLICATIONS OF CHINA'S AIRCRAFT CARRIER DEVELOPMENT

The PLA Navy's first aircraft carrier, the ex-Varyag, conducted its initial sea trial in August 2011 and symbolized that the time of China's maritime power is coming. From a rusty hull when it transited through the Bosphorus strait to the first sea trial sail in the Yellow Sea, its dramatic change has attracted global attention.

The People's Republic of China (PRC) has already obtained economic power and diplomatic methods which will allow it to jump into the world stage when combined with their huge number of military assets. The PRC is becoming a new super power in the new century. The deployment of the ex-Varyag is not only part of China's military modernization plan; it also displays China's desire to transform itself into an international sea power. From the location and the line of the transportation point of views; they need to move off land to blue water in order to acquire domination of the ocean. They need to build a power projection platform, that is -an aircraft carrier. To face and deal with the challenge from China's future aircraft carrier battle groups, the U.S. and Taiwan can't just use the lens of the military perspective. To find the rational and feasible resolution, the U.S. and Taiwan must analyze multiple angles in order to reach the comprehensive approach.

Current Relationships between the PRC, ROC and USA

Since PRC began its economic reform in 1978, the Communist Party of China has continued to adapt the basic principles of Marxism to the actual conditions of China.¹ After thirty--three years of struggle, China has become the world's second largest economy, second largest energy importer, and largest natural resource importer by volume.² This successful and sustained economic development not only raised the

quality of living for China's citizens but also the backbone of the military modernization program. China's defense budget expenditure tripled from \$31 billion in 2000 to \$100 billion in 2009.³ According to the Stockholm International Peace Research Institute (SIPRI), Chinese military expenditures in 2010 totaled \$119. These numbers not only revealed China's military ambition but also caused tension within the Asia-Pacific region.

Economic achievement provides China with sufficient confidence to organize and lead internationally through anti-terrorism cooperation and multinational military exercises. The Shanghai Cooperation Organization (SCO) which was established in 2001 had become the symbol of anti-Western and anti-NATO mechanism.⁴ Irrefutable evidence shows that China is taking its place in the new world order. For example, in 1997, Hong Kong returned to become a part of China and the 2008 Beijing Olympics represented the nationalism and sense of national pride blooming within China. The Chinese believe that this is their time to lead the world after the Qing dynasty collapsed and they call the 21st century the Chinese Century.

Since 1949, the ROC government has evolved in Taiwan and the cultures between the two sides of the Taiwan Strait have developed separately. The descendants of the retreated Chinese and indigenous people in Taiwan have evolved and become their own civilization. They call themselves "New Taiwanese" instead of "Chinese" and want to release from China's fetters. Former President Chen Shui-bian (2000-2008), the chairman of the Democratic Progressive Party (DPP), has traditionally been supportive of Taiwan independence. This position increased tension and closed the windows of exchange across the Taiwan Strait during his presidency. Since the

inauguration of President Ma Ying-jeou in May 2008, the Republic of China government has changed its “cross-strait relation” from pro-independence to maintaining the current status quo. Under the new political atmosphere developed by the governments of ROC and PRC, the formal communication channel has been reopened and many realistic and urgent cross-strait interactions have been conducted to meet the needs of the people on both sides. One of the most significant achievements was signing The Cross-Strait Economic Cooperation Framework Agreement (ECFA) between ROC and PRC in 2010. This cooperation changed the ideology of both sides from an adversarial relationship to a partnership.

Leaders from both sides of the Taiwan Strait have always stressed the “1992 consensus”, which means “one China, different interpretations” and the “three-no” policy statements, which include “no unification, no independence, no use of force” as the foundations for a stable cross-strait relationship. Nowadays, through high-level communications, the basic consensus reached by both sides is “establishing mutual trust, shelving controversies, seeking common ground while tolerating difference, and creating win-win situations.” President Ma’s speech in Taiwan’s 2011 National Day Parade on October 10 announced that the priorities of the ROC-PRC relationship are economic and exchange based, but not struggles in the political or military relationships. President Ma also threw a ball to China proposing the establishment of a military confidence-building Mechanism (MCBM) between the ROC and the PRC.⁵

The United States has always played an important role in Taiwan Strait issues. In January 1979, the United States broke off official relationships with ROC and recognized the government of the PRC as the only legal government of China and

recognized that Taiwan is part of Chinese territory (One China policy). In April 1979, U.S. President Jimmy Carter signed into law the Taiwan Relations Act (TRA), which continues to maintain the unofficial relationship between the U.S. and ROC, and guaranteed the U.S. commitment to assisting Taiwan in maintaining its self-defense capability. In September 2011, The US announced an arms sale plan to upgrade ROC's F-16 A/B fighter jets despite China's strong protest. This arms sale not only shows the commitment of the US but also maintains minimal self defense capability of the ROC air superiority in the Taiwan Strait.

The PRC's Regional Conflicts and Taiwan Problem

From the PRC's perspective, since the return of Hong Kong and Macao to China in 1997 and 1999 respectively, the push for the return of Taiwan is much more significant. Every PRC "paramount leader" is desirous of unification during their presidency in order to record their name in the history books. In 1996, Taiwan held its first direct presidential election and the island was rife with independent voices. The Chinese leaders ordered the PLA to launch missiles toward Taiwan in order to influence the outcome of elections. This event was called the "1996 Taiwan Strait Crisis" and was also the latest near-war situation after The Second Taiwan Strait Crisis in 1958. However, the Chinese leader didn't receive the desired results from the use of military intimidation.

One unconfirmed report indicated the name of the Varyag will be the Shi Lang (1621-1696).⁶ Shi Lang was an admiral in the Qing dynasty who was commander-in-chief of the Manchu fleets which destroyed the power of the Zheng family who conquered the Kingdom of Tungning (now Taiwan) in 1681. It can imply that China will never give up its right to use force to solve the Taiwan problem. Constantly threatened

by communist China (PRC) by use of arms, Taiwan has to seek reliable defense methods. However, should there be a conflict, it is not only about a war between ROC and PRC, it is about justice and freedom, and more importantly, it is about the values and the ways of life Taiwanese people believe in. These beliefs are anti-communism, which will create a great impact on the whole world with unimaginable consequences.

With a booming domestic economy and rapid urbanization, China is increasing its demand for oil and natural gas.⁷ The South China Sea is rich in natural resources such as oil and natural gas.⁸ Meanwhile, competing claims of South China Sea islands and the strategic location of the South China Sea have also made this region a “hot spot” to pull the regional conflict trigger. For the sake of exploring resources in the South China Sea and securing the maritime border, the PRC established the South China Sea Institute of Oceanology, Chinese Academy of Sciences (SCSIO) in 1959 in order to develop the marine economy and safeguarding of the national marine rights and interests.⁹ However, a research institute cannot provide enough security to face the complex situation in the region. The PRC believes that the only way to deter another country in the region is to build and maintain a superior maritime force. After the First Sino-Japanese War in 1895, the Qing Dynasty lost their entire Northern Sea Fleet and the Chinese never crossed the first island chain again. The Nanfang Daily indicated that China's aircraft carrier the ex-Varyag is planning to serve in the South China Sea by the PLA Army Day of 2012 and will be under direct command of China's Central Military Commission.¹⁰ Although The Armed Forces of the Philippines says there was “no cause for alarm” over China's first aircraft carrier and the construction of two similar vessels,

they are still concerned with the ambitions of The People's Liberation Army Navy and its operations in the South China Sea.¹¹

PLA's Military Ambition and Modernization Overview

Since 1978, China's four modernization goals have emphasized agricultural development, industrial growth, enhanced research and development, and military development. Military modernization, however, appeared to be the lowest priority as it was not until the mid-1990s when China began to devote more resources to this goal. Since then, through booming economic growth, the official Chinese defense budget increased annually at a double digit pace and reached its peak in 2010 at \$91.5 billion.¹²

According to the U.S. Secretary of Defense annual report to congress, China follows their National Military Strategic Guidelines for the new period as "an active defense" strategy to plan and manage the development and use of the armed forces.¹³ The report also indicated PLA emphasis on their anti-access/area denial (A2AD) capability development, ballistic missile defense capability, extended operational reach and strategic capabilities.

In January 2007, China successfully launched a direct-ascent anti-satellite missile (ASAT) to destroy a weather satellite.¹⁴ On August 10, 2011, China's first aircraft carrier conducted its five day sea trial.¹⁵ These two significant military modernization achievements not only inspire Chinese nationalism but also reveal China's military ambition.

PLA Aircraft Carrier Group Fielding Plan and Influences

The ex-Varyag attracted world's attention when the PRC acquisitioned it. It was purchased at auction for \$20 million by Chong Lot Travel Agency, a company widely believed to be a front for Chinese People's Liberation Army Navy (PLAN). Chong Lot

stated that the ship would become a floating entertainment center and casino.¹⁶ Despite that, global security suspected the actual use of the ex-Varyag, China kept silent until June 2011, when the chief of the General Staff of the PLA, Chen Bingde, confirmed China's first carrier was under construction in an interview with the Hong Kong Commercial Daily.¹⁷ The timing of the PLA's revelation that it would transform from a land to sea power also elicited much attention. Initially, China stated that the ex-Varyag was to be utilized for "scientific research, experiment and training."¹⁸ China will be the tenth country to own an aircraft carrier in the world and also the last owner in the permanent member of the UN Security Council. An interesting question for the rest of the world is how many aircraft carrier groups does PLA need?

From the maintenance rotation perspective, the aircraft carrier is a complex and sophisticated power projection system; it requires regular maintenance and comprehensive training for the sailor in order to dominate the sea in the Asian region. China must acquire at least two aircraft carrier combat groups to be effective. One will be ready to deploy and the other would be reset or on dock maintenance.¹⁹

We can also examine this question from the organization and missions of the PLAN. The PLAN's organization is a mixture of geographic and mission-oriented commands, typical of large navies. They are divided into three fleets: the North Sea Fleet, the East Sea Fleet, and the South Sea Fleet. Each fleet is facing different challenges. The North Sea Fleet faces a complex theater involving Russia, Korean, and Japan. The East Sea Fleet is focused on Taiwan but also includes the Senkaku (Diaoyu) Islands. The South Sea Fleet also faces a complex operational situation, with its AOR including the South China Sea's operation and political problems. In order to

face the omnibus geographic challenge, China may need at least three aircraft carriers to be effective in the region.²⁰ This is also in accordance with the estimate provided by the Pentagon. According to a defense official from the Pentagon, “We expect China to build at least one indigenous carrier, probably two or more.”²¹ China is rumored to be building two indigenous carriers at the Jiangnan Shipyard in Shanghai. Given these signs and inference, we can expect to see at least three PLAN’s aircraft carriers surging in the future. Ex-Varya may be organized into the South Sea Fleet in order to raise the PLAN’s dominance in the region. The follow-on aircraft carrier could be under the North Sea Fleet’s command and take the responsibility of northern homeland security of China. The third one will be organized into the East Sea Fleet. Even though these three ships will be assigned to different geographic commands; they can support other missions.

The ex-Varyag was an empty shell when it was towed to China in 1998. But in ten years, China had refurbished the ship and made sea trials by late 2011. As we know, an aircraft carrier is a complex and sophisticated weapon system, and the PLAN didn’t have any experience building aircraft carrier. PLAN depends heavily on the technology transformation from the former Soviet Union. Also, the PLAN recruited a large number of Ukrainian naval engineers to help them. But the lack of the key technologies is evident.²² For example, China developed a carrier-based fighter aircraft-called the J15, but the acquisition plan for arresters was refused by Russia.²³ How to fully equip and train the crews will be the challenge for the ex-Varyag fielding plan. PLAN intends to deploy the ex-Varyag in 2015, if they can conquer these key problems

and technology issues within these four years.²⁴ Military experts question whether PLAN can accomplish this as expected.

The Shenyang Aircraft Corporation replicated the Su-33 from Russia for the ex-Varyag, and developed their domestic carrier-based fighter aircraft, the J-15.²⁵ The J-15 conducted its first test flight in August 31, 2009 and continues the follow on training program.²⁶ PLAN also built a new airport in southwest China Huludao for the parking and training of the J-15.²⁷ However, the congenital design deficiencies of the ex-Varyag will limit its overall combat ability. For example, the ski-jump of the ex-Varyag cannot launch aircraft that are heavy, carry much fuel or weaponry or do so at the same high rates as a CATOBAR (catapult assisted take off barrier arrested recovery) ship²⁸. This design will significantly limit the maximum take-off weight and reduce the J-15's combat radius and payload. Another key limitation of ski-jump carriers is they cannot operate refueling tankers, which will also reduce J-15 combat radius. The ski-jump design not only limits the capability but also restricts the number of aircraft it can carry. The USS Nimitz (CVN-68), which utilizes the CATOBAR system, can carry 90 aircraft; while the 60 aircraft capacity of the ex-Varyag seems inadequate.²⁹

The other vital element to enhance aircraft carrier capability and protect it from undersea attack is anti submarine warfare (ASW). ASW is the use of ships, aircraft, submarines, and other platforms to detect, track, and destroy enemy submarines. There is no doubt that submarines are the best ASW platforms because they are designed to operate in the same environment as their targets and have similar strengths and vulnerabilities.³⁰ However, although the PLAN owns roughly 60 submarines, only five are nuclear-powered attack submarines.³¹ Some experts estimate that PLAN's

undersea technology is potentially 20 years behind the U.S. Navy and is easy to track due to its unbelievable noise.³² However, PLAN imported Ka-28s from Russia and plans to deploy in them with the ex-Varyag in order to enhance its ASW capability.³³ The Ka-28 possesses an endurance of two hours for anti-ship targeting or ASW missions, and is designed to detect, track and destroy submerged submarines at a depth of 500m and running at speeds up to 75km/h in all weather conditions. For its antisubmarine missions the Ka-28 is also equipped with dipping sonar and sonobuoys.³⁴ However, even though the Ka-28 can compensate the ineffectiveness of PLAN's submarines, the question of how to command, control and integrate these antisubmarine assets will be an arduous problem for PLAN.

Despite PLAN's inadequate experience operating an aircraft carrier, once the ex-Varyag deploys, it will totally change the military balance in the Asia-Pacific region. This will push China into a new stage of history. How can the US and the ROC face this oncoming challenge and maintain the security it needs in the future?

ROC Counteractions

The ROC military defends Taiwan with limited resources and has faced a strong military power in the past six decades. They changed their military strategy and slogan from "Retake mainland China" to "Resolute defense and credible deterrence (防衛固守, 有效嚇阻)" after they realized the imbalance of military power between the Taiwan Strait.³⁵ Despite the ROC and the PRC government signing a historic free trade agreement (ECFA), integrating their two economies and institutionalizing their diplomatic relations, China continues its military buildup and has refused to renounce the use of force to reclaim the island.

The ROC DOD divided their area of responsibility (AOR) into five Theater Army (TA) and two isolated commands. The Center of Gravity (COG) of the ROC total defense concept focuses on the west side of the island since they believe the PLA will attack Taiwan by an amphibious landing from the west coast. The first sea trial of the ex-Varyag astonished the ROC military, because when this aircraft carrier is deployed, Taiwan will not just face the PLA's threat from its west, but also potential PLA attacks from Taiwan's eastern side. How the ROC government and military can maintain their self-defense capability is a problem for both the PRC and the U.S.

ROC's military weapon development resources are limited because of China's pressure on the United States and the U.S. Arms Sales policy restrictions. Taiwan still tries to build up some indigenous deterrence weapons to shield against the PLA's military action. For instance, the Hsiung Feng III Anti-ship missile is in development by the Chungshan Institute of Science and Technology (CSIST) in Taiwan. After the sea trial of the ex-Varyag, The ROC DOD displayed this missile in the Taipei Aerospace & Technology Exhibition and marked it as the "Aircraft carrier killer."³⁶ Due to its Mach 2 supersonic speed, the missile can penetrate naval fleet's close-in weapon systems easily and become an efficient weapon against the ex-Varyag.³⁷ Another missile system that contributes to Taiwan security is the Hsiung Feng IIE surface-to-surface cruise missiles (HF-IIE). This missile was also developed by the CSIST and has a maximum range of 1,000 km which means it is capable of reaching military targets in China such as Guangzhou in the south as well as Shenyang in the north.³⁸ The ROC military should take a serious consideration in utilizing this missile as a strategic asset to improve force

protection methods in order to avoid destruction by the PLA's first strike and then conduct a counterattack.

The Taiwan Strait is a vital line of transportation for the Asia Pacific region. The width of the Strait is from 130 km to 180 km. The ROC government utilizes the Kinmen Islands, Penghu Islands and Taiwan to organize the "Defense Triangle Sector". Because of the shortage of amphibian operational capabilities of the PLA and the determination of the ROC's homeland defense in the ROC, the ROC government maintains its sovereignty of the Taiwan, Penghu and Kinmen islands. In addition, the Kinmen and Penghu Islands were historically critical locations that were attacked by the PLA. After the end of the Chinese Civil War, The PLA tried to take over Kinmen in 1949 and 1958 without success. The Qing Dynasty attacked the Penghu Islands in 1683 to destroy the remains of the Southern Ming Dynasty. From historical and current situational perspectives, the key missions to secure Taiwan are to maintain freedom of maneuver in the Taiwan Strait and control the offshore. After aircraft carrier development, the PLAN can easily conduct maritime blockade missions and how can the ROC navy respond? Submarine is a nice choice for Taiwan to conduct anti-blockade missions. Currently, the ROC navy owns four out-of-date submarines. The quantity and quality are insufficient to challenge the Chinese aircraft carrier. Although the ROC government is trying to acquire eight diesel-electric submarines from the US, it has no match to China.³⁹ The ROC should continue pursuing this arms sale and use the current submarines as strategic assets. The ROC navy should plan the timing and methods to deploy those submarines against the aircraft carrier. Even though their

quality and quantity cannot compete with PLAN, they can be effective in decisive combat.

The concept of homeland defense of the ROC has to be revised to meet the challenge from future Chinese aircraft carrier battle groups (CBGs). According to the ROC's Defense White Paper published in 2011, the ROC military emphasizes "Joint interdiction operation (聯合截擊作戰)" and "Joint anchorage operation (聯合泊地攻擊)" which means they will not allow the PLA set one foot on Taiwan and will destroy their landing forces on their way to Taiwan.⁴⁰ However, after the PLA deploys CBG's, it will change PLA's axis of invasion from one direction to multidirectional. The Chinese CBG's can travel to the East of the island and blockade the Taiwan Strait and deny foreign Nations from intervening. In this scenario, the ROC military will have to fight alone since assistance from the USA and other countries will be difficult. The key factor for Taiwanese victory is the ability to suffer first strike in order to conduct the counter attack operation and sustainment for a long term operation.

Infrastructure protection and the ability to recover from attack is a vital mission for the ROC military. During the annual Han Kuang (HK) joint operation exercises, one can see the aircraft highway land-off drill, runway recovery practice and key infrastructure self-defense exercises. These exercises can improve the ability of the ROC's military to restore their combat capabilities after the first strike of the PLA. However, the ROC military should think about the impact from the carrier-based attacks. The Cha Shan Air Base (佳山空軍基地) is a good example to explain the forces protection method before and after the Chinese CBG is deployed. The Cha Shan Air Base (CSAB) was built in 1981 and can accommodate 250 aircraft, has a modern C4 system, high-tech NBC

protection system, comprehensive combat and support facilities, and the protection of the Taiwan Central Mountain. These mountains become the critical fortification for the ROC air forces. However, the Central Mountain is designed as a protective shield to prevent the PLA's Second Artillery and PLA's aircraft saturated attack from the west side of Taiwan. When the Chinese aircraft carrier combat group deploys in the east of Taiwan, the CSAB will become fragile because it is facing direct hits from the ship-based weapons and J-15 carrier-based aircraft.⁴¹ Even though the ROC air forces reinforced their anti-bombing infrastructures to maintain the ground facilities intact, the air superiority will belong to the PLA. When the ROC's aircraft fly into the sky, they will not only fight against J-15s but also against the jamming of the electrical warfare capabilities of the Chinese CBG's.

The ROC military had already deployed a variety of surface-to-air missiles to combat missile and aircraft attack from the PRC; such as the Patriot Advanced Capability-3 (PAC-3) missiles from the US.⁴² The problem is that these missiles focus on the western plain of Taiwan to protect vital infrastructures. Based on the challenge from future Chinese CBG's, the ROC military should review their current air defense plan; redeploy the limited air defense assets to achieve overall air security of the Taiwan Islands.

China's CBG development is creating a bigger military imbalance in the Taiwan Strait. No one believes Taiwan can sustain more than one week under the PLA's attack without foreign power intervention. If war happens, the result will be internecine and Taiwan's infrastructure and economical system will be ruined. Neither side will benefit from the war. Obviously, the military resolution is not a good answer for China.

Following the ancient Chinese strategist Sun Tzu's philosophy, strategy and diplomacy are better than military force. If ROC can protect their country and property without any blood, why would ROC use it?

After the Kuomintang (KMT) retook control of government in 2008, it has been pursuing a steady and pragmatic strategy to actively improve the relationship across the strait and to gradually eliminate the unpredictability and insecurity across the strait. The ROC began to treat this relationship with new thoughts and attempts to seek a new way to break a deadlock across the strait, so as to secure the long-term survival and development of the ROC. They thoroughly knew that without peace and stability across the strait, the country's long-term stability and peaceful coexistence across the strait will not exist. The "1992 consensus" and the "Three-no" policy are the fundamentals needed to maintain the stability of the Taiwan Strait and reopen communication to mainland China. Even if the current situation seems tranquil, the government tries to use the nonmilitary method to maintain peace. In May 2011, President Ma Ying-jeou attended a video conference held by the Center for Strategic and International Studies (CSIS), a U.S. think tank, where he proposed three defenses lines which would defend the security of the Republic of China, emphasizing general layouts of national security which are guided under the strategy of pursuing peace. The first defense line is to systemize the relationship across the strait, to reduce the chances of using force by both sides. Any unilateral change will cost both sides dearly. The second defense line is to increase the Republic of China's contribution on international development, employing economic and improved diplomacy, humanitarian aid, and cultural exchange, creating new technology and business opportunities, and the guidance of Chinese

culture. This will enhance the image of the Republic of China and rebuild the international community's trust and support toward Taiwan. The last defense line is to solidify the will and determination of self-defense through a combination of diplomacy and national defense, so as to build a reliable national defense force.⁴³

One significant component of the first defense line is to establish a "military confidence-building mechanism" (MCBM) between both sides which includes President Ma's 2012 presidential campaign and the China's National Defense in 2010.⁴⁴ MCMB consists of comprehensive communication channels between the ROC and the PRC. It will include the establishment of "transparency measures", "operational military constraints", "declaratory statements", "communication links", "military exchanges", "make rules of engagement explicit and establish a buffer zone", "information sharing", "maritime cooperation", "conflict avoidance arrangements", "missile restraint regime" and "additional operational military constraints."⁴⁵ The inherent sensitivity of MCBMs and the limitations (lack of creativity and liberty) of the PRC government system are the biggest challenges. Without the PRC national leader's policy announcement as guidance, there can be very little, if any, substantial progress. PRC president Hu Jintao will step down and ROC president Ma Yingjeo will be re-elected in 2012. But assuming continuity in China's leadership, we should take full advantage of the "window of opportunity" between now and 2016, when both sides are very supportive and the political atmosphere is very conducive to initiate plans for establishing MCBMs with the PRC.

The ROC has the challenge of a rising Chinese military power and the deployment of aircraft carrier battle groups. The ROC apparently stands in an inferior

position. The leadership should be thinking about how to utilize their advantage and transform the disadvantages into opportunities. In order to assure the security of the Taiwan Strait, the ROC leadership should use “hard power (Military methods)” as well as “soft power (Economic and Diplomatic methods)” to reach the comprehensive efforts.⁴⁶

US Counteractions

The US Navy has dominated the global maritime for the past half century. However, the current US naval hegemony in the western Pacific could be threatened by the deployment of Chinese aircraft carriers in the near future. This phenomenon is being driven by the “twin factors”: the rise of China as a Pacific power and the decline of imperial America.⁴⁷ By the prop of the growing economy, China’s military moderation plan had already turned in impressive results and continues to challenge the US’s dominant position in the world. China declared its ambition to become a sea power nation when they purchased the ex-Varyag. We can imagine in the future, the Pacific Ocean will not just belong to the Seventh Fleet, and maybe we can see the aircraft groups from the US and the China situated against each other in the future.

According to the so-called Chinese assassin-maze theory (杀手锏), the PLA has developed an advanced anti-access/area-denial (A2/AD) network and associated capabilities that threaten regional stability and security. The ex-Varyag is a part of this modern warfare. The scenario of the A2/AD attack will start when they disrupt U.S. battle networks by destroying or jamming the US satellite constellation in concert with coordinated cyber and electronic warfare attacks, followed by use of salvoes of precision guided missiles to strike at key U.S. and allied targets, such as an aircraft

carrier combat group. Then the PLA will gain air superiority and naval freedom of maneuver to achieve its military and political goals.⁴⁸ The US focused on the PLA's A2/AD capability to develop a new kind of concept of war fighting. The US Air Force and Navy together are developing a new joint air-sea battle concept to fight against the threat of the PLA's A2/AD combat. Air Sea Battle (ASB) for defeating adversaries across the range of military operations, including adversaries equipped with sophisticated anti-access and area denial capabilities. It will integrate capabilities across all operational domains—air, sea, land, space, and cyberspace—to counter growing challenges to U.S. freedom of action.⁴⁹ The ASB depends heavily on ally support, especially Japan and Australia. The US government sent 2,500 marines to northern Australia to reinforce the combat power in the region.⁵⁰ And also the Pentagon established the Air Sea Battle Office (ASBO) on August 2011 to take charge of the related affairs.⁵¹ But the crucial elements for the ASB will be the counter-battle network, missile defense, sea and undersea denial and counter-forces sustainment operations. The US military should focus on the PLA's A2/AD capability to build up a comprehensive and effectively strategy and maintain the stability of the region.

As Sun tzu said, “know your enemies and know yourself, you can win a hundred battles without a single loss.” To the extent that the PLA's military transparency is a big problem. The US military should try its best to increase exchange between Taiwan and their relations. This exchange should include the authority's dialogue, high-ranking officer visits and joint exercises. By this means of exchange, the ROC can force the PLA's military affairs more transparent and build up the trust within the ROC and the PRC.

The ROC always stands in the front against the PRC. However, because of interference from the PRC, the ROC military cannot acquire weapons in time. The submarines which the ROC desire to acquire can penetrate the maritime blockade from the PRC Navy. If the ROC Navy owns the new type of submarines, the ROC Navy will not only maintain the freedom of maneuver in the Taiwan Strait, but can also join the US ASB plan. Although the ROC had possessed several PAC-- III systems, and continues development of their indigenous anti missile system. Due to the number of missiles aimed at Taiwan, the anti missile capability of the ROC has become too weak to sustain. Strengthening the ROC's anti missile capability and organizing Japan, Taiwan and Australia into a regional anti missile sector will decrease the efficiency of the PLA's A2/AD effect.

Treaty of Mutual Cooperation and Security between the United States and Japan, Australia, New Zealand are the keystone of the US domination in the Pacific region. Conducting regular multinational exercises and military and military exchange allows the presence of the US in the region. However, the PLA is actively involved in the Shanghai Cooperation Organization (SCO) and other multinational organizations which show their resolve to lead regional affairs. The US should also improve their cooperation and exchange within the region. For example, Singapore, Malaysia and Indonesia possess crucial locations for the Malacca Strait where they have the ability to deny the ex-Varyag entry into the Indian Ocean. The US should concentrate on current military cooperation framework to strengthen their defense capability and bring these countries into the ASB mission. So that the US will build an "ASB Great Wall" from Japan to Australia, block and deny the PLA Navy's expansion ambitions.

Conclusion

The PRC took seven decades to rebuild China from the wreck after the Chinese civil war to become the world's second-largest economy. China is the only country that can compete with the US today. Some people may still ignore the influence of the ex-Varyag. If we take a deep look at these issues, we can find the ex-Varyag is not only evidence of their military ambition, but it also represents China's first step to becoming the Supernova and the greatest Sea Power in the world.

The ex-Varyag conducted its third sea trial in January 2012 and may deploy in the next PLA Army day of 1 August 2012.⁵² The tempo of the ex-Varyag seems faster than the previous estimate. Countries that will be affected by the deployment of China's first aircraft carrier should begin preparing now. In the national grand strategy, the ROC government should use this current favorable atmosphere as a window of opportunity by using soft power to improve the understanding and military confidence between both sides. Meanwhile, the ROC should apply hard power to promote the PRC self defense capability. The US has already developed the ASB concept to conquer the challenge from the PLA's A2/AD combat. However, they should also strengthen the relationship with alliances and develop an anti-PLA strategy. By the means of combined soft and hard power, the ex-Varyag nightmare will no longer exist.

Endnotes

¹ People's Daily on Line, "Socialism with Chinese Characteristics", <http://english.peopledaily.com.cn/90002/92169/92211/6275043.html> (accessed September 10, 2011)

² Andrew Erickson & Gabe Collins, "China's S-Shaped Threat," September 06, 2011. <http://the-diplomat.com/2011/09/06/chinas-s-shaped-threat/> (accessed October 10, 2011).

³ Asia Pacific Defense Forum, "Strategic triangle", http://apdforum.com/en_GB/article/rmiap/articles/print/features/2011/04/01/feature-06 (accessed October 10,2011)

⁴ Sanjay Kumar, "Why the SCO matters," June 29, 2011, <http://the-diplomat.com/indian-decade/2011/06/29/why-the-sco-matters/> (accessed October 10, 2011).

⁵ Shih Hsiu-chuan, "ROC 100: Ma calls on China to emulate Taiwan," October 11, 2011, <http://www.taipeitimes.com/News/front/archives/2011/10/11/2003515439> (accessed October 10, 2011).

⁶ Wang Jyh-perng, "Is there significance in a name?" June 13, 2011, <http://www.taipeitimes.com/News/editorials/archives/2011/06/13/2003505634/1> (accessed October 31, 2011).

⁷ Foreign Affairs, "China's Global Hunt for Energy," <http://www.foreignaffairs.com/articles/61017/david-zweig-and-bi-jianhai/chinas-global-hunt-for-energy>.(accessed October 15, 2011).

⁸ Energy Information Administration, "Country Analysis Brief, South China Sea" http://www.eia.gov/EMEUCabs/South_China_Sea/pdf.pdf (accessed January 7,2012)

⁹ The South China Sea Institute of Oceanlogy,Chinese Academy of Sciences Home Page, <http://english.scsio.cas.cn/au/bi/> (accessed November 19, 2011).

¹⁰ China Military Power Mash up, "China's first aircraft carrier to serve in South China Sea ", <http://www.china-defense-mashup.com/chinas-first-aircraft-carrier-to-serve-in-south-china-sea.html> (accessed October 25,2011)

¹¹ Katherine Evangelista, "Philippine military downplays China's aircraft carrier," Philippine Daily Inquirer, July 28, 2001, <http://globalnation.inquirer.net/7417/philippine-military-downplays-china%E2%80%99s-aircraft-carrier> (accessed November 10, 2011).

¹² Global Security.Org , " China's defense Budget," <http://www.globalsecurity.org/military/world/china/budget.htm> (accesses February 13,2012)

¹³ Office of the Secretary of Defense, Military and Security Developments Involving the People's Republic of China 2010 (Washington DC: Office of the Secretary of Defense, 2010)

¹⁴ Office of the Secretary of Defense, Military and Security Developments Involving the People's Republic of China 2010 (Washington DC: Office of the Secretary of Defense, 2010), 37.

¹⁵ Bonnie S. Glaser, "Is China's Aircraft Carrier a Threat to U.S. interests?" August 11, 2011, <http://csis.org/publication/chinas-aircraft-carrier-threat-us-interests>. (accessed October 21, 2011).

¹⁶ World Free News, "Global balance of power: China sails new Aircraft Carrier to begin sea trails," <http://worldfreenews.com/global-balance-of-power-china-sails-new-aircraft-carrier-to-begin-sea-trials/> (accessed August 15, 2011).

¹⁷ Bonnie S. Glaser, "Is China's Aircraft Carrier a Threat to U.S. Interests?" August 11, 2011, <http://csis.org/publication/chinas-aircraft-carrier-threat-us-interests> (accessed November 23, 2011).

¹⁸ Hu Yinan and Li Xiaokun, "Carrier set for maiden voyage," China Daily, June 28, 2011.

¹⁹ Prosecutorial View, "海上巨无霸" 2011-15, <http://www.cnki.com.cn/Article/CJFDTotalsPMF201115033.htm>

²⁰ Agence France, "Chinese General: Country Needs 3 Carriers," Defense News, July 30, 2011, <http://www.defensenews.com/article/20110730/DEFSECT03/107300302/Chinese-General-Country-Needs-3-Carriers> (assessed January 10, 2012)

²¹ Bill Gertz, "China begins to build its own aircraft carrier," The Washington Times, August 1, 2011, <http://www.washingtontimes.com/news/2011/aug/1/china-begins-to-build-its-own-aircraft-carrier/> (accessed January 06, 2012)

²² China Military Power Mashup, "China's Varyag aircraft carrier sets its 2nd trial sail," <http://www.china-defense-mashup.com/chinas-varyag-aircraft-carrier-sets-its-2nd-trial-sail.html> (accessed November 20, 2011).

²³ Christopher Bodeen, "China: Rebuilt aircraft carrier is for research," Navy Times, July 27, 2011, <http://www.navytimes.com/news/2011/07/ap-china-rebuilt-aircraft-carrier-is-for-research-072711/> (assessed October 10, 2011)

²⁴ War Eye, "China will build four aircraft carrier battle groups in two stages," <http://wareye.com/china-will-build-four-aircraft-carrier-battle-groups-in-two-stages> (accessed November 22, 2011).

²⁵ Global Military, "Chinese J-15 carrier aircraft with Russian-made Su-33 technology," <http://www.global-military.com/chinese-j-15-carrier-aircraft-with-russian-made-su-33-technology.html> (accessed November 20, 2011).

²⁶ Global Military, "Posts Tagged J-15," <http://www.global-military.com/tag/j-15> (accessed November 10, 2011).

²⁷ Global Military, "Posts Tagged J-15," <http://www.global-military.com/tag/j-15> (accessed November 10, 2011).

²⁸ DEFENSETECH, "What Will China's Carrier Be Used For?" <http://defensetech.org/2011/12/06/what-will-chinas-carrier-be-used-for/> (assessed January 1, 2012)

²⁹ Huaxia.com, "Australian media: the U.S. attack submarine can still rampant in China's territorial waters," September 13, 2011, <http://big5.huaxia.com/thjq/jswz/2011/09/2582066.html> (assessed November 29, 2011)

³⁰ Mackenzie Eaglen and Jon Rodeback, "Submarine Arms Race in the Pacific: The Chinese Challenge to U.S. Undersea Supremacy," February 2, 2010, <http://www.heritage.org/research/reports/2010/02/submarine-arms-race-in-the-pacific-the-chinese-challenge-to-us-undersea-supremacy> (assessed January 3, 2012)

³¹ David Axe, "China's Overhyped Sub Threat," October 20, 2011, <http://the-diplomat.com/2011/10/20/china%E2%80%99s-overhyped-submarine-threat/> (assessed October 10,2011)

³² David Axe, "China's Noisy Subs Get Buiser-And Easier to Track," December 27, 2011, <http://www.wired.com/dangerroom/2011/12/china-submarines/> (accessed January 2,2012)

³³ James Dunnigan, "China Builds A Different Kind Of Carrier Air Wing," February 17, 2011, <http://www.strategypage.com/dls/articles/China-Builds-A-Different-Kind-Of-Carrier-Air-Wing-2-17-2011.asp> (assessed December 12,2011)

³⁴ Sino defense.com, "Ka-28 Helix Naval Helicopter," <http://www.sinodefence.com/airforce/helicopter/ka28.asp> (assessed December 21,2011)

³⁵ Department of Defense of the Republic of China, Defense White Paper (Taipei: Department of Defense of the Republic of China, 2011), 20.

³⁶ Wendell Minnick, "Taiwan's 'Carrier Killer' Aims To Sink China's Carrier," Defense News, August 10, 2011.

³⁷ People's Daily Online, "Taiwan Hsiung Feng III missile enough to counteract mainland?," May 9,2011, <http://www.peopleforum.cn/viewthread.php?tid=92611&page=1&authorid=7160> (accessed November 13, 2011).

³⁸ Brian Hsu, "Analysts doubt military's denials on cruise missiles," Taipei Times, July 02, 2011.

³⁹ Jens Kastner, "Taiwan subs plan tests the waters," Asia Times, July 01, 2011.

⁴⁰ Department of Defense of the Republic of China, Defense White Paper (Taipei: Department of Defense of the Republic of China, 2011), 89.

⁴¹ Huaxia.com, "Kanwa Information Center said J-15 had already reach the tactical performance standard," <http://big5.huaxia.com/zt/js/11-033/2684128.html> (accessed November 10, 2011).

⁴² John Martin, "AIT confirms PAC-3 missiles sale to Taiwan," The China Post, January 08, 2011, <http://www.chinapost.com.tw/taiwan/national/national-news/2010/01/08/239845/AIT-confirms.htm> (assessed October 10,2011)

⁴³ Lu I-cheng, "President Ma Speaks about U.S.-Taiwan Relations," China Times, May 23, 2011, <http://watchingamerica.com/News/105607/president-ma-speaks-about-u-s-taiwan-relations/> (assessed September 9,2011)

⁴⁴ Wendell Minnick, "CBM Obstacles for China and Taiwan," Defense News, October 14, 2011.

⁴⁵ Bonnie S. Glaser, Military Confidence-Building Measures: Averting Accidents and Building Trust in the Taiwan Strait (Washing-ton, DC: American Foreign Policy Interests, 27: 91–104, 2005), 9.

⁴⁶ Eric S. Morse, " President Ma's Cross-Strait Strategy: The Tiger's New Posture," <http://nationalstrategy.com/Portals/0/documents/NSFR%20Blog/President%20Ma's%20Cross-Strait%20Strategy.pdf> (accessed December 23, 2011).

⁴⁷ Frederik Van Lokeren, "Shifts in the naval balance of the Pacific," April 22, 1994, <http://gcreport.com/index.php/analysis/188-shifts-in-the-naval-balance-of-the-pacific> (accessed August 23, 2011).

⁴⁸ Center for Strategic and Budgetary Assessments, "AirSea Battle," <http://www.csbaonline.org/wp-content/uploads/2010/05/2010.05.18-AirSea-Battle-Slides.pdf> (accessed June 13, 2005).

⁴⁹ Jan van Tol, AirSea Battle A Point-of-Departure Operational Concept (Washington, DC: Center for Strategic and Budgetary, 2010), xi.

⁵⁰ Caren Bohan and James Grubel, " Obama boosts U.S. military in Australia, reassures China," Reuters, November 16, 2011.

⁵¹ CHRISTOPHER P. CAVAS, "Taiwan Air-Sea Battle Office a Nexus of Networking," Defense News, November 09, 2011.

⁵² Huaxia.com, " Medias said China's Aircraft carrier will deploy in South China Sea, command by the CMC," <http://big5.huaxia.com/zt/js/11-033/2544210.html> (accessed November 29, 2011).