

NIDS CHINA SECURITY REPORT

NIDS China Security Report 2016

The Expanding Scope of PLA Activities and the PLA Strategy



National Institute for Defense Studies, Japan

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Preface

The *NIDS China Security Report* published by the National Institute for Defense Studies (NIDS) is widely distributed in Japan and abroad to provide analysis conducted by NIDS researchers on China's military affairs and security from a mid- to long-term perspective. Since its first publication in March 2011, the *NIDS China Security Report* has been offered annually in Japanese, English, and Chinese editions and has attracted significant interest from research institutions and the media in Japan and overseas. The analysis offered in these reports has allowed NIDS to promote exchange and dialogue with research institutions and interested parties in a variety of countries, including China.

The current *NIDS China Security Report 2016* is the sixth annual edition, and as indicated by its subtitle, "The Expanding Scope of PLA Activities and the PLA Strategy," it examines the major influence the People's Liberation Army (PLA) exerts on security in the region through the PLA Navy (PLAN), Air Force (PLAAF), and Second Artillery Force (PLASAF; reorganized into the PLA Rocket Force at the end of December 2015). Each of these services has its own basic strategy, and the Report analyzes the overall trend toward greater military strength accompanying efforts to put those strategies fully into effect. It also analyzes the implications for security in East Asia represented by the PLA's current situation as well as the trend toward the joint operation of these various services. The Report's authors had the opportunity to engage in an exchange of opinions with researchers and other specialists in China and other countries and drew on the views provided to assist in their efforts to present an objective analysis. The endnotes provide information on the specific primary and secondary materials referred to in the Report's writing.

The *NIDS China Security Report 2016* has been written solely from the viewpoints of the individual researchers and does not represent an official view of the Japanese Government, the Ministry of Defense, or NIDS. Writing was conducted by Masafumi Iida, who was the lead author and responsible for Chapters 1 and 4, and Shinji Yamaguchi, who authored Chapters 2 and 3. Editing was conducted by editor-in-chief Tetsuo Murooka and Koichi Arie, Sukeyuki Ichimasa, Keiko Kono, Haruhiko Takada, Hideo Tomikawa, and Rira Momma.

The title of the previous edition was the *NIDS China Security Report 2014*, which was published in March 2015 and indicated the Japanese fiscal year, but beginning with this edition, the *NIDS China Security Report 2016*, the title will reflect the actual year of publication.

The authors of the *NIDS China Security Report 2016* hope that it will promote policy discussions concerning China in Japan and other countries, and at the same time they hope that the Report will contribute to a deepening of dialogue and exchange as well as cooperation between Japan and China regarding security.

March 2016

Tetsuo Murooka

Director, Security Studies Department

The National Institute for Defense Studies

Chapter Summary

Chapter 1 Strengthening Operational Capabilities in Open Seas

– The PLAN

Since its establishment, the People’s Liberation Army Navy (PLAN) has changed its strategy from “coastal defense and inshore defense” to “offshore defense” and later to a combination of “offshore defense and open seas defense (protection).” At the same time, it has been expanding its area of operations from the coastal areas of the Chinese continent to the East China Sea and South China Sea, and even further to the Western Pacific and Indian Ocean. The PLAN is constructing a new indigenous aircraft carrier and taking other steps to rapidly modernize its surface combatants, submarines and aircraft, while steadily enhancing its operational capabilities in open seas. From now on, it can be expected to strengthen its presence in the offshore waters and airspace with the aim of establishing superiority in disputes over territorial sovereignty and maritime rights and interests. In order to prevent interference by the United States in China’s “core interests,” it will probably deploy new nuclear-powered submarines and destroyers equipped with high-performance anti-ship missiles, as well as strengthening its intelligence, surveillance, and reconnaissance (ISR) capabilities in the Western Pacific. It is also expected to advance into the Indian Ocean to protect Chinese companies and citizens overseas and important sea lines of communication.

Chapter 2 Revising Its Strategic Posture and Expanding Capabilities

– The PLAAF

The PLA Air Force (PLAAF) is transitioning from its traditional role of territorial air defense to a stance which covers a wider range of responsibilities, foremost of which is preparing for simultaneous offensive and defensive roles. The PLAAF is becoming more active over the open seas and in 2015 carried out its first training exercises over the Western Pacific when it passed through the Bashi Channel. Such an expansion of PLAAF activities is supported by the modernization of its equipment. It is moving forward with emphasis on adoption of fourth-generation jet fighters, mainly through import from Russia, and introduction of combat aircraft capable of air-to-ground attack. It is also seeking to increase the range of bombers which can be mounted with long-range cruise missiles. Other areas for emphasis include expansion of ISR capabilities and introduction of a variety of combat support aircraft, including airborne early warning, command, and control systems. Trends for future emphasis will likely include expansion of large transport and refueling planes, an area where the PLAAF has been weak; strengthening its attack capabilities by using for example stealth aircraft and unmanned attack aircraft; introduction of air defense and missile defense sys-

tems; and development of the ability to direct attacks against targets in space.

Chapter 3 Expanding and Strengthening Its Missile Capabilities – The PLASAF

The PLA Second Artillery Force (PLASAF; reorganized into the PLA Rocket Force at the end of December 2015) has moved from a military branch dealing only with nuclear weapons to a service which possesses both nuclear and conventional forces. China's nuclear strategy can be characterized by preeminence of the political, a declaration of no first use, a gradual increase in the number of warheads, and removal and separate storage of nuclear warheads during peacetime. It seeks to maintain a reliable second strike capability and is working to make qualitative improvements in its nuclear force. It is converting its reserves of ballistic missiles to solid fuel, is transitioning to vehicle-borne mobile launch capacity, and is making progress in introduction of multiple independently-targetable reentry vehicles (MIRVs). Future matters for international attention will include whether China can maintain its adherence to the no-first-use principle.

The PLASAF's most conspicuous trend since the 1990s has been the great expansion in its conventional missile force. Unlike nuclear missiles, conventional missiles are premised on being used in strikes, with the emphasis on taking the initiative in conducting precision strikes on the enemy where he is vulnerable, on the nodes of the enemy's command, control, communications, computers, intelligence, surveillance, reconnaissance (C4ISR) and force projection systems. The PLASAF is seeking to fill out its short-range and intermediate-range ballistic missile reserves and is improving its precision strike capabilities with conventional missiles. International attention is also being directed at PLASAF increases in its cruise missiles capable of being mounted on sea-borne and air-borne platforms. Such improvement in its missile force preparedness is key to China's anti-access and area denial (A2AD) capabilities and is a focus of international attention. Such development in China's missile force further complicates the regional security environment, and close attention must be directed to its future directions.

Chapter 4 Enhancement of the PLA's Joint Operational Capabilities

In a defense white paper discussing military strategy, the PLA has clearly indicated the posture of focusing on "winning informationized local wars" and "maritime military struggle." The PLA is enhancing its "capabilities for system-versus-system operations based on information systems" with the aim of gaining victory in "informationized warfare" in which the use of information plays a decisive role and which differs from "mechanized warfare," in which material factors such as weapons, equipment, ammunition and fuel decide the outcome. Regarding information systems, the PLA is promoting the efficient military use of

outer space with the aims of improving its ISR capabilities, realizing efficient command and control, and enhancing its network and electromagnetic combat capabilities. In order to enhance its system-versus-system operational capabilities, it is aiming to dramatically improve combat effectiveness through joint operations by the Army, Navy, Air Force and Second Artillery Force. To realize these strategies, Xi Jinping is promoting reforms in the command and force structures of the armed forces, including the establishment of the PLA Army general command, the PLA Rocket Force, and the PLA Strategic Support Force, as well as the reorganization of the Central Military Commission. Close attention will be paid to whether or not these reforms proceed smoothly from now on.

Preface

Chapter Summary

Introduction

Chapter 1

Chapter 2

Chapter 3

Chapter 4

Conclusions

Acronyms and Abbreviations

AIP	air-independent propulsion
ASW	anti-submarine warfare
A2AD	anti-access and area denial
SSBN	nuclear-powered ballistic missile submarine
CCP	Chinese Communist Party
CEP	circular error probability
CMC	Central Military Commission
C4ISR	command, control, communications, computers, intelligence, surveillance, and reconnaissance
EU	European Union
HALE	high-altitude long-endurance
HGV	hypersonic glide vehicle
ICBM	Intercontinental Ballistic Missile
INF	Intermediate-Range Nuclear Forces
ISR	intelligence, surveillance, and reconnaissance
IT	information technology
JSDF	Japan Self-Defense Forces
MIRV	multiple independently-targetable reentry vehicles
PLA	People's Liberation Army
PLAAF	People's Liberation Army Air Force
PLAN	People's Liberation Army Navy
PLASAF	People's Liberation Army Second Artillery Force
PMS	preparation for military struggle
PRC	People's Republic of China
R&D	research and development
RIMPAC	Rim of the Pacific Exercise
SAR	synthetic aperture radar
SLBM	submarine-launched ballistic missile
SSN	nuclear-powered attack submarine
TEL	transporter erector launcher
UAV	unmanned aerial vehicle
UN	United Nations
US	United States
USSR	Union of Soviet Socialist Republics

NIDS China Security Report 2016

The Expanding Scope of PLA Activities and the PLA Strategy

Introduction



Introduction

The Chinese People's Liberation Army (PLA) has made itself very clearly a role player on the seas and in the skies of East Asia. Its Air Force, primarily its fighters, is making ever more frequent flights over the East China Sea, and Japan's Air Self-Defense Force scrambles to Chinese aircraft have increased at a rapid pace as well, from thirty-eight in 2009 to 464 in 2014. China's Navy has conducted repeated live-fire exercises and amphibious landing training in the South China Sea from around 2010. In the Western Pacific, the PLA Navy (PLAN) has regularly carried out fleet exercises beginning in 2008, and more recently it has raised the level of training exercises by including military aircraft. The range of PLA activities has also been expanding beyond East Asia: beginning in 2009, the PLAN has taken part in anti-piracy activities in the Gulf of Aden and off Somalia, and conducted joint exercises with Russia in the Mediterranean in 2015.

The PLA has thus been increasing the quantity and the range of its activities. In doing so it has increased the danger of unintentional accidents or collisions, and some of its activities have appeared threatening to other countries, arousing international concerns. For example, in the East China Sea, Chinese naval vessels have locked onto a Japan Self-Defense Forces (JSDF) destroyer with fire control radar, and Chinese fighters at times have flown inordinately close to JSDF aircraft. In the South China Sea, Chinese naval craft have obstructed the course of US Navy vessels, while Chinese fighters have at times drawn dangerously close to US patrol aircraft. In May 2014, China unilaterally conducted drilling activities in the sea near the Paracel Islands, which are claimed by Vietnam, and in response, Vietnam dispatched patrol boats to the vicinity; Chinese naval vessels in return directed threatening pressure against Vietnam by sending warships to the area. Such oppressive actions by the PLA have been particularly marked in East Asia.

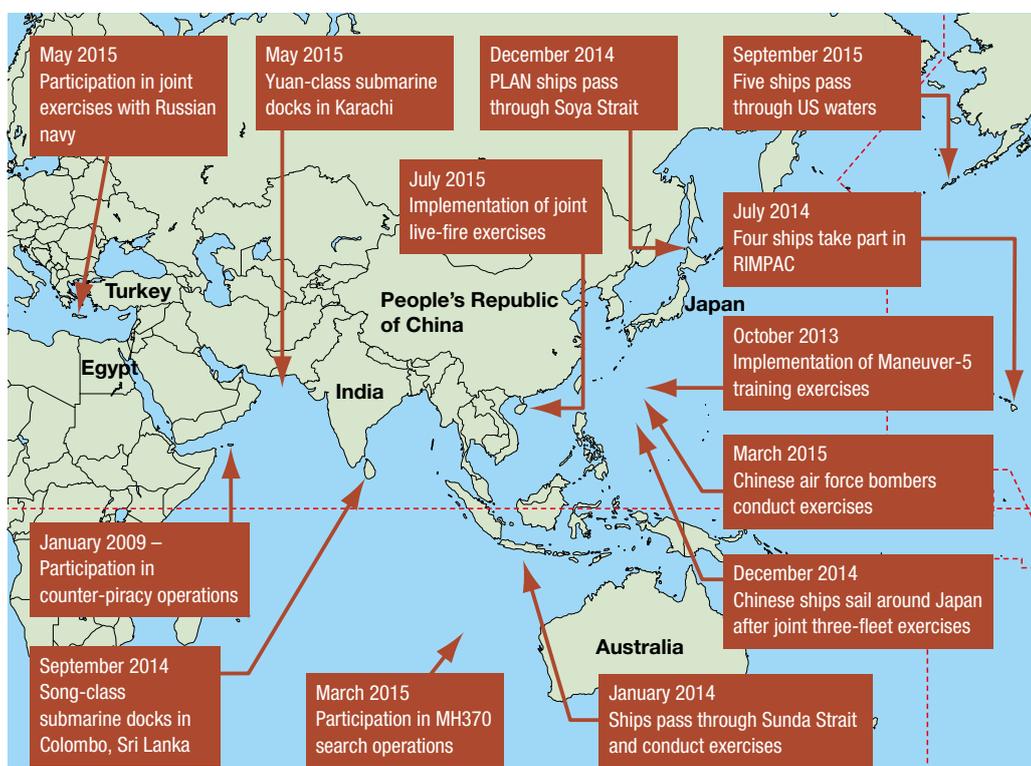
At the same time that it has been expanding its activities, the PLA has pushed forward with rapid modernization of its equipment. China's announced national defense expenditures from its national budget for fiscal 2015 were 889.6 billion yuan (approximately \$140 billion), some 3.6 times the level of ten years earlier. Against such huge national defense expenditures, which dwarf the spending of other countries in East Asia, the PLA has developed and introduced a series of new weapons and systems, including aircraft carriers, new models of bombers, stealth fighters, and ballistic and cruise missiles, steadily increasing its force projection capabilities and ability to conduct long-range precision strikes. In addition, China has also devoted efforts to informationization of its military, for example strengthening its military information systems by bolstering its ability to operate in space and cyberspace. Perhaps the most obvious characteristic of the security environment in East Asia in

recent years has been the rapidly expanding military might of the PLA and the growing scale of its activities, part of which seem to be inviting friction with the surrounding countries.

As the PLA expands both the level and the range of its activities, what influence will its actions and the friction they could cause with China's neighbors have on future security in East Asia? To answer this question, it is indispensable to consider what kind of goals the PLA has set for itself and how it proposes to go about achieving those goals. In other words, it is important to seek to identify what kind of strategy the PLA has set for itself. Identifying the PLA strategy will make it easier to interpret the intentions behind its actions, which in turn should be helpful in controlling possible crises caused by accidents and unintentional confrontations and in considering what stance should be taken toward China in order to maintain order in the regional security environment in the middle to long term.

With the above considerations in mind, this report seeks to analyze the strategy of the PLA and the resultant development of its equipment and the content of its activities, in order to examine the PLA's trends for the future and consider what influence it could have on the future of security in East Asia. The specific targets for analysis are the various services of China's military which exercise a strong direct influence on East Asian security. Chapter 1 deals with the PLAN, Chapter 2 with the PLA Air Force (PLASAF; reorganized into the PLA Rocket Force at the end of December 2015), and Chapter 3 with the PLA Second

Figure 0-1: Examples of PLA's Expanding Operations



Source: Compiled from various media sources.

Artillery Force (PLASAF: reorganized into the PLA Rocket Force at the end of December 2015). Drawing on Chinese public documents and on a variety of research results as well, this report examines the strategies of the various services, analyzes the characteristics of their equipment development and activities, and considers where the services could head in the future. Chapter 4 first examines the overall strategy of the PLA and then looks at the trend toward joint operations of the various services and branches, finally dealing with topics of reforming its overall command and force structures.

The authors of this report hope it will respond to the growing interest in Japan and abroad regarding the activities of the PLA and also facilitate dialogue with China regarding the maintenance and reinforcement of stability in East Asia.

(Author: Masafumi Iida)

Chapter 1

Strengthening Operational Capabilities in Open Seas —The PLAN



1. China's Changing Naval Strategy

The People's Liberation Army Navy (PLAN) was established on April 23, 1949. In 1950, Mao Zedong made a speech calling for the construction of a powerful navy.¹ In 1952, he outlined the three strategic missions of the PLAN: (1) To eliminate interference by "sea bandits" (Nationalists) and ensure safe navigation for China's maritime traffic; (2) To recover Taiwan when the time was ripe and prepare for its ultimate reunification with China; and (3) To build up sufficient strength to resist imperialist invasion from the sea.²

The strategy of the PLAN has gradually changed since the time of its establishment. According to the 2013 edition of *The Science of Military Strategy*, a comprehensive research report on China's military strategy compiled by the Department of War Theory and Strategic Research of the PLA Academy of Military Science, the changes in China's naval strategy can be divided into three periods.³

The first period was from 1949 to the end of the 1970s. Naval strategy during this period is described as "coastal defense and inshore defense." For the Chinese Communist Party (CCP) government, which had just founded the People's Republic of China (PRC) in 1949, the main threats to maritime security were infiltration by the Nationalist Army and the blockade of sea lines of communication. Until the mid-1950s, however, the PLAN still lagged behind in both equipment and capabilities. Incapable of conducting independent missions, it was confined to operating in coastal regions in coordination with the army and air force. During this period, "coastal defense" strategy meant no more than the limited extension of land engagements to coastal areas. However, as the PLAN's equipment gradually improved and it became able to conduct independent sea operations, a slight shift in strategy occurred from "coastal defense" limited to an extension of land engagements to "inshore defense" based on the assumption of independent maritime engagements.

The second period was from the 1980s until the beginning of the 21st century. Naval strategy during this period is described as "offshore defense." In July 1979 Deng Xiaoping, who had just wrested power from Mao Zedong's named successor, Hua Guofeng, and was in the process of consolidating his position as China's supreme leader, announced that "offshore defense" was to be the strategy of the PLAN. In response to this statement, the navy studied this new strategy under the direction of its commander, Admiral Liu Huaqing, and the offshore defense strategy was officially established at the end of 1985.⁴ This offshore defense strategy can be divided into five main points. Firstly, offshore defense is a regional defense strategy that differs from far seas invasion or coastal defense. Secondly, offshore defense is essentially of a defensive nature, and this is not subject to change in the future. Thirdly, the PLAN's area of operations is mainly the waters around the first island chain⁵,

and the Yellow Sea, East China Sea and South China Sea within this chain of archipelagos. Fourthly, the objectives of this strategy are national unification, protection of territories, safeguarding of maritime rights and interests, and deterrence and defense against imperialist or hegemonist invasion by sea. Fifthly, the navy’s operations are divided into missions in peacetime and ones in wartime. In peacetime, the navy’s main missions include realizing national unification, protecting China’s territorial sovereignty and maritime rights and interests, contributing to national diplomatic policies, deterring invasion by sea, and responding to maritime conflicts. In wartime, its main missions include effectively combating enemy invasion by sea, protecting sea lines of communication, and taking part in counter-offensive operations using nuclear weapons.

The third period is from 2004 to the present day. While maintaining its strategy of offshore defense, the PLAN added open seas defense to adopt a strategy of both offshore defense and open seas defense. The background to this new emphasis on open seas defense seems to be the expansion of important maritime interests that China considers necessary to protect. With the rapid development of the Chinese economy, it is becoming important for China to safeguard maritime rights and interests such as the stability of sea lines of communication essential for the import and export of raw materials and products, and the development of seabed oil and gas resources. Now that the scope of China’s maritime interests has expanded to sea areas beyond its “offshore” waters, it is considered necessary for the PLAN to be capable of responding to military threats to China’s national interests in sea areas out-

Table 1-1: Changes in PLAN Strategy

Period	Strategy	Outline
1950s to 1970s	Coastal defense / Inshore defense	Main area of operations: coastal and inshore areas not far from the mainland. Main objectives: supporting land engagements, preventing enemy infiltration from sea, etc.
1980s to beginning of 2000s	Offshore defense	Main area of operations: Yellow Sea, East China Sea and South China Sea. Main objectives: prevention of enemy invasion, national unification, safeguarding of territory, protection of sea lines of communication, protection of maritime rights and interests.
Beginning of 2000s –	Offshore defense / Open seas defense	Main area of operations: open seas in addition to offshore waters. Main objectives: While maintaining and strengthening offshore defense strategies, safeguarding China’s interests overseas and being ready to counterattack with nuclear weapons, participating in international security cooperation, etc.

Source: Based on 军事科学院军事战略研究部 [Department of War Theory and Strategic Research, PLA Academy of Military Sciences], ed., 战略学 (2013) [The Science of Military Strategy, 2013 Edition], 军事科学出版社 [Military Science Press], 2013, pp. 207-209.

side its “offshore” waters in order to protect these interests.⁶

Based on this strategy of offshore defense and open seas defense, *The Science of Military Strategy* lists the following eight main missions that the PLAN should perform.⁷

(1) Participation in large-scale strategic operations

In the event of war, using various operations to prevent incursion by a powerful enemy, such as striking with its firepower and establishing sea and air blockades, the PLAN will be required to resolutely defend China’s national unity by seizing overall domination of the theater of war, controlling the war situation, and gaining victory.

(2) Deterring and stopping military invasion by sea

Since modern times, almost all invasions of China have come from the sea. Preventing invasion from the sea by an external enemy is considered to be a fundamental strategic mission of the PLAN. Since it is assumed that any future invasion of the Chinese mainland by a foreign country will involve a precise large-scale attack from medium to long range, the navy will be expected to actively deploy its forces forward, extend its forces in depth to hold or attack the enemy, and exert strategic deterrence and strike capability.

(3) Protecting the sovereignty of islands and maritime rights and interests

China takes the view that a sea area of about 1.5 million square kilometers over which it claims jurisdiction is in effect controlled by foreign nations, that more than 50 of its islands are occupied by foreign nations, that this sea area has been divided up, and that its resources are being seized. Based on this understanding, it is the PLAN’s mission to effectively protect China’s sovereign interests in these waters, prevent infringement of its interests and illegal activities in these waters, and ensure the normal operation of China’s maritime production, development, and scientific research activities.

(4) Ensuring the safety of navigation and maritime transportation

The Chinese economy is more than 60 percent dependent on trade, more than 50 percent dependent on imports for crude oil and iron ore, and over 90 percent of its trade depends on maritime transportation. Since sea lines of communication are lifelines for China’s economic and social development, it is feared that they could be severed if a maritime crisis or war were to occur. Therefore, protecting sea lines of communication and ensuring the safety of navigation and maritime transportation are viewed as an important mission for the PLAN.

(5) Protecting overseas interests and citizens’ interests

With the globalization of the Chinese economy, Chinese organizations, personnel and

assets are being rapidly deployed overseas. As a result, safety issues overseas are coming increasingly to the fore, and cases of Chinese assets being violated or Chinese citizens' lives being put in danger are tending to increase. The protection of the nation's overseas interests and its citizens' interests is becoming one of the responsibilities of the PLAN.

(6) Implementing nuclear deterrence and counterattack

Sea-based nuclear capability is an important element of China's nuclear capability and its capacity is said to be increasing constantly. The possibility of a nuclear threat or attack against China in the future by another nuclear state cannot be denied. Making full use of submarine nuclear capability with a large operational range, a high level of secrecy, and outstanding strike capability, the PLAN is expected to actively demonstrate its readiness to use nuclear weapons and implement a nuclear counterattack and to crush any enemy threats or intent to attack using nuclear weapons.

(7) Providing support in military conflicts on land

Although China's land borders are generally secure, elements of insecurity remain and there are possibilities of a crisis occurring or even leading to a military clash or war. In such circumstances, providing support for operations on land by the army, etc. by actively deploying threats and operations from the sea is also viewed as a mission of the PLAN.

(8) Protecting the security of international maritime areas

The sea is rich repository of precious resources for humankind as well as providing vital traffic routes. As a major power with global influence, the part China plays in the security of maritime areas not only contributes to its own national interests but also serves to fulfill its international responsibilities. The PLAN is therefore expected to undertake the mission of protecting international maritime security.

According to *China's Military Strategy*, China's defense white paper published in May 2015, the PLAN is shifting its focus from offshore defense to the combination of offshore defense and open seas protection.⁸ The background to the change of wording from "open seas defense" to "open seas protection" may be the wish to emphasize the aspect of international cooperation in the far seas operations of the PLAN in view of its operations to protect commercial shipping off the coast of Somalia and in the Gulf of Aden.

2. Increasingly Active Naval Operations over a Wider Area

In line with the strategy of offshore defense and open seas defense (protection), the PLAN has been extending its operational range into far seas in recent years, and its activities have been expanding in both quantity and quality. In offshore waters, it is strengthening its operations particularly in the South China Sea. In July 2010, vessels of the South Sea Fleet, together with destroyers from the North Sea Fleet and East Sea Fleet, conducted large-scale joint live-fire exercises in the South China Sea. Observed by the then PLA Chief of General Staff, General Chen Bingde, these exercises included air-defense, anti-ship and anti-submarine operations, in which 16 types of missiles were fired a total of 71 times.⁹

In July 2015, the PLAN again conducted large-scale live-fire exercises in the South China Sea. More than 100 warships and several dozen aircraft, the Second Artillery Force missile battalions, and the electronic countermeasures unit of the Guangzhou Military Region took part in these exercises, in which the participants were divided into friendly and hostile forces and conducted live-fire combat exercises. It is reported that, in these exercises, various types of missiles and torpedoes were fired several dozen times and that several thousand shells and bullets were fired.¹⁰ In view of a PLAN spokesperson's statement that "we will continue to conduct similar drills and exercises in the future,"¹¹ it seems likely that such large-scale combat exercises in the South China Sea will be repeated.

In recent years the PLAN has repeatedly conducted large-scale island recapture exercises in the South China Sea. In March 2013, for example, a fleet led by the flagship *Jinggangshan*, a large dock landing ship, patrolled the South China Sea islands controlled by China, performed exercises in coordination with early-warning aircraft, fighters and bombers, and conducted an island landing exercise.¹² In July 2015, the naval landing ship detachment of the South Sea Fleet conducted joint exercises in the South China Sea together with the Marine Corps, Helicopter Corps, and Army Amphibious Corps. The new Pomornik-



Pomornik-class LCAC (IHS Jane's [online news module])

class amphibious landing hovercraft recently imported by the PLAN took part for the first time in these landing exercises. By landing troops of the Marine Corps and assault amphibious vehicles together with helicopters, the exercises were successful in gaining supremacy over the "enemy."¹³

Among its far seas operations

beyond offshore defense, China's advances into the Western Pacific and Indian Ocean are conspicuous. From 2008, formations consisting of multiple warships of the PLAN have regularly advanced through the Miyako Strait and Bashi Channel into the Western Pacific, where they have conducted various open seas exercises. In April 2010, ten PLAN vessels including *Sovremenny*-class destroyers and Kilo-class submarines entered the Western Pacific from the East China Sea via the Miyako Strait and conducted drills including ship-based helicopter flights and refueling at sea. During these drills, a Chinese helicopter flew dangerously close to the destroyer *Suzunami* of Japan's Maritime Self-Defense Force, which was engaged in surveillance activities.¹⁴

The PLAN's exercises in the Western Pacific seem to be evolving into more advanced exercises with actual battle conditions in mind. In October 2013, the People's Liberation Army (PLA) conducted large-scale joint field training exercises in the Western Pacific called Maneuver 5. Vessels of the North Sea Fleet and the East Sea Fleet coming from the Miyako Strait and vessels of the South China Fleet from the Bashi Channel both "broke through" the first island chain into the Western Pacific and conducted combat drills with the participation of early-warning aircraft and bombers from the Chinese mainland.¹⁵ In December 2014, the PLAN again conducted large-scale exercises in the Western Pacific involving vessels of all three fleets, intelligence-gathering aircraft, early-warning aircraft, and bombers.¹⁶ After the exercises had been completed, some of the participating ships sailed north from the Western Pacific, through the Soya Strait and into the Sea of Japan, where they sailed around the Japanese archipelago.¹⁷

In July 2014, at the invitation of the United States (US) as the organizing nation, the PLAN took part in the Rim of Pacific Exercise (RIMPAC) conducted around the Hawaiian Islands. A four-vessel Chinese flotilla consisting of a destroyer, frigate, supply ship, and hospital ship joined fleets from the US, Japan, Australia, and other nations in exercises that included firing, helicopter take-off and landing, maritime inspections, and search and rescue. After the completion of the RIMPAC, the hospital ship passed through the Panama Canal and provided medical assistance for certain Latin American countries.

The scope of the PLAN's operations is also expanding through the Strait of Malacca to the Indian Ocean and to the Middle East and Africa. Since January 2009, the PLAN has been taking part in international counter-piracy operations in the seas off the coast of Somalia and in the Gulf of Aden. As of September 2015, China has dispatched 21 task forces to this sea area. Vessels of the PLAN have been increasing their presence not only off the coast of Somalia



Sovremenny-class destroyer (Joint Staff Office of Japan)

and in the Gulf of Aden but also in the sea lines of communication in the Indian Ocean between this area and the Chinese mainland. While successfully enhancing its international image as a “responsible nation” through the PLAN’s continuous counter-piracy operations in the seas off the coast of Somalia and in the Gulf of Aden, China has also succeeded in strengthening its open seas operational capabilities by, for example, enhancing far seas command and logistical capabilities and verifying the performance of various weapons and equipment.¹⁸

The PLAN is also expanding its operations beyond the first island chain in the South China Sea to the sea area around Australia in the Indian Ocean. In January 2014, a training formation of three vessels of the South Sea Fleet, including a destroyer, crossed the South China Sea and advanced into the Java Sea and, after passing through the Sunda Strait, conducted exercises in the Indian Ocean to the north of Australia. The training formation then sailed north through the Lombok Strait and returned to port via the Western Pacific.¹⁹ In March 2014, in response to the disappearance of Malaysian Airlines Flight 370, the PLA conducted large-scale search operations in the Indian Ocean to the north of Australia, deploying nine vessels, six ship-based helicopters, five fixed-wing aircraft and more than ten satellites.²⁰

In these ways the PLAN has steadily expanded the scope of its operations. The background to this ability to strengthen operations both quantitatively and qualitatively is the steady modernization of the navy’s vessels, fighters and other equipment since the mid-1990s.²¹ In 1994, it commissioned the first Luhū (Type 052)-class destroyer in place of the Luda (Type 051)-class destroyer that had been the navy’s main destroyer up to then (a second Luhū-class destroyer was commissioned in 1996). In 1999, a Luhai (Type 051B)-class destroyer and a *Sovremenny*-class destroyer purchased from Russia were commissioned into service. Equipped with SS-N-22 Sunburn supersonic ship-to-ship missiles, the *Sovremenny*-class destroyer possesses powerful anti-ship assault capabilities. By 2006, the PLAN had four *Sovremenny*-class destroyers in service. In 2004, it commissioned two Luyang I (Type 052B)-class destroyers, the successor of the Luhū-class destroyer. In 2005, it commissioned the Luyang II (Type 052C)-class destroyer (nicknamed the “Chinese Aegis”), which enhanced the Type 052B’s defensive capabilities by equipping it with phased array radar and a vertical missile launch system. By 2014, six Luyang II-class destroyers were in service. In both 2006 and 2007, one Luzhou (Type 051C)-class destroyer, the successor of the Luhai-class destroyer, was commissioned into service. And in 2014, the PLAN commissioned its first Luyang III (Type 052D)-class destroyer, which is equipped with a highly advanced air defense system and a multipurpose vertical missile launch system.

The PLAN is also promoting the modernization of its frigates. In 1991 it commissioned the Jiangwei I (Type 053H2G)-class frigate, a new type of frigate that enabled the deployment of an anti-submarine helicopter. By 1994, four Jiangwei I-class frigates were

in service. In 1998, the PLAN introduced an improved model, the Jiangwei II (Type 053H3)-class frigate, ten of which were in service by 2005. In 2005, the first Jiangkai I (Type 054)-class frigate was commissioned, followed by another in 2006. In 2008, the Jiangkai II (Type 054A)-class frigate, featuring improvements such as a vertical missile launch system, was introduced, and by 2014 twenty vessels were in service. These new types of destroyer and frigate have actively participated in the PLAN's exercises in the Western Pacific and in its counter-piracy operations off the coast of Somalia. Together they constitute its core strength in far seas operations.

The modernization of submarines has also proceeded steadily. The PLAN purchased from Russia four Kilo-class submarines, a conventionally powered submarine with outstanding acoustic quietness, commissioning the first into service in 1995. In the mid-2000s, it introduced an improved Kilo-class submarine with further enhanced acoustic quietness and capable of firing SS-N-27 Sizzler anti-ship cruise missiles, increasing its Kilo-class fleet to 12 submarines. In 1999, the PLAN also introduced the new Chinese-built Song (Type 039 and Type 039G)-class diesel-electric attack submarine and 13 of them were in service by 2006, when it commissioned its new Yuan-class diesel-electric attack submarines (Type 041). The Yuan-class attack submarine is even quieter than the Song-class, is equipped with an air-independent propulsion (AIP) system, and is said to have the ability to stay underwater even longer. Twelve Yuan-class attack submarines were already in service by 2014, and the fleet is expected to increase to about 20 vessels.²²

The PLAN has also been deploying new nuclear-powered submarines. In 2007, it commissioned the Jin (Type 094)-class nuclear-powered ballistic missile submarine (SSBN). The Jin-class SSBN was developed to replace the Xia (Type 092)-class submarine, which had been introduced in the mid-1980s and was becoming obsolete. It is believed to be



Luyang II-class destroyer (Joint Staff Office of Japan)



Luyang III-class destroyer (IHS Jane's [online news module])

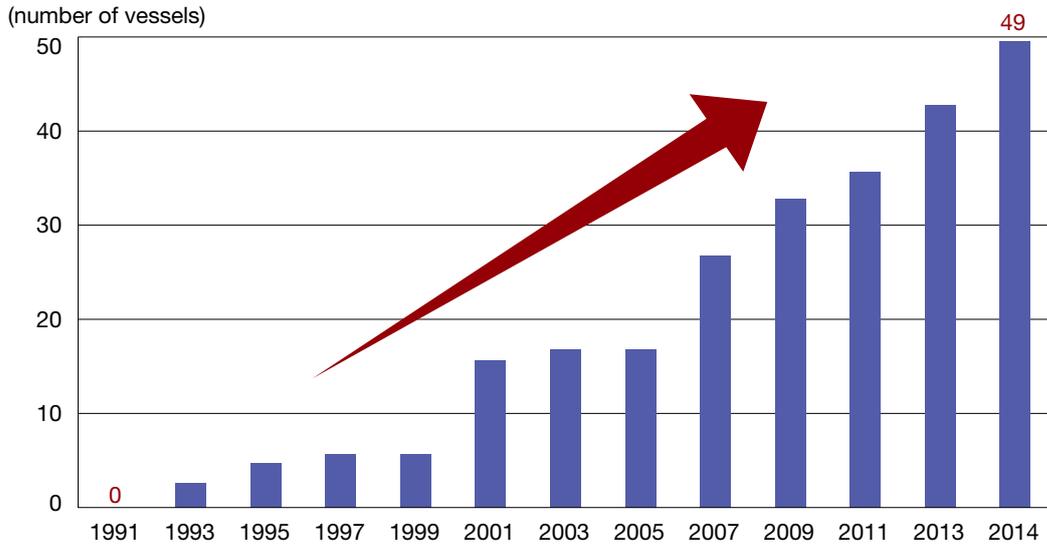


Luzhou-class destroyer (Joint Staff Office of Japan)



Jiangkai II-class frigate (Joint Staff Office of Japan)

Fig. 1-1: Trend in Numbers of New-type Destroyers and Frigates



Note: Total numbers of Luhu-class, Luhai-class, *Sovremenny*-class, Luyang-class and Luzhou-class destroyers and Jiangwei-class and Jiangkai-class frigates.

Source: Based on Japan Ministry of Defense, *China's National Defense Budget 2014* and International Institute for Strategic Studies (IISS), *Military Balance 2015* (London: IISS, 2015).

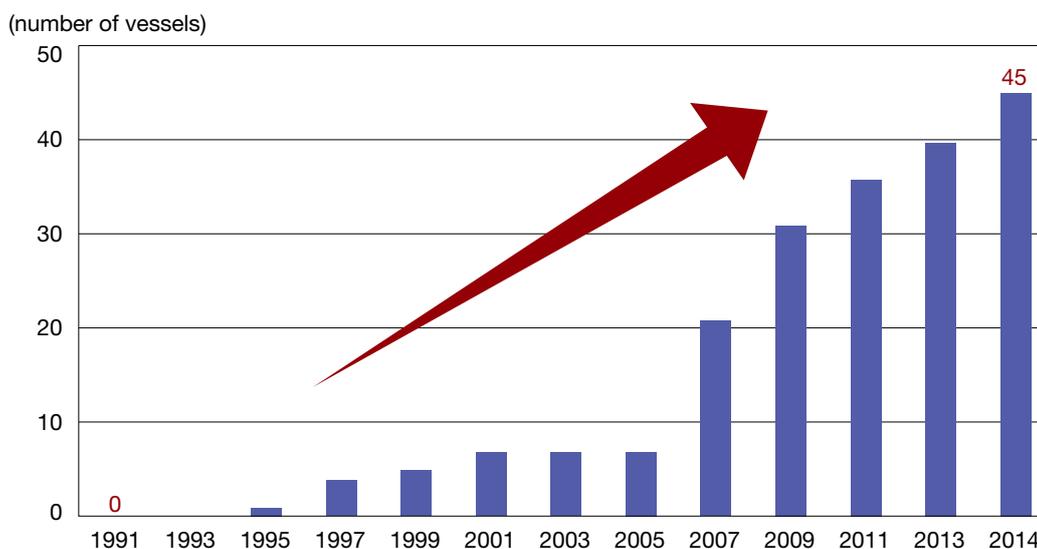


Jin-class ballistic missile nuclear submarine (IHS Jane's [online news module])

equipped with the new Julang-2 (JL-2) submarine-launched ballistic missile (SLBM), which is said to have a range of 8,000 kilometers. If this Jin-class submarine can be operated stably, it is expected to greatly improve China's nuclear deterrent capability.²³ By 2007, the PLAN had also commissioned two Shang (Type 093)-class nuclear-powered attack submarines (SSN) in place of its Han (Type 091)-class submarines. The PLAN is

also expected to increase its number of an improved type, 093A, the first of which was put into service in 2014.

In 2012, the PLAN commissioned into service its first aircraft carrier, the *Liaoning*. This was originally the *Varyag*, an ex-Soviet navy aircraft carrier that was being built in Ukraine. A Macau-based company purchased the carrier, and subsequently China conducted its own research and development on the vessel, and completed its construction at the Dalian naval shipyard. China has also developed and deployed carrier-based J-15 fighter planes, and has already conducted repeated carrier takeoff and landing exercises with the J-15 on the

Fig. 1-2: Trend in Numbers of New-type Submarines

Note: Total numbers of Jin-class, Shang-class, Song-class, Yuan-class and Kilo-class submarines.
 Source: Based on Japan Ministry of Defense, *China's National Defense Budget 2014* and International Institute for Strategic Studies (IISS), *Military Balance 2015* (London: IISS, 2015).

Liaoning. It is also reported that the PLAN is developing a new indigenous aircraft carrier; several military personnel have recently made statements acknowledging that such an aircraft carrier is under construction, and photos have been released showing what appears to be an aircraft carrier being built by China.²⁴ At the end of 2013, the *Liaoning* sailed from the Yellow Sea through the East China Sea to the South China Sea, where it took part in formation training exercises with consort ships in the seas around Hainan Island. However, in the course of these exercises, an incident occurred in which a PLAN landing ship got in the way of the guided missile cruiser USS *Cowpens*.²⁵ On December 31, 2015, a Defense Ministry spokesperson announced that China was constructing a new indigenous aircraft carrier in Dalian.²⁶

The PLAN has also been augmenting its force of surface combatants that are smaller than frigates. In 2004 it started commissioning the Houbei (Type 022)-class surface combatant, a twin-hulled fast attack craft that can move at very high speed. Sixty Houbei-class fast attack craft, each equipped with eight anti-ship missiles, have already been deployed. In 2013, the navy also began deploying the 1,500-ton Jiangdao (Type 056)-class corvette. Although it is a small vessel, the Jiangdao-class corvette is equipped with anti-ship missiles and torpedoes, has high versatility including on-board helicopter takeoff and landing capability, and is well suited for various missions in offshore waters. Twenty Jiangdao-class corvettes are already operational and it has been reported that the force will be augmented to 30-60 units.²⁷



H-6 bomber (Joint Staff Office of Japan)

At the same time, the PLAN is enhancing its air power.²⁸ In addition to a force of more than 100 fourth-generation jet fighters made up of J-10s, J-11s, and Su-30s, it has 30 H-6 bombers equipped with air-to-ship missiles. It is also thought to have early-warning aircraft modified from the Y-8 and Y-9 transport

aircraft, as well as intelligence-gathering aircraft and unmanned aerial vehicles (UAVs). The PLAN already has several anti-submarine helicopters, and it is reported that it has deployed the fixed-wing Gaoxin-6 anti-submarine aircraft, a modification of the Y-8 as it strives to further enhance its anti-submarine warfare (ASW) capabilities.²⁹

3. Future Development of the PLAN

Judging from trends such as the changes in strategy, expansion of scope of operations, nature of operations, and modernization of equipment analyzed above, the PLAN is expected to strengthen its necessary capabilities in order to realize the following three objectives.

The first objective is to gain a position of advantage in conflicts over territorial sovereignty and maritime rights and interests. China's defense white paper stresses "safeguarding territorial sovereignty and maritime rights and interests" as an important principle of its military strategy.³⁰ For China, the most important issue regarding territorial sovereignty is reunification with Taiwan. In addition, China's claims of sovereignty regarding islands in the East China Sea and South China Sea have been growing stronger in recent years. China is already promoting the development of oil and gas fields in the East China Sea, and has also been making stronger moves, such as trial drilling, towards the development of resources in the South China Sea. Most of the territorial sovereignty and maritime rights and interests China considers it should safeguard are in its offshore waters. With its declared strategy of offshore defense together with open seas defense (protection), the PLAN will no doubt play the central role in this.

In order to possess the advantage in conflicts over territorial sovereignty and maritime rights and interests, the PLAN is expected to aim to build the capabilities needed to gain control of both the sea and air in wartime, while strengthening its presence in peacetime. Its Jiangdao-class corvettes, which can be built in large quantities at relatively low cost, will no doubt increase their patrol operations in China's offshore waters. To strengthen the air defense capabilities of surface vessels conducting operations in offshore waters, the PLAN can be

expected to modernize the fighter jets of its aircraft squadrons and to strengthen early-warning aircraft and air tankers to ensure the efficiency of their operations. It is assumed that it will use its aircraft carriers to project air power in sea areas where air support from the mainland is difficult, such as the southern part of the South China Sea. Once the ports and runways China has been building on reclaimed land in the South China Sea are completed, they will contribute to the enhancement of the PLAN's sea and air supremacy in the surrounding waters. In order to increase its island landing capabilities, it is reported that the navy is developing the new Type 081 landing helicopter dock, which has greatly enhanced amphibious landing capabilities compared to the current Yuzhao (Type 71)-class amphibious ship.³¹

The second objective is the strengthening of deterrence against the US. From China's viewpoint, regarding both its "core interest" of reunification with Taiwan and the establishment of its dominion of islands in the East China Sea and South China Sea, the greatest obstacle is the possibility that this might provoke a military response by the US. Although the US has no diplomatic relations with Taiwan, it has a strong interest in Taiwan's security, selling it the weapons for defense purposes and stressing the need for a peaceful resolution of the relationship between China and Taiwan. Japan and the Philippines, which are both engaged in disputes with China over the dominion of islands, are allies of the US. If China were to increase military tensions over such problems, the US might interfere militarily in circumstances that are disadvantageous to China. It is therefore important for China to deter US military intervention both to enhance the effects of its military pressure concerning these problems in peacetime and to ensure that, if a crisis does occur, it can engage in battle from a position of advantage.

In order to make the US hesitate to undertake military intervention, China must strengthen its deterrence. One important means of doing this is to strengthen its nuclear deterrence. It is reported that China will "improve strategic deterrence and counterattack capabilities"³² through the operations of its new Jin (Type 094)-class SSBN. However, with the JL-2 SLBM, reported to have a range of 8,000 kilometers, it is impossible for China to attack the US mainland from the South China Sea where the Jin-class SSBN is deployed. The PLAN is expected to make further forays into the Pacific via the Bashi Channel, increase the range of the JL-2 and promote the development of a new longer-range SLBM. At the same time, it will probably develop a new-type SSBN with improved acoustic quietness and greater missile operational capabilities.

Strengthening its capabilities to attack US naval forces approaching from Hawaii or the US



Yuzhao-class amphibious transport dock (Joint Staff Office of Japan)

mainland in waters distant from the Chinese mainland is an important means for the PLAN to deter US interference and to reduce the effectiveness of interference. In his report given at the National Defense University in April 1986, Admiral Liu Huaqing, who advocated China's offshore defense strategy, pointed out that, while the navy's scope of operations should for the time being be the offshore waters of the Yellow Sea, East China Sea and South China Sea within the first island chain, "in the future, in order to guard our country effectively against attack or invasion from the sea, we must strengthen the navy's defense in depth and secure the capability to block and eliminate the forces and weapons of an enemy navy at long distance."³³ For the PLAN, strengthening its capability to attack US navy vessels including aircraft carriers in the Western Pacific has been a longstanding challenge.

As outlined above, the PLAN has enhanced its submarines equipped with anti-ship missiles. These submarines constitute an important force for restraining US navy actions in the Western Pacific. While extending the range of these anti-ship missiles and improving their speed, the PLAN may well develop and deploy nuclear-powered submarines with a long underwater cruising distance. By deploying ships with enhanced air defense and anti-ship attack capabilities, such as the Luyang III-class destroyer, the PLAN is expected to aim to present a threat to US surface vessels while defending attacks from the air by US carrier-based fighters. It will probably also develop and deploy air-to-ship missiles in order to attack US vessels using aircraft, as well as strengthening its intelligence-gathering aircraft and early-warning aircraft, including UAVs, to enhance the intelligence, surveillance and reconnaissance (ISR) essential for long-distance precision strikes.

The third objective is the protection and expansion of China's national interests overseas. The European Union (EU) is China's biggest trading partner, while countries in the Middle East and Africa are the main sources of its resource and energy imports. Ensuring the safety of the sea lines of communication linking these regions with China is becoming an increasingly important national interest. Through its participation in international counter-piracy operations off the coast of Somalia and in the Gulf of Aden, the PLAN already plays the role of protecting China's sea lines of communication from the threat of piracy. If tensions were to rise with another country and a military clash occurred, the PLAN would be required to protect these sea lines of communication from the military threat posed by that country.

With the increasing entry of Chinese companies in overseas markets, a growing number of Chinese citizens are working and living overseas, and factories or mines belonging to Chinese companies are also increasing. The PLAN is also expected to protect the interests of these Chinese citizens and companies overseas in the event of political turmoil or an attack or abduction by terrorists. The navy is already engaged in evacuating refugees from Libya and Yemen, but in the future it may have to face new challenges such as eliminating attacks on Chinese facilities or rescuing Chinese citizens who have been abducted.

To realize such objectives, the PLAN may increase its ability to project power in far seas, particularly the Indian Ocean. Through their participation in counter-piracy operations, its destroyers and frigates are already increasing the PLAN's operational capabilities and presence in the Indian Ocean. In the future, it will probably increase the number of its supply ships and try to secure harbors as bases for fitting and supply to enhance the logistical support that is essential for both the quantitative and qualitative expansion of operations. Chinese submarines have started advancing into the Indian Ocean in recent years and such operations are expected to become more frequent. Once the aircraft carrier the PLAN is said to be constructing comes into service, it is also likely to enter the Indian Ocean. By deploying this aircraft carrier in the Indian Ocean, China will not only be able to secure its sea lines of communication and its overseas interests, but also augment its pressure from the seas on India, with which it has an ongoing land border dispute.

However, China faces certain problems in realizing the above-mentioned objectives. One major challenge is the strengthening of its ASW capabilities. Submarines are a major threat to surface vessels. Whether they are in offshore waters or far seas, China's surface vessels must respond to the threat from submarines in order to conduct their operations safely. Until now, the PLAN's ASW has mainly relied on surface vessels and the anti-submarine helicopters based on them, but their patrol zones seem to be limited. In order to conduct wide-area ASW, the operation of many fixed-wing patrol aircraft is essential, but the PLAN has only just begun to deploy such aircraft. The accumulation of various intelligence and improvement of data analysis capabilities through training and exercises are also essential for strengthening ASW capabilities, but this will require a great deal of time and effort.

Until now the PLAN has achieved the overall improvement of various capabilities in both offshore defense and open seas defense against the background of continuously increasing defense budgets. However, now that a slowdown in China's economic growth is forecast, budgetary limitations may come to be imposed on the resources available to the navy. If this happens, the PLAN may have to determine an order of priorities for the allocation of resources and have to decide, for example, between the reinforcement of fixed-wing patrol aircraft for enhancing its ASW capabilities in offshore waters or the increase of the aircraft carriers that are the basis for projecting power in far seas. Close attention will be paid to which areas the PLAN places priority on for the enhancement of its capabilities.

(Author: Masafumi Iida)



Luzhou-class destroyer and Fuchi-class supply ship conducting refueling in the Western Pacific (Joint Staff Office of Japan)

Chapter 2

Revising Its Strategic Posture and Expanding Capabilities—The PLAAF



1. PLAAF Strategy: From Territorial Air Defense to Integrated Aerospace Capabilities and Simultaneous Offense and Defense

(1) Changes in PLAAF Strategy

The Chinese Air Force—officially called the People’s Liberation Army Air Force or PLAAF—was founded in 1949, and beginning with its participation in the Korean War, it developed with support from the Soviet Union. As split between China and the Union of Soviet Socialist Republics (USSR) grew, technical assistance from Moscow came to a halt, resulting in long-term stagnation in Chinese development of new aircraft. From the 1970s into the 1980s, Chinese relations with the West improved, and China accordingly sought to bring in more Western technology, but the Tiananmen Incident in 1989 brought this to a grinding halt. While there was growth in the import of technology from Russia during the 1990s, China also applied such technology to greater production and development of indigenous military aircraft. During this same period from the end of the Korean War through the 1990s, the primary role of the PLAAF remained the same: territorial air defense. The emphasis was on control of the air above Chinese territory, and large numbers of interceptor aircraft were stationed around the country for this purpose.

At present, the role of the PLAAF is shifting from the traditional territorial air defense to an ability to conduct both offensive and defensive operations simultaneously, with the emphasis on covering a much broader area than when guarding only Chinese territory, and conducting a more flexible air defense.¹

The concept of simultaneous offensive and defensive operations grew out of the PLAAF’s study of strategy beginning in the mid-1980s. The PLAAF conducted research in institutions such as the PLA Air Force Command College, and the concept of “air defense of the frontier” (*kongjiang fangyu*) was first raised by Dong Wenxian, a former researcher in the PLAAF Headquarters Department, when he cited a need for the PLAAF to be able to cover a wider area than that required for territorial air defense.² In 1997, Jiang Zemin, then chairman of the Central Military Commission (CMC), first called for a transition from territorial air defense to a posture that would permit simultaneous offensive and defensive operations.³ The 2004 Chinese Defense White Paper set the goal of transitioning to a structure which would permit simultaneous offensive and defensive activities, stating that the PLAAF’s responsibility was to ensure the security of the nation’s airspace and provide stable air defense. The White Paper held that the PLAAF must respond to the needs of aerial combat in

an informationized age by achieving a steady transition from simple air defense of China's territory to simultaneous offensive and defensive capabilities.

The emphasis at present is on building an air force capable of integrated aerospace operations and simultaneous offensive and defensive activities. The “space” in aerospace implies attention to integrating the information technology (IT) component of China's space satellite system and the air force to support PLAAF combat activities as well as expansion of the PLAAF's ability to project its fighting capabilities farther outside of China's territory.

Study of integrated aerospace capabilities was conducted from the late 1990s through the early 2000s at institutions such as the Air Force Engineering University and the PLA Air Force Command College.⁴ Based on the results of such research, the PLAAF raised the concept of integrated aerospace operational capability with the CMC in 2004. Qiao Qingchen, then commander of the PLAAF, in 2004 was named the member of the CMC, meaning that the PLAAF was now more able to have its own views raised in that body. But while integrated aerospace operations was accepted by the CMC, the concept was still not presented in public.⁵ That may have been influenced by the struggle among the PLAAF, the Second Artillery Force (PLASAF), and the PLA General Armament Department over which would have responsibility for space. In 2009, PLAAF Commander Xu Qiliang used the celebration of the PLAAF's sixtieth anniversary to first publicly raise the established PLAAF strategy of integrated aerospace capabilities and the ability to conduct simultaneous offensive and defensive operations.⁶ Xu Qiliang's selection in 2012 as vice chairman of the CMC has likely given more impetus to this strategy.

In April 2014, President Xi Jinping, chairman of the CMC, called on the PLAAF to move forward quickly with its efforts to build a large air force which was equipped to meet the demands of a strategy of integrated aerospace operations and simultaneous offense and defense operations. This speech publicly authorized the concept of integrated aerospace operations as a formal strategic goal of the PLAAF. The 2015 Defense White Paper cited the PLAAF's ongoing efforts to transition from a force focused on territorial air defense to one that could carry out both offensive and defensive operations, in keeping with the strategic demands of integrated aerospace operations and simultaneous offense and defense operations. The White Paper highlighted the construction of an aerospace command and control system needed for informationized operations.

Just what kind of force building is the PLAAF aiming for through its strategy of integrated aerospace operations and simultaneous offense and defense capabilities? In an article written by Ma Xiaotian, member of the PLAAF command staff, and Tian Xiusi, PLAAF political commissar, the authors maintain that emphasis in building for integrated aerospace operations and simultaneous offense and defense capabilities is on surveillance and early warning, air offensive campaign, air and missile defense, and strategic force projection.⁷

Here, salient points would in particular include (1) integration of information systems, (2) long-range projection of force and attack capability, and (3) adjustment in the balance of force structure. All such factors seem to be closely interrelated.

Integration of information systems refers to the construction and application of a unified early warning system integrating airborne early warning craft, reconnaissance and positioning satellites in space, ground-based radar installations and similar elements.⁸ The 2013 edition of *The Science of Military Strategy*, published by the PLA's Academy of Military Science, argued the need to build an information system that would integrate the entire Chinese territory, increasing both the quality and the quantity of information systems in space, along with airborne reconnaissance, early warning, and command and control platforms, doing so to eliminate any blind spots in monitoring all of China's territory.⁹

Another goal is strengthening long-range force projection capabilities. This consists in particular of carrying out long-distance operations for early warning, reconnaissance, attack, airspace control, and transport, so that the PLAAF can act to effectively cover the airspace over the whole of Chinese territory and over strategically important waters.¹⁰ Improvement in the ability to use air-to-ground missiles and other weapons in precision attacks will hold the key to converting the PLAAF so that it can conduct both offensive and defensive operations.

The 2013 edition of *The Science of Military Strategy* calls for use of three approaches toward control in the skies surrounding China, classified as: (1) Maintain thoroughgoing control of completely secure areas. (2) In areas where there can be only limited control or where security cooperation is in effect, conduct early warning and reconnaissance, long-range intercept, and limited strikes on enemy forces while cooperating with friendly nations. (3) In areas requiring long-range surveillance and where only limited deterrence is possible, conduct surveillance on military forces and bases in the Western Pacific and maintain the necessary deterrent posture.¹¹ This approach demonstrates the strength of Chinese attitudes toward the concepts of territorial control and creation of sanctuary areas.

Finally, it appears that such a transition must be accompanied by adjustment of balance in the structure of forces. The role of interceptor aircraft has been emphasized in China's territorial air defense, but given a strategy of simultaneous offensive and defensive operations, this emphasis shifts to multirole fighters capable of air-to-ground and air-to-air attack. In integrated aerospace operations, combat support aircraft become all the more important to put emphasis on Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) and the number of such craft deployed should increase.

(2) Expanding Range of Activity

Faced with such changes of the strategy, the PLAAF is expanding its range of activity. As of August 2015, it had already conducted three training exercises in the Western Pacific. A PLAAF spokesman announced that on March 30, PLAAF aircraft had passed through the Bashi Channel and held exercises in the Western Pacific. It has been reported that the aircraft involved was an H-6K bomber. Later, on May 21, PLAAF aircraft passed through the air-space between Okinawa island and Miyako and carried out the first exercises over the Western Pacific. In addition, on August 14, it conducted further training exercises in that area. According to reports, the August 14 exercises included other aircraft in addition to the H-6K.¹²

There have been notable increases in activity in the South China Sea. During September 2014, as part of the “Joint Action A” exercise, the PLAAF took part in joint exercises along with the PLA Navy (PLAN) and the PLASAF.

China has been engaged in land reclamation and bolstering its facilities on seven features, including Johnson South Reef (Chiguajiao in Chinese, Mabini Reef in Tagalog) and Fiery Cross Reef (Yongshujiao in Chinese) in the Spratly Islands (Nansha in Chinese), in the process generating international concern. China’s construction of a 3,000-meter-class runway which seems intended for possible use by the new H-6K bomber has attracted particular international attention.¹³ At the 2014 National People’s Congress, education profession representative Li Guangyu raised the proposal that an “air defense identification zone” should be established in the South China Sea¹⁴, though the Chinese Government has remained ambivalent on that possibility.

In addition, the PLAAF has been active regarding protection of Chinese citizens abroad as well as search and rescue activities. For example, during the Libyan civil war, the PLAAF dispatched four Il-76 transports to Libya from the end of February through March 2011 to evacuate Chinese workers. When Malaysia Airlines flight MH370 disappeared in 2014, the PLAAF provided two Il-76 transports and one Y-8 transport to the international search and rescue efforts.¹⁵ With the Il-76 transports flying out of Pearce Air Force Base in Australia and the Y-8 flying out of Subang Airbase in Malaysia, this represented the PLAAF’s first activity in the Indian Ocean.



H-6K bomber (IHS Jane’s [online news module])

(3) Factors Encouraging Change

Some of the factors which have encouraged such changes in the PLAAF include the Revolution in Military Affairs, the question of balance with Taiwan in air power, and en-

hanced Chinese presence at sea.

First is the impact of the Revolution in Military Affairs. During the Gulf War, the bombing of Kosovo, and the wars in Afghanistan and Iraq, it was possible for the United States (US) Air Force to carry out long-range precision strikes thanks to its air-space intelligence, surveillance, and reconnaissance (ISR) network, neutralizing the enemy's air defense system. In contrast, this made clear that China's past focus primarily on control of its territorial airspace was no longer sufficient. The Hainan Island incident which took place in 2001 when a US Navy EP-3E signals intelligence aircraft collided with a Chinese interceptor jet, was an indication that China was gravely concerned about US intelligence-gathering operations along its coast and wanted to keep such aircraft as far away as possible. As such, the USAF, with its precision attack capability thanks to its ISR network, presented the PLAAF with a model to emulate for the future.

Second, looking at the balance between Taiwan and the mainland in air power, Chinese air power fell short of Taiwan's until around the middle of the 2000s. Such an imbalance impacted their political relations as well, with China viewing this as disadvantageous.

Third, in recent years the PLAN has been building up its presence on the high seas, which has also increased the necessity of air cover provided by the PLAAF. Recent years have also seen growing calls for the PLAAF to participate more vigorously in protection of Chinese interests at sea, with greater attention going to the importance of protecting Chinese maritime sovereignty. Both trends seem to contribute to greater PLAAF activity. In April 2014, PLAAF Commander Ma Xiaotian first publicly stated that the PLAAF's mission includes exercising control from "airspace in the sea direction." Ma emphasized that the PLAAF functioned to deal with the wide range of threats that could arise at sea, and that with the transition of its role from defending China's territorial air space to one of simultaneous air and space defense, the PLAAF must be able to deal with the new role of fighting to protect China's rights and interests at sea.¹⁶

2. Modernization of Air Force Equipment

(1) Replacing Old Fighters with New and Increasing Multipurpose Fighters

Modernization of the PLAAF's equipment has proceeded at a rapid pace since the latter half of the 1990s. As of 1995, eighty percent of its combat aircraft were derivatives of the Soviet MiG-17 and MiG-19 fighters from the 1950s. With its progress in modernization, the PLAAF retired around 3,500 aircraft between 1990 and 2010, representing seventy percent of its combat craft.¹⁷ At present, it has about 2,620 combat craft, greatly trimming down

the size of its fighting force.¹⁸

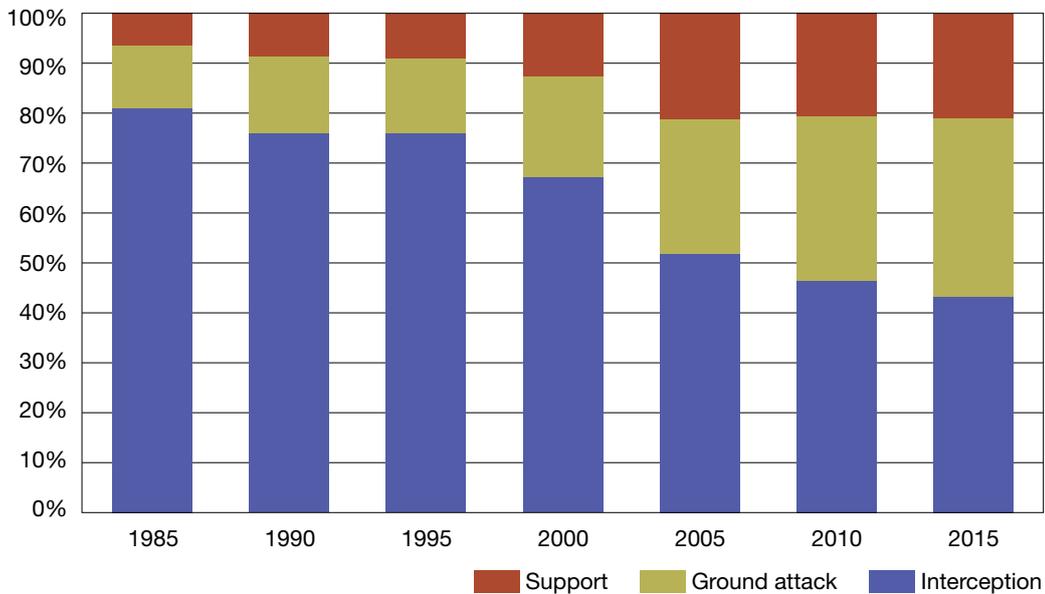
Viewed in terms of the structural balance of fighting power discussed above, first, there has been a notable increase in the deployment of multirole fighter craft capable of air-to-ground attack. As shown in Figure 1, the proportion of interceptor aircraft declined from eighty percent to forty percent between 1985 and 2015. Second, there has been greater diversification of combat support craft, but despite the increase in the number of deployed combat support craft, they still do not represent a sufficient proportion of overall total aircraft.

There has been steady progress in the deployment of fourth-generation fighters, and in 2010, the PLAAF’s number of fourth-generation fighter craft surpassed that of Taiwan.

The Table 2-1 shows the situation for the main varieties of fighters.

Looking at bombers, the old version of the H-6 has been in use for many years, but it is said that the updated version, the H-6K, has an effective range of 2,000 kilometers and can carry the CJ-10 (DF-10) air-to-ground cruise missile, and the introduction of the D-30KP2 engine aims to increase its range to 3,500 kilometers.¹⁹ This could put Guam within H-6K striking range, and attention is being paid to how, as mentioned above, it has entered the West Pacific several times recently for training exercises. As of 2015, thirty-six H-6K bombers have been deployed with the PLAAF and this number can be expected to increase in the future.

Figure 2-1: Trend in PLAAF force structure balance



Note: Baseline for categories is the 2015 edition. “Ground attack” refers to craft with ground attack capability; “interception” cites craft mainly used only for interception; “support” means other combat craft for functions such as ISR, supply, or refueling.

Source: Prepared from annual editions of IISS, *Military Balance*.

Table 2-1: Major fighters

Name	Generation	Type	Range (km)	First flight or import	PLAAF deployment
J-7	3	Interception	1,739-2,229	1966	1967
J-8/8II	3	Interception	1,898-2,148	1969/1984	1980/1988
JH-7A	N/A	Fighter-Bomber	3,698	2002	2004
J-10	4	Interception	1,648	1998	2003
Su-27/J-11	4	Interception	3,530	1992/1998	1992/2000
J-11B/BS	4.5	Multirole	3,530	2004	2007?
Su-30MKK	4.5	Multirole	3,000	2000	2000
J-16	4.5	Multirole	3,000	2011?	2014
J-11D	4.5	Multirole	Unknown	2015	Under development
J-20	5	Multirole/stealth	Unknown	2011	Under development
J-31	5	Multirole/stealth	Unknown	2012	Under development
Su-35	4.5	Multirole	3,600	Under negotiation	Under negotiation

Source: Paul Jackson ed., *IHS Jane's All the World's Aircraft: Development and Production, 2015-2016* (IHS, 2015).

(2) Combat Support Aircraft: Expansion of the Early Warning System

In order to increase its territorial control capabilities, the Chinese military must be able to identify the location and movement of aircraft, ships, and other elements in a given area.

a. Early Warning and Control Craft

The PLAAF has at least four of the KJ-2000 (Kongjian 2000) early warning, command, and control craft currently in use. The KJ-2000 has been called the Chinese AWACS, and using its phased-array radar, it is said to be capable of simultaneously tracking sixty to a hundred targets within a range of 470 kilometers. The original plan called for development of an early warning, command, and control craft based on the Il-76 transport with installation of the Phalcon phased-array radar to be obtained from Israel. In 2000, however, the United States pressured Israel into breaking their contract, and China developed its own version. This aircraft became capable of 24-hour operation in April 2013.²⁰

Despite the KJ-2000's high-level functions, China's inability to import large enough numbers of the II-76 resulted in its development of the KJ-200 (also called the Gaoxin-5) early warning aircraft, based on the Y-8 but with over eighty percent improvements.²¹ At least four of the KJ-200 aircraft have been deployed by the PLAAF and were first publicly displayed during the 2009 parade commemorating the sixtieth anniversary of the founding of the People's Republic.

A military parade in September 2015 was the stage for public introduction of the KJ-500 early warning craft. This was based on the Y-9, which in turn was a further development of the Y-8, and some media reports indicate that, like the American E-2D, the KJ-500 is a third-generation early warning craft.²²

b. Variations on the Y-8

China has used the Y-8 (Yun-8) transport as the basis for developing a wide range of variations, including early warning, reconnaissance and intelligence gathering, and electronic warfare applications. The 2013 edition of *The Science of Military Strategy* argues the need for the PLAAF's combat capability to shift from its traditional role of defense to a more balanced form, indicating in particular the need for more combat support aircraft, including tankers, long-range surveillance craft, and early warning, command, and control craft.²³ To achieve such variation, China is said to be taking as its model the US use of the C-130J as the basis for development of a variety of combat support aircraft.²⁴

China started production of the Y-8 in the 1980s, based on a license for the Soviet An-12. It has been revamped a number of times since that period primarily as a PLAN aircraft. In the 1990s it was outfitted with the Skymaster radar system imported from Great Britain and used as the Y-8J maritime monitoring aircraft.²⁵

At the end of the 1990s, China launched a high-tech development project called the Gaoxin Project, and the variations on the Y-8 were developed as part of that project.

Development and use are also underway for the Y-9 transport. This model is a medium-class transport based on the civilian Y-8F-600 aircraft and went into development in 2001. It is estimated to have a payload of over 20 tons. Like the KJ-200, which is based on the same airframe and was produced simultaneously, the Y-9 is an improvement on the Y-8 and is referred to as a Third Type Platform under the Gaoxin Project.²⁶

Table 2-2: Gaoxin Project

Name	Role	No. deployed	Remarks
Y-8CB (Gaoxin-1)	Electronic reconnaissance	PLAAF 4	(none)
Y-8JB (Gaoxin-2)	Electronic reconnaissance	PLAN 4	(none)
Y-8G (Gaoxin-3)	Electronic warfare/ electronic reconnaissance	PLAAF 7	(none)
Y-8T (Gaoxin-4)	Command and control	PLAAF 3	(none)
KJ-200 (Gaoxin-5)	Early warning	PLAAF 4	Same as PLAN Y-8W
Y-8Q (Gaoxin-6)	Anti-submarine patrol	PLAN (Note 1)	Seen as much inferior to P-3C and similar models in flight performance (Note 2)
Y-8XZ (Gaoxin-7)	Electronic warfare/ psychological warfare	PLAAF 2	(none)
Y-9JB (Gaoxin-8)	Electronic warfare/ electronic reconnaissance	PLAN (Note 3)	Also called the Chinese EP-3 (Note 4)
KJ-500 (Gaoxin-9) ?	Early warning, command, and control	PLAAF	New model based on Y-9
Y-9EZ (Gaoxin-10); Y-9G (Gaoxin-11) is under development as successor to Y-8G (Note 5)			

(Note 1) "China Fields New Maritime Patrol and Anti-submarine Y-8/Y-9 Variant," *IHS Jane's Defence Weekly*, June 18, 2015.

(Note 2) "深度：解放军反潜能力依然薄弱：高新6号远逊P-3C" [Seeking the Essence: PLA Still Weak in Anti-submarine Capability: Gaoxin 6 Lacks the Range of the P-3C], 新浪 [Sina], December 14, 2013.

(Note 3) "Japan Intercepts New Chinese GX-8 ELINT Aircraft," *IHS Jane's Defence Weekly*, October 6, 2014; "Chinese Special Mission Aircraft Cross Okinawa into Pacific," *IHS Jane's Defence Weekly*, December 8, 2014.

(Note 4) "四渡宫古反介入：试析我军机如何密集穿越宫古水道" [Passing Over Miyako Four Times, Opposing Intervention: Attempting to Analyze How Our Military Aircraft Were Able to Brazenly Pass Through the Miyako Strait], 新浪 [Sina], December 14, 2014; "解放军新型高新8号电子侦察机照片曝光" [Photo Released of New PLA Electronic Reconnaissance Aircraft Gaoxin-8], 凤凰电视 [Phoenix TV], January 8, 2015; "高新八号情报器曝光：绝非南海撞机EP-3山寨品" [Intelligence Aircraft Gaoxin-8 Introduced: This Is No Copy of the EP-3 Involved in Air Collision over the South China Sea], 环球网 [Huanqiu.com], May 9, 2014.

(Note 5) "Focus: New Chinese EW/ECM Aircraft GX-11/Y-9G," *Air Recognition*, January 5, 2015.

Source: Paul Jackson ed., *IHS Jane's All the World's Aircraft: Development and Production, 2015-2016* (IHS, 2015).

c. Large-scale Transports and In-flight Refueling Tankers

Given the importance of strategic force projection capability, one of China's weaknesses has been the relative lack of progress in its use of large-scale transport craft.²⁷ The Ilyushin Aviation Complex has been unable to abide by the schedule for supplying the Il-76 aircraft as specified in the import contract with Russia, so that deployment of the Il-76 has not proceeded as planned and only sixteen are in use. Designed as mid-size transports, the Y-8 and Y-9 innately have limits to their transport capacity.

China has only ten of its H-6U in-flight refueling tankers, all of which are an older model, so that in-flight refueling capacity is pushing its limits.²⁸ Since large-scale transport planes can become the basis for in-flight refueling tankers, China is also placing its hopes for a solution to its in-flight refueling problem on beefing up its development of large-scale transports.

In 2011, China concluded a contract with Ukraine for the purchase of three Il-78 aircraft. Articles in the media indicate that the Il-78 were deployed in 2014.²⁹ Using the Il-78 as an in-flight refueling tanker has made it possible to fuel the Su-30MKK and the KJ-2000, which is said to more than double their combat radius.

In the future, the Y-20 large-scale domestic transport, currently under development, will play an important role. The Y-20 is seen as having a payload capacity of 66 tons and achieved its maiden flight in January 2013.³⁰ At present, however, its engines cannot produce sufficient thrust, so it seems unlikely to go into regular use for the time being.

d. Unmanned Aircraft

China has been very enthusiastic regarding the military applications of unmanned aircraft, and has already been making full use of unmanned air vehicles (UAVs) for ISR purposes. As of the beginning of 2011, the PLAAF is said to have been using over 280 UAVs.³¹

China first introduced the CH-1 high altitude, long endurance unmanned air vehicle (UAV/HALE) in the 1980s. Later, in 1994, it imported the Harpy UAV fighter from Israel.

Particular attention is being paid at present to the attack capabilities of UAVs. The CH-4 UAV fighter can be used for reconnaissance, monitoring, and attack and was first made public as part of the "Peace Mission 2014" exercises.³² The CH-4A can remain airborne for 30 hours and has a range of 3,500 kilometers, while the CH-4B is said capable of fourteen hours of flight with a range of 1,600 kilometers.³³ The



CH-4 UAV (IHS Jane's [online news module])

CH-4 was also used in July 2015 to provide reconnaissance on the extent of damage from the earthquake in Xinjiang.³⁴ The BZK-005, JWP-02, and GJ-1 were presented to the public during the military parade on September 3, 2015.

(3) Seeking Greater Domestic Production

China is trying to achieve greater domestic production of its combat aircraft. While China seems to be making great strides in its technological capabilities, so far it has still been unable to free itself from heavy reliance on Russian technology. The main bottleneck has been engine development.³⁵ China has continued its efforts to develop domestic engines, but its results have still fallen short of Russian engines in such areas as reliability.

The two engines which have been developed and put into use in recent years are the WS-9 and WS-10. The WS-9, which generates 9.9 tons of thrust, has been produced under license for the Spey engine from Rolls-Royce, and is being used on the JH-7. The WS-10 is produced drawing on technology for the Russian AL-31FN engine and has been used on the J-10 and J-11B since 2009. It is said, however, to take twice as long as the AL-31FN to reach sufficient levels of thrust and still has some problems in reliability. China purchased over 200 of the AL-31FN series engines from Russia between 2006 and 2012, of which some were used for the J-11B.³⁶

Of the various engines currently under development, particular attention is being paid to the WS-20 engine planned for use on the Y-20, the WS-15 to be used on the J-20, and the WS-18, which is a derivative of the D-30KP-2 and will be used on the H-6K.

3. Looking to the Chinese Air Force of the Future

While the PLAAF has set in place its guiding concept of integrated aerospace capabilities and the ability to conduct simultaneous offensive and defensive operations as its direction for future development, it will likely require a considerable amount of time to achieve that concept. The PLAAF will most likely continue to work in that direction over the next ten years.

In the article by Ma Xiaotian and Tian Xiushi cited earlier, the authors raise stealth capabilities, unmanned craft, adoption of artificial intelligence, and long-range, high-speed precision operations as goals for the future. Further, according to Jiji Press, the PLA Air Force Command College produced a report in November 2014 presenting the PLAAF's long-term strategy. The report is said to stress strengthening PLAAF activities in the West

Pacific through 2030, as well as the necessity of developing nine types of strategic equipment, including new strategic bombers, terminal high altitude area defense missiles, high-speed air-to-ship cruise missiles, heavy transports, and UAV attack aircraft.³⁷ Given the PLAAF's strategic policies and topics for attention described above, it is no surprise that such a report should appear.

The PLAAF can be expected to aim for the following types of goal in the future. First would be progress in strengthening its combat support aircraft as a way of overcoming its current weaknesses. Although China has rapidly expanded its variety of combat support aircraft, it still has deployed few of these. For example, 2015 version of *The Science of Military Strategy* published by the PLA National Defense University indicates that the US military maintains the ratio of attack, defense, and support in its fighting forces at 2:1:1, and it is clear that the PLAAF has not yet attained such a balance.³⁸

To achieve that balance, it will be important to develop heavy transport and in-flight refueling craft. To attain sufficient capability in areas such as projecting military force and in-flight refueling, some research suggests that the PLAAF will need at least four hundred additional Y-20s.³⁹ Emphasis will be placed on speeding up Y-20 development, and if such efforts are successful, the number of deployed Y-20s will likely grow rapidly. Development of early-warning and intelligence gathering aircraft will continue, as well as efforts at mass production. It is also likely that China will sense a need to move forward with integration of early warning and coordinated command functions.

Second, there will be efforts to increase attack capabilities, most likely through continued deployment and development of fighters capable of attacking targets on the ground. Stealth capability and UAVs will be needed to increase the ability of fighter aircraft to penetrate the enemy's air defense to conduct attacks. China is already engaged in such efforts, as shown by its research and development on the J-20 fighter and the Yilong and Xianglong terminal high altitude long endurance UAV craft, which are expected to reach the deployment stage in the future. Importance will likely be placed on development of supersonic or hypersonic air-to-ground cruise missiles for ground attacks. At the aviation trade show held in Zhuhai in 2014, a supersonic missile with a ramjet engine called the CX-1 was unveiled, and attention will be paid to future development in this area.

In addition, China is strongly aware of the need to develop long-range bombers. During the 2014 National People's Congress, PLAAF Equipment Department director Yuan Qiang noted that in order to respond to China's strategic needs as a maritime power, the PLAAF must strengthen its production of long-range bombers, heavy transports, early-warning, command, and control craft, and tankers, increase its ability to conduct operations on the open seas as quickly as possible, and provide powerful strategic support to protection of China's maritime sovereignty.⁴⁰ Since there still seem to be many problems to be resolved

in the development of long-range bombers, including the question of engines for such craft, near-term answers to such problems may be difficult. Although emphasis is currently being placed on production of the H-6K, some parties view this only as unavoidable compensation for the delay in research and development on long-range bombers.⁴¹

Third, the PLAAF will seek greater capabilities in air defense and missile defense. Discussion is being directed at the need for integrated ballistic missiles for air, space, and ground targets, early-warning ability dealing with cruise missiles and stealth aircraft, and defense systems to counter air defense missiles.⁴² China appears to have secured some level of defense capability in terminal-phase missile interception by importing the S-300PMU1 and S-300PMU2 and deploying the HQ-9 and HQ-15/18. It is also continuing to make progress in negotiations with Russia for purchase of the S-400, which has a range of 400 kilometers, so that it should achieve greater capacity in this respect as well. Progress is also continuing in development of radar which can detect stealth aircraft.⁴³

And fourth, one longer-term concern being discussed is how to maintain the ability to conduct and defend against air and space attacks so as to further its ability to carry out integrated aerospace operations. Such discussions assume that the big powers will find themselves in greater competition in space, meaning the need to protect one's own space assets while being able to attack the space assets of other countries. At present, however, the PLAAF has neither the equipment nor the jurisdiction to deal with space, making this a topic for further attention.

(Author: Shinji Yamaguchi)

Column

The Gaoxin Project

The many variations on the Y-8 are the result of the Gaoxin Project. It is not completely clear how the Gaoxin Project as a whole is reflected in overall national defense, but it appears to deal with advanced technology and in particular with the development of the technology for informationized warfare.

The Gaoxin Project appears to have started up on direction from the highest leadership ranks and to follow directions by the Party Central Committee, the State Council, and Central Military Commission.⁴⁴ In December 2014, speaking at an expanded Party group meeting in the Aviation Industry Corporation of China, corporation chairman and Party secretary Lin Zuoming passed along the gist of talks given by Xi Jinping at the Armament Work Conference and the Work Conference of the Central Gaoxin Project Leading Small Group.⁴⁵ Aside from this article, there has been no other information on the existence of a Central Gaoxin Project Leading Small Group, so it is hard to say that this information is definitive. Assuming that it does exist, it is still unclear whether Xi Jinping spoke as chairman of the leading small group or whether he simply attended the meeting. Still, the use of “Central” in its name would suggest that it pertains directly to the Party Central Committee, and if the article is accurate, this would indicate that the Party Central Committee views the Gaoxin Project as an important matter.

While it is unclear just when the Gaoxin Project started up, we can trace it back at least to 2001, and there is some indication that it may have been launched in the late 1990s. On June 22, 2001, Party secretary for the China Aviation Industry Corporation Liu Gaozhuo said that in development of the aviation industry, the Gaoxin Project would speed up the development of advanced aeronautical science technology and contribute to the Party’s efforts to build up the economy, unify the fatherland, protect world peace, and promote common development during the new century.⁴⁶ On July 3, an article in the *Zhongguo Hangkong Bao* [China Aviation News] depicted the Gaoxin Project as a major undertaking which will influence the great efforts to unify the fatherland and contribute to the maintenance of world peace.⁴⁷

The PLAAF in particular seems to be the focus of the Gaoxin Project. A 2009 article in the *Jiefangjun Bao* [PLA Daily] said that during 2008 alone, the PLAAF had conducted tests covering over one hundred categories in the Gaoxin Project. The article also held that the completion of the Gaoxin Project would ensure that the PLAAF could carry out the multifaceted military responsibilities of an air force.⁴⁸

The categories which relate to the Y-8 and Y-9 series of planes deal with early warning and control and ISR, topics which appear to play a central role in China’s goal of informationization, and we can assume that accounts for the importance placed on their role. It’s very likely that a string of events—the 1999 mistaken American bombing of a Chinese embassy, the 2000 failure of plans to purchase the Phalcon phased-array radar



Y-9 intelligence gathering craft (Joint Staff Office of Japan)

system from Israel due to pressure by the United States, and the 2001 aerial collision with a US military aircraft—brought home strongly to China that it needed to conduct its own development of the most advanced technology. This realization in turn seems to have led to the Gaoxin Project. We can expect that the major items relating to the Y-8 and Y-9 in the future will include development of aircraft for early warning and control, electronic warfare, electronic reconnaissance, in-flight refueling, and anti-submarine patrols, among others.

Chapter 3

Expanding and Strengthening Its Missile Force—The PLASAF



The PLA's Second Artillery Force (PLASAF; reorganized into the PLA Rocket Force at the end of December 2015) is China's strategic missile force. As such, its mission is to serve as a nuclear deterrent, carry out nuclear counterstrikes, and perform precision attacks with conventional missiles. According to President Xi Jinping, the PLASAF plays a central role in China's strategic deterrence capabilities, provides strategic support to China's position as a major power, and is a cornerstone in the protection of China's security.

After deciding in the latter half of the 1950s to develop nuclear weapons and ballistic missiles, China achieved success in missile development in the early 1960s and in October 1964 successfully conducted its first nuclear test. Against such a background, the Second Artillery was established on July 1, 1966, as the military's ballistic missile force to handle China's nuclear capabilities. Until the 1980s, the PLASAF dealt only with nuclear missiles, but since the latter half of the 1990s, it has greatly developed its conventional missile force in keeping with the new concept of both nuclear and conventional preparedness.

The Second Artillery is under the direct command of the Central Military Commission (CMC), and its central headquarters are in Qinghe on the outskirts of Beijing commanding its 130,000 personnel. The headquarters contain the central command, Political Department, Logistical Department, and Equipment Department. The PLASAF's six main missile bases are named Base 51 through Base 56 and are operated on a par with the PLA's group armies. Multiple brigades are stationed at each of these bases. For training purposes, the PLASAF has Base 22 (technical support training) and Base 28 (combat training), in addition to which it has units for construction/production and behind-the-lines support as well as five research centers and four education centers directly under PLASAF aegis.¹

1. Nuclear Force Aiming at Assured Second-Strike Capacity

(1) Principles of Nuclear Strategy

Due to a lack of transparency regarding China's nuclear weapons, it is difficult to analyze the number of nuclear ballistic missiles and nuclear warheads with any great degree of reliability. It is possible, however, to highlight a number of principles applied throughout its nuclear strategy.

First is the primacy of the political. Mao Zedong placed great weight on the political significance of possessing nuclear weapons, and since China was limited in its means of delivering and otherwise using such weapons, its doctrine regarding actual use of these weapons in real warfare was far from highly elaborated. As the missile force later developed

and other factors came into play, increasing study was directed to a doctrine regarding their use, but the principle of political primacy has been unyielding.

Xi Jinping has characterized the PLASAF as being a strategic force directly controlled by the Party Center and the CMC and stressed that whatever the circumstances, it must be loyal politically. The 2013 edition of *The Science of Military Strategy*, published by the PLA's Academy of Military Science, also stresses "centralized coordination" as a basic principle for SAF operations, explaining that all decisions regarding warfare by the PLASAF's nuclear missile units are in the hands of the CMC. All decisions, it continues, are to be made by the CMC, including the method of deterrence, the scale and timing of nuclear counter-strikes, and the targeting.² The PLASAF is the military force which puts those decisions into action through its use of nuclear missiles, but it does not itself determine nuclear strategy.

Second, China has pledged not to make first use of its nuclear weapons. Ever since it possessed nuclear weapons in 1964, China has been adhering to its declaratory policy of no first use. Zhou Enlai declared that China would never be the first to use nuclear weapons at any time and under any circumstances and would not use nuclear weapons against non-nuclear weapon states.³

China once again affirmed this policy as part of its first explanation of its nuclear strategy to the outside world in its 2006 Defense White Paper. This explained that China's nuclear strategy was one of using its nuclear weapons for self-defense, and its purpose was to prevent other countries from using nuclear weapons against China or resorting to nuclear threats to do so. The White Paper further stated that China unconditionally assents that it will never at any time or under any circumstances be the first to use nuclear weapons and will never use nuclear weapons or the threat of their use against non-nuclear weapon states or regions.

The third point is that while China has a limited number of nuclear warheads, it is steadily increasing that number. It is estimated that China's arsenal of nuclear warheads in 2015 amounted to 260, clearly far less than those of Russia, 7,500, and of the United States (US), which had 7,260 nuclear warheads. Even though the Chinese arsenal has not necessarily been growing at a rapid pace, it did roughly double over the preceding ten years.

Fourth, the nuclear warheads are not mated with missiles during peacetime and are stored separately, subject to centralized management. According to Mark Stokes, Base 22 in Qinlingshan, Taibai County, Shaanxi Province is a centralized management facility for nuclear warheads; warheads move back and forth between Base 22 and the six missile bases,

Table 3-1: Holdings of Nuclear Warheads

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
No.	130	145	176	186	240	240	240	250	250	260

Source: Yearly editions of the *SIPRI Yearbook*.

so that under normal circumstance, few warheads are stored at individual missile bases.⁴

It is unclear how nuclear warheads for strategic nuclear submarines are handled. When such nuclear submarines are out at sea on patrol, however, they represent little strategic value if they are not armed with warheads, so it is appropriate to assume that they normally carry the nuclear warheads.

(2) Issues regarding China's Deterrence Strategy

(a) Nuclear Deterrence and Nuclear Counterstrikes: Seeking Assured Second Strike Capabilities

Much attention and discussion has been directed to the question of just how China perceives deterrence⁵ and what is its nuclear deterrence strategy.⁶ Information about China's nuclear forces and nuclear strategy is unclear and limited, making it hard to arrive at any definitive conclusions. In setting forth concepts which could explain China's nuclear deterrence strategy, past research has used phrases such as "counter-coercion,"⁷ "minimum deterrence,"⁸ "assured retaliation,"⁹ and "certainty of uncertainty."¹⁰

It seems appropriate to interpret China's nuclear deterrence strategy as a melding of "counter-coercion" dating back to the days of Mao and a form of "minimum deterrence" that has developed since the latter half of the 1980s. One prominent feature of this concept is the relatively great weight placed on psychological and political elements.

For instance, "counter-coercion" seems to imply the ability not to be coerced against a background of nuclear threats from another country, using China's nuclear weapons and "people's war" to forestall bending to another country's demands. In terms of Mao's view of nuclear weapons, first, even though nuclear weapons have great value as a threat, those weapons alone do not determine the outcome of a war, making nuclear weapons a kind of "paper tiger." Thus, second, China should have nuclear weapons as a means of resisting compulsion by the major nuclear powers. Mao's nuclear deterrence strategy was an existential deterrence whereby the existence of nuclear weapons in itself had a deterrent effect, which can reasonably be combined with Mao's reliance on "people's war" to bring victory in the end without having to yield to nuclear weapons' use or the threat of their use.¹¹ "Counter-coercion" today remains one of China's goals, and the Academy of Military Sciences and various researchers continue to develop such arguments.¹²

Next, as China continued to build up its nuclear weaponry, it came to be thought that China's ability to conduct counterstrikes in response to an enemy's nuclear attack in itself had a deterrent effect. Today's Chinese nuclear deterrence represents both a counterstrike which would cause "unacceptable damage" to the enemy as well as China's mere potential to make such a counterstrike, meaning that the enemy would have to think twice before conducting a nuclear attack.¹³ As such, this concept can be viewed as close to "minimum

deterrence.” The problem, however, is the standard for unacceptable damage. For example, Robert McNamara set that standard at loss of twenty percent of the population and fifty percent of industrial capacity.¹⁴ If this is taken as the standard, then China’s arsenal of nuclear warheads clearly falls short. Many Chinese researchers, however, maintain that China calculates the level of unacceptable damage as far lower than other nuclear states.¹⁵

There are definitely some doubts as to whether China’s limited nuclear capabilities represent a credible second strike capacity. What must also be considered in this respect, however, is that China has given great weight to psychological and political factors in its calculations of nuclear deterrence. The 2013 edition of *The Science of Military Strategy* maintains that the nuclear deterrence effect may vary depending on the specific circumstances faced by the other country and cannot be argued as an absolute applying to all countries; consideration must be given to such factors as the other party’s psychology, form of government, and values system.¹⁶ Accordingly, how another country views “unacceptable damage” will differ depending on that country’s politics and society.

The 2013 edition of *The Science of Military Strategy* also argues that leaving such factors as the actual level of China’s nuclear force somewhat ambiguous injects uncertainty into the other party’s policymaking, which in turn can elevate the effectiveness of deterrence based on limited nuclear war capability. It further maintains that simultaneously sending out different messages can also enhance a deterrent effect. In other words, while it is normally desirable for a central command and lower levels to send the same message, at times, having different people send out different messages can add to the other party’s uncertainty.¹⁷

Yet another characteristic is the deliberation over how to transmit a determination. *The Science of Second Artillery Campaigns* presents a variety of specific means to publicize when an important decision has been made regarding deterrence; such means would include providing the media with news and photographs on new types of missiles, using military parades, inspection of military units by leaders, and similar opportunities to display military might, troop movements, missile launch exercises, and intimidation by making it known that the threshold for introduction of nuclear weapons into conventional warfare is being lowered.¹⁸ Such approaches make it clear that transmission of China’s determination is seen as a further step in propaganda operations. From the Mao Zedong years through the Deng Xiaoping years, it was thought that hiding one’s power from the enemy would produce uncertainty in the enemy’s mind, but more recently, the view is that exposure of at least some elements of China’s military might can make plain China’s power and will.

Since the number of warheads in the Chinese nuclear arsenal is limited and since only those surviving an enemy’s first strike could be used in retaliation, they would be directed at targets that the enemy would most fear being attacked, that China would have that capacity to attack, and that would have a significant, across-the-board impact on strategy.¹⁹ Specific

targets seem to include the other country's cities and important infrastructure, and in that sense, this approach to deterrence seems close to the "counter value" addressed in deterrence theory. The 2013 edition of *The Science of Military Strategy* also notes that while nuclear attacks could be directed at the enemy's military forces or at its major cities, attacking the enemy's military is an aggressive strategy used by a state with a strong nuclear strategy; this observation could suggest that China is looking more at cities as targets.²⁰ In Chinese discussion of such topics, however, it can be uncertain just where the dividing line stands between counter value and counter force (i.e., attacks against an enemy's nuclear forces).

So long as China advocates the principle of no first use, it supposes that the enemy will attack China first. Its nuclear missile launch sites and other facilities thus must remain usable after the enemy's first strike. Given this fact, military thinkers argue the importance of building tunnels and other facilities which make use of natural conditions, constructing false targets and military bases, and releasing false information to protect China's nuclear missile bases.²¹

(b) Discussions on Nuclear Deterrence Strategy and Qualitative Improvements to the Nuclear Force

The problem that has faced China since the latter half of the 1990s has been that its ability to conduct assured second strikes can be threatened by the development of other countries' military technology, including precision strike weaponry and missile defense capabilities of the US and other countries, as well as their more recent conventional prompt global strike capabilities using supersonic or hypersonic conventional missiles.²² Such trends are related, first, to the domestic Chinese discussion of nuclear strategy and, second, to the attempts to achieve qualitative improvement in Chinese nuclear forces.

First, debate is underway in China on whether or not it should maintain its current defensive posture. So far, at least, such debate has not come down strongly on the side of changing China's nuclear strategy. Debate is also looking at whether China should continue to adhere to the no first use principle, or whether China should make that principle conditional or even discard it. In the Chinese Defense White Paper for 2012, there was no statement of no first use. Later a Defense Ministry spokesman stated that did not represent abandonment of no first use, but the failure of this principle to appear in the Defense White Paper has sparked a variety of conjectures.

Discussion which seeks changes in the principle of no first use makes the following sort of points.²³ First, this principle blocks a flexible deterrence policy. Second, the principle of no first use should not be applied to nuclear bases and other important strategic targets by conventional precision-strike weapons. And third, the principle of no first use should not be adhered to in the case of large-scale intervention against Chinese military action toward Taiwan.

At present, however, this does not mean that the principle of no first use has been abandoned or revised. It is expected that such changes would carry a heavy cost. There could well be strong institutional or political resistance to changing a principle that stretches back to the days of Mao. It is also possible that changes to this principle would be taken as a political and strategic signal of changes in China's external relations, particularly in its relationship with the US. Nuclear strategy is first of all an issue at the level of national strategy, which is set by China's political leadership, and such decisions are not necessarily determined by military rationale alone. It is also possible that to some extent, the political leadership may be permitting such debate as a diversionary action toward the US.

Second, a variety of measures are being taken, or at least considered, to ensure second-strike capability, which can be influenced by new military technology. Here, it is considered important to improve nuclear missiles' ability to survive attacks and find new methods for debilitating an enemy's missile defense system.

Some measures thought to have already been introduced to increase missiles' survivability include switching from launching missiles from silos to primary use of mobile launch systems such as transporter erector launchers (TEL), using solid propellants instead of liquid fuels, and concealment of missile launch bases and positions.

One matter which will likely receive more attention in future is early warning. Xi Jinping has emphasized that China is building a tactical system whereby, in either peacetime or wartime, a high degree of early warning and conducting attacks at any moment will be possible.²⁴ The 2015 edition of *The Science of Military Strategy* by the PLA National Defense University also stresses the importance of having a higher level of early warning capacity and strengthening China's capacity for rapid response.²⁵ While China indeed appears to be fortifying its ground-based early warning radar,²⁶ it is unclear whether China does not yet have any early warning satellites or, if it does have them, is not yet putting them to use, which leaves questions regarding its capabilities.

Since China is stressing immediate response capability, it is open to argument whether it is seeking "launch on warning" capabilities. (Launch on warning refers to attacking the enemy in a situation where the enemy has decided on or initiated procedures for a nuclear attack but has not yet launched the attack, for example through launching a ballistic missile.) Nuclear warheads, however, are not mated during peacetime, and the PLASAF is under CMC command and does not have the authority to launch nuclear missiles on its own, so any counterstrike will likely require some time. Thus it is unlikely that China can resort to launch on warning.

As already pointed out in the preceding chapter, China is also aware of the importance of missile defense. If the PLASAF is involved in the process, it would likely be through ground-launched mid-course missile interception. It has been reported that China in fact

conducted ballistic missile interception tests in January 2010, January 2013, and July 2014.²⁷

Some countermeasures to defeat missile defense have already been introduced and research into other measures is underway. Some examples of such measures would include multiple warheads, supersonic or hypersonic missiles, trajectory control, stealth technology, and electronic interference.²⁸

(3) Trends in Delivery Means

The introduction of a new generation of mid- and long-range ballistic missiles has been underway since the latter half of the 2000s, with the intermediate-range DF-3 missile and the intercontinental ballistic DF-4 missile moving toward retirement.

China has achieved notable qualitative improvement in its long-range missiles, introducing the solid-fuel, TEL system DF-31 and DF-31A missiles as well as a multiple-warhead version of the DF-5A. A number of launch tests have also been conducted for the solid-fuel, TEL system, multiple-warhead DF-41.

Regarding transportability, in the past a number of launch points have been identified and the military moved missiles among those points, but present research is aiming for more and wider mobility.

In addition, as already touched on in the first two chapters, other nuclear warhead delivery means are still under development or under study. It is unclear whether the Jin-class strategic nuclear submarine has yet embarked on patrols, and even if it is conducting patrols, this would be only in the initial stage. There is discussion of whether strategic bombers are being considered for nuclear weapons, but this is likely a step for the future.

Table 3-2: Deployment of Nuclear-Mounted Ballistic Missiles

Name	1985	1990	1995	2000	2005	2010	2015
DF-2	50	0	0	0	0	0	0
DF-3/3A	60	60	60+	30+	2	2	2
DF-4	4	6	10+	20+	20	10	10
DF-5/5A	2	2	7	20+	20	20	20
DF-5B	0	0	0	0	0	0	?
DF-21/21A	0	0	10	50+	33	80	80
DF-26	0	0	0	0	0	0	?
DF-31	0	0	0	0	6	12	12
DF-31A	0	0	0	0	0	24	30

Source: Revised and updated from Anthony Cordesman, *Chinese Strategy and Military Power in 2014* (Washington D.C.: Center for Strategic and International Studies, 2014), also using annual editions of IISS, *Military Balance*.

Table 3-3: China's Major Long-Range Ballistic Missiles

Name	Range	Type	Launch system	Fuel	Deployed	Remarks
DF-3A	3,000	Intermediate-range	Mobile	Liquid	1971	None
DF-4	5,500+	Intercontinental	Silo	Liquid	1980	None
DF-5/5A	13,000+	Intercontinental	Silo	Liquid	1981	None
DF-5B	13,000	Intercontinental	Silo	Liquid	2015	MIRV-mounted
DF-21/21A	2,150	Intercontinental	Mobile launcher	Solid	1991	None
DF-31	7,000+	Intercontinental	Mobile launcher	Solid	2006	None
DF-31A	11,000+	Intercontinental	Mobile launcher	Solid	2007	None
DF-41	15,000?	Intercontinental	Mobile launcher	Solid	Not yet deployed	MIRV-mounted
DF-26	4,000	Intermediate-range	Mobile launcher	Solid	2015?	Nuclear and conventional

Source: James C. O'Halloran, *IHS Jane's Weapons: Strategic 2015-2016* (IHS, 2015).

2. Development of Conventional Missiles

One notable trend for the PLASAF since the 1990s is the great increase in its conventional missiles. In 1985, all of the PLASAF missiles were designed to carry nuclear warheads, but as of 2012, the number of nuclear-capable missiles had fallen to forty percent.²⁹

Starting in 1985, the Chinese view of the inevitability of world war has transitioned to policies in preparation for more limited local wars.³⁰ Since the Gulf War of 1991, there has

also been progress toward modernization of the PLA through improvement in its conventional weapons. Against this backdrop, 1993 saw the establishment of the first conventional missile unit, the 815th Brigade (Leping, Jiangxi Province) at Base 52, which was equipped with the DF-15 short-range ballistic missile. During the Third Taiwan Strait Crisis of 1995-1996, the PLASAF conducted missile launch exercises using the DF-15.³¹ The Taiwan issue provided China with an occasion to concentrate on expanding its conventional ballistic missile force. Following the Third Taiwan Strait Crisis and on through the 2000s, China deployed a large number of short-range ballistic missiles as a threat to counter Taiwan's leaning toward independence.

As more and more facets of activity came to rely on information technology, the importance of precision strike capabilities has grown as well, and China has focused on conventional missiles and is increasing its capacity to impede US projection of force into other regions. Its development of medium-range ballistic missiles is expanding China's influence beyond Taiwan and into the region as a whole.

(1) An Aggressive Conventional Missile Doctrine

Unlike nuclear missiles, conventional missiles are premised on being used in attacks. According to *The Science of Second Artillery Campaigns*, conventional missile units apply the principle of “forestalling the enemy and striking with focus.”³² Here, “forestalling the enemy” refers to moving before the enemy does and striking where the enemy is unsuspecting and unprepared. During the early stages of war, conventional missiles are to be used first, before the enemy does so, and in the case of joint operations, they are to be used in advance of other weapons. In the case of amphibious landing attacks on islands, the navy is expected to secure control of the waters, and for the navy to do so, the air force must secure control of the air. And in securing control of the air, the PLASAF conventional missile forces can play a key role.

“Striking with focus” means to conduct precision strikes on important targets where the enemy is weakest. The 2008 Defense White Paper identifies the mission of the PLASAF conventional units as conducting precision medium- and long-range attacks on targets which are strategically and tactically important to the enemy. *The Science of Second Artillery Campaigns* defines the purpose of conventional missile attacks as disrupting the enemy's command structure, weakening the enemy's military force and its ability to carry out extended operations, giving the enemy a psychological shock, and forestalling the enemy's military intervention. It further enumerates the types of locations to become targets of attack: command centers, radar and communication centers, missile bases, air force and naval bases, energy facilities and electric power plants, and carrier strike groups.³³

In other words, concentrating attacks on the nodes of the enemy's command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) and force

projection systems seems to be uppermost in mind for all of these discussions. The 2013 edition of *The Science of Military Strategy* posits that during joint operations, the PLASAF conventional missile units must first attack such targets as the enemy's reconnaissance and early warning systems, electronic countermeasure systems, air defense missile bases, and air force bases to disrupt the enemy's fighting structure and suppress his war-making ability. In special circumstances, it notes, missiles should be used to attack the enemy's military satellites.³⁴

In such ways, the development of China's potential to conduct precision strikes with conventional missiles has attracted the concern of the United States as an anti-access and area denial (A2AD) measure. That is to say, the capability to conduct precision strikes on the other party's command and communication structure, bases, carrier strike groups and similar targets could mean that China would be able to block another party's force projection into East Asia. Without doubt, the development of China's war fighting capabilities and the debates on strategy give considerable backing to such a viewpoint.

Debate on the future is being directed at something above and beyond A2AD. The strategic significance of China's ability to make precision strikes with conventional missiles is receiving the recognition it deserves. According to the 2013 edition of *The Science of Military Strategy*, the characteristics of deterrence in today's military arena are (a) the "conventionalization" of deterrence capability (i.e., conventional missiles offer high technology, high precision, and high flexibility); (b) turning deterrent measures into combat applications (tying displays of power to deterrence by applying conventional military power to limited actual engagements); and (c) use of multiple varieties of deterrence.³⁵ Lora Saalman, Associate Professor at the Asia-Pacific Center for Security Studies, maintains that China views long-range precision strikes by the US as involving strategic conventional weapons as a means to reduce dependence on nuclear options while maintaining the dominant US position.³⁶ If China is aiming for the ability to conduct long-range precision strikes on the same level as the US, this will be even more significant than achieving A2AD.

(2) Development of Ballistic and Cruise Missiles

China has made great strides forward, both quantitative and qualitative, in its ballistic missiles and cruise missiles since the end of the 1990s.

In terms of quantity, China made major increases in the number of conventional ballistic missiles during the 2000s. In 1985 it had no conventional ballistic missiles, but since the Third Taiwan Strait Crisis of 1995-1996, China has made major increases in short-range missiles, and since the latter half of the 2000s, it has been greatly building up its medium-range missiles.

Turning to quality, China has greatly improved its potential to conduct precision strikes. Hitting a target accurately is very important to operations using conventional

Table 3-4: Changes in the Number of Conventional Ballistic Missile Launchers Deployed

Name	1985	1990	1995	2000	2005 (Note 1)	2010	2015
DF-11/11A	0	0	Small quantity	25	100-120	108	108
DF-15/15A	0	0	Small quantity	25	70-80	96	144
DF-15B	0	0	0	0	0	0	Unknown
DF-16	0	0	0	0	0	0	12
DF-21C	0	0	0	0	0	36	36
DF-21D	0	0	0	0	0	0	6
DF-26	0	0	0	0	0	0	Unknown
DF-10A	0	0	0	0	0	54	54

Note 1: For 2005, since *Military Balance* shows only the number of warheads, information is drawn from Office of the Secretary of Defense, “Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2005,” p. 45.

Source: Revised and updated from Anthony Cordesman, *Chinese Strategy and Military Power in 2014* (Washington D.C.: Center for Strategic and International Studies, 2014), also using annual editions of IISS, *Military Balance*.

missiles. According to a report by the RAND Corporation of the United States, analysis of differences in efficiency according to a missile’s target accuracy and assuming that China uses conventional short-range ballistic missiles to attack two points on a Taiwan runway which is 3,050 meters long and 46 meters wide to render it unusable, it would require thirty to forty missiles with a circular error probability (CEP) of 200 to 300 meters to accomplish this goal. If the missiles have a CEP of under ten meters, only a few will be required to make the runway unusable.³⁷ In future, if China can increase the ISR capabilities of its space bases, it will likely achieve greater target precision over a wider area.

China’s DF-11 and DF-15 short-range ballistic missiles have mainly been deployed at Base 52, directly across the strait from Taiwan. The new DF-16 is classified as a medium-range missile, but it has a range of 1,000 kilometers and is also thought to be deployed across the strait from Taiwan. A report from the US Department of Defense notes that as of 2015, the number of short-range ballistic missile launchers was 200 to 300, with at least 1,200 missiles available.³⁸ The DF-15B and DF-16 are said to offer very high accuracy, with a CEP of less than ten meters.

Regarding intermediate-range missiles, China has deployed the DF-21C medium-range ballistic missile and the DF-21D anti-ship ballistic missile. The DF-21C’s range permits it to reach all of the countries in the region, and the DF-21 was used in 2007 for testing

Table 3-5: Major Conventional Ballistic Missiles and Cruise Missiles

Name	Type	Range (km)	Launch system	Fuel	Deployed	CEP (m)
DF-11	Short-range	280-350	Mobile launcher	Solid	1992	600
DF-11A	Short-range	350-530	Mobile launcher	Solid	1998	200
DF-15	Short-range	600	Mobile launcher	Solid	1990	300
DF-15A	Short-range	600	Mobile launcher	Solid	1996	30-45
DF-15B	Short-range	600	Mobile launcher	Solid	2006	5-10
DF-16	Medium-range	1,000	Mobile launcher	Solid	2013	10?
DF-21C	Medium-range	1,750	Mobile launcher	Solid	2006	40-50
DF-21D	Medium-range	1,550	Mobile launcher	Solid	2006	<20
DF-26	Intermediate-range	4,000	Mobile launcher	Solid	Unknown	Unknown
DF-10A	Cruise	1,500+	Mobile launcher	—	2007	10

Source: IHS Jane's Strategic Weapon 2015-2016.

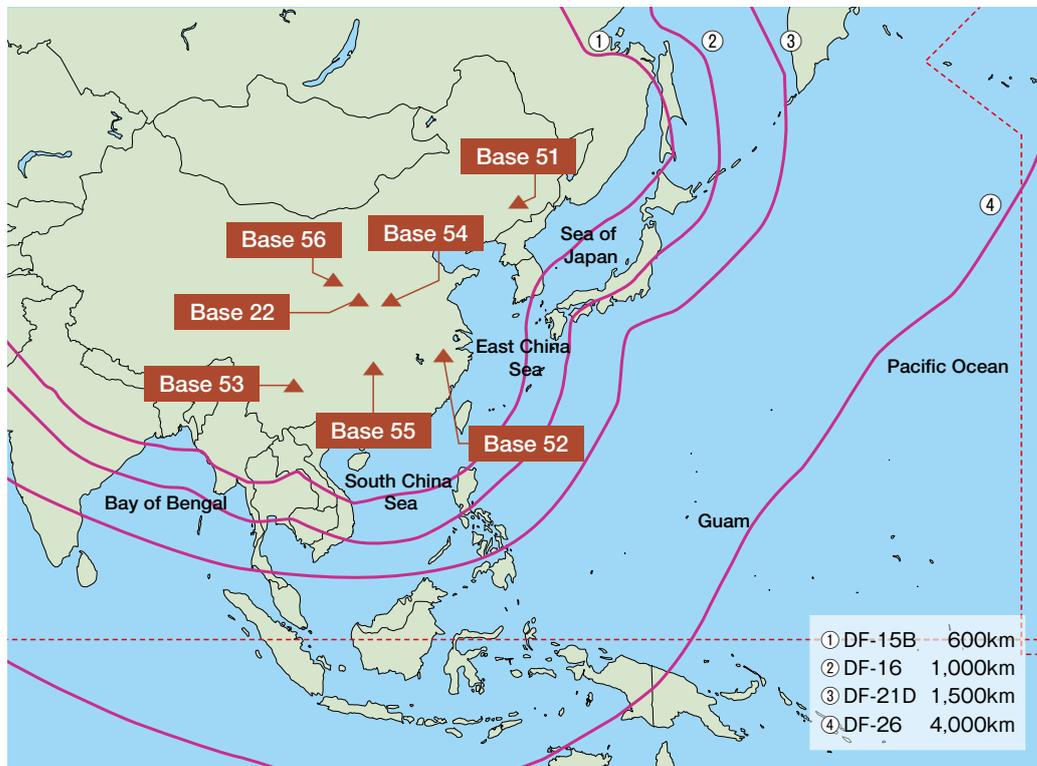
in destroying a satellite. The DF-21 and DF-21A, however, have low target accuracy and are thus regarded as probably being used for nuclear warheads.

The DF-21D is called a carrier-killer and in recent years has drawn marked attention for its development and deployment.³⁹ The development program for this model is thought to have actually started at the time of the Third Taiwan Strait Crisis of 1995-1996.⁴⁰ At that time the US Navy Seventh Fleet deployed carrier combat groups in the Taiwan Strait, but there was nothing that China could do in reaction. This turned China's attention to ways to prevent such a close approach by carrier strike groups in the future. Analysis conducted by Andrew S. Erickson, Associate Professor at the US Naval War College, indicates that while the DF-21D may not be fully suited to combat applications, it is at least technologically equipped for such a role, and it is undeniable that a number of DF-21Ds have been deployed.⁴¹ The DF-21D was first publicly displayed on September 3, 2015, as part of the parade celebrating the seventieth anniversary of China's victory over Japan in World War II. Since it seems that only weapons which have already been deployed to some degree are

displayed in military parades, its appearance would seem to indicate that DF-21D deployment is underway. It is thought to combine inertial guidance and terminal radar guidance. Since determination of the target ship's location is vital to anti-ship operations, both space-based ISR and ground-based over-the-horizon radar serve important functions. China's public display of the DF-21D may imply that it possesses the ISR capabilities needed for its operation.

The DF-26 first appeared in the September 3, 2015, military parade. This is China's latest intermediate-range ballistic missile and has a range of 4,000 kilometers, putting Guam within its range. The DF-26 is a dual-purpose

Figure 3-1: Range of Major Missiles



Source: IHS Jane's Strategic Weapon 2015-2016.

missile which can be mounted with either nuclear or conventional warheads. When carrying a nuclear warhead, it is capable of immediate counterstrikes, and when fitted with a conventional warhead, it is said to offer precision strikes on an enemy's bases and ships.⁴²

Regarding China's long-range ground-to-ground cruise missiles, the DF-10A has been deployed⁴³ and has a range above 1,500 kilometers. For guidance it relies on inertial navigation, terrain contour matching, and digital image collation, and it uses GPS navigation as well, with an apparent CEP of ten meters. Cruise missiles may present problems of speed and the destructive force they can bring to bear, but they fly at low altitudes which permit them to evade radar, can correct course during flight, and employ turbofan engines, making them less expensive than ballistic missiles and able to be mounted on a variety of platforms. The CJ-10 cruise missile, an air-to-ground variety, is mounted on the H-6K bomber.

3. The Future of the PLASAF

While China continues to pledge no first use of nuclear weapons, it is also working to make qualitative improvements in its fighting forces. At the same time, it is making major quantitative and qualitative improvements regarding its conventional missiles. The following are some of the directions that the PLASAF will take over the next ten years.

First, the PLASAF will likely continue its efforts for qualitative improvements and gradual increases in numbers of its nuclear weaponry, with the goal of greater survivability and assurance of a second-strike capability. Deployment of the DF-41 means that China is likely to be successful in mobile launch capability for its Intercontinental Ballistic Missiles (ICBMs) as well as use of solid fuel and multiple independently-targetable reentry vehicles (MIRVs), meaning a great increase in its war capacity. It is also likely to seek more development of its ground-launched ballistic missiles as well as improvement in the capabilities of its strategic nuclear submarines and development of its strategic bombers.

Over the coming decade, China seems unlikely to seek to challenge the US in terms of nuclear capabilities, so it is not expected to make major increases in the number of its nuclear warheads.

Second, regarding China's conventional missile force, there will in particular be notable increases in the capabilities of mid-range missiles. It already has a considerable number of short-range ballistic missiles, but even if intermediate-range missiles are given the responsibility of conducting precision strikes on an enemy's C4ISR and force projection nodes, their numbers seem to fall short of what is needed to accomplish this goal, so it is possible that the intermediate-range missiles will be reinforced.

In addition, the strengthening of China's conventional missile force will not only be a cause of greater regional insecurity, it may also distract from the provisions of the Intermediate-Range Nuclear Forces (INF) Treaty. The INF was a treaty between the US and the Union of Soviet Socialist Republics (USSR) forbidding ballistic or cruise missiles with ranges from five hundred to 5,500 kilometers, whether they carried nuclear or conventional warheads. The expansion of intermediate-range missile forces by China, which is not a party to this treaty, would create a strategic imbalance in the region and also make the treaty itself less effective.

Third, the development of China's conventional missile force could possibly make the threshold between its nuclear forces and conventional forces more ambiguous.⁴⁴ According to the 2013 edition of *The Science of Military Strategy*, a compound deterrence using both nuclear and conventional forces could give China a more flexible deterrence, with conventional deterrence as the basic approach, backed up by nuclear deterrence.⁴⁵ The 2015 edition of *The Science of Military Strategy* by the PLA National Defense University goes even further, discussing the unification of nuclear and conventional attack capabilities. In other words, by organically fusing a nuclear counterstrike capability with the ability to conduct conventional attacks, China would possess dual war-making capacity and could eventually move beyond merely having both nuclear and conventional capabilities to a unified nuclear and conventional force.⁴⁶ The DF-26 missile is in fact both nuclear and conventional, capable of carrying either nuclear or conventional warheads, which may make it quite difficult to determine which it is carrying at any particular time.

Fourth, as more and more countries achieve the ability to conduct precision strikes, China will likely seek and research methods to diminish other countries' ability to do so. Research and development (R&D) is also likely to continue on supersonic missiles, be they nuclear or conventional. Attention is being paid, too, to hypersonic cruise missiles and hypersonic glide vehicles (HGV), and R&D will move forward as well on measures to counteract these. Research will also likely continue particularly concerning electronic warfare and informationized warfare or new technology such as laser weapons. As a result of the spread of the ability to conduct precision strikes, such directions are likely to apply to other countries as well, and in fact, China is already engaged in such research.

Last, it is far from clear how the chain of command will be handled when the PLASAF engages in joint operations, making this a topic requiring future attention. Since the PLASAF is under the direct command of the CMC, its chain of command is different from those of the army, navy, and air force. The CMC is in charge of making decisions about use of nuclear force, but some adjustments will probably be necessary when conventional missile units are engaged in joint operations.

Viewpoints differ on this point, however. The 2013 edition of *The Science of Military Strategy* states that in the case of use of conventional missile forces, factors such as scale and

timing must be determined by CMC decision. In contrast, according to John W. Lewis, Professor Emeritus at Stanford University, and Xue Litai, research scholar at Stanford University's Center for International Security and Cooperation, when the PLASAF participates in joint operations, it assigns a coordination group to the joint operations command center and issues orders to PLASAF brigades via this group.⁴⁷ This matter of chains of command will likely come in for attention in China's ongoing national defense and military reforms.

(Author: Shinji Yamaguchi)

Column

Development of Hypersonic Glide Vehicles

China is engaged in developing the WU-14 hypersonic glide vehicle (HGV). In January 2014, its Ministry of Defense conducted the first WU-14 flight test, followed by a total of four tests by June 2015.⁴⁸ This HGV is mounted on a ballistic missile and reenters the atmosphere at a speed of Mach 10. It then passes through near space and heads for its target, making early detection extremely difficult. It is expected to be able to pass through the US missile defense system.⁴⁹ Since it soars through near-space altitudes (twenty to one hundred kilometers above sea level), mounting the WU-14 on a ballistic missile is expected to give a ballistic missile much greater range than when it is fitted with a normal warhead. The WU-14 is still in the testing stage, and it is unclear just how it will eventually be used, but there is no denying its ability to carry a nuclear warhead.

Chapter 4

Enhancement of the PLA's Joint Operational Capabilities



1. Aiming to Win Informationized Local Wars

This report has analyzed trends in the strategies, expansion of scope of operations and modernization of equipment of the People's Liberation Army's (PLA) Navy, Air Force and Second Artillery Force (reorganized into the PLA Rocket Force at the end of December 2015), which have a direct impact on the security of East Asia, and examined their future outlook. Generally speaking, each of these services of the PLA can be viewed as steadily expanding the scope of its operations, particularly in the oceans, while aiming to conduct operations in distant areas and modernizing equipment in order to strengthen its power projection capabilities. However, it is difficult to understand the potential impact of this expansion on the security of East Asia by analyzing the Navy, Air Force and Second Artillery Force individually. This is because it is assumed that actual operations by the PLA in the seas of East Asia will not involve only one service of the PLA, for example the Navy on its own, but also the Air Force and Second Artillery Force, which have both been strengthening their ability to project power in this sea area. Therefore, in order to determine the future challenges China might pose for the security of East Asia, it is necessary to understand the overall strategy of the PLA and how it intends to use its military capabilities.

The defense white paper *China's Military Strategy*, published in May 2015, states that the "strategic concept of active defense" is the essence of the Chinese Communist Party's (CCP) military strategic thought.¹ Since the establishment of the CCP, the strategic concept of active defense formed through revolutionary wars over many years has been characterized by the unity of strategic defense and operational and tactical offense. *China's Military Strategy* states that China has always adhered to the principle of attacking only when attacked and counterattacking without fail if attacked. Since the foundation of the People's Republic, China has established its "military strategic guideline of active defense" on the basis of this strategic concept and has adjusted its nature according to the changing times. In 1993, for example, it adjusted the "basic point for preparation for military struggle (PMS)" to "winning local wars under high-tech conditions." In 2004, this basic point for PMS was modified to "winning local wars under conditions of informationization."

In *China's Military Strategy*, China announced that it had further modified its military strategy of active defense. As its "military strategic guideline of active defense in the new situation," it stated that the basic point for PMS would now be "winning informationized local wars," in particular "highlighting maritime military struggle and PMS." However, although the defense white paper states the aim of developing a weaponry and equipment system that can respond to informationized warfare, it does not provide any clear explanation of what it means by "informationized local wars."

In *The Science of Military Strategy* (2013 edition) compiled by the PLA Academy of Military Sciences, the concept of informationized local wars is explained as follows.² The three main elements of the combat effectiveness of armed forces are materials, energy, and information. “Mechanized warfare,” the main form of conventional warfare, was spear-headed by materials and energy. In the industrialized age, with the development of energy, expansion of armaments production, and increase in population, the material and energy aspects of firepower, mobility, and troop strength formed the core of combat effectiveness. The most important determinants of combat effectiveness were the size of armed forces and the amounts of key weapons such as aircraft, ships, tanks and artillery.

However, the rapid development of information technology (IT) and its application in the military field has led to a change in the form of warfare from mechanized to informationized warfare. While materials and energy continue to be important resources for fighting wars, they are no longer the main factors determining combat effectiveness. In their place, information has assumed the leading role and information systems are now the key determinant of combat effectiveness. In informationized warfare, even if one side possesses powerful weapons, it cannot display high combat effectiveness and achieve victory without advanced capabilities in the operation of military information systems.

According to *The Science of Military Strategy*, the shift from mechanized warfare to informationized warfare has also given rise to changes in the mechanism of securing victory.³ The political aim of war is to impose one’s will on the enemy, while its military aim is one’s own survival and the destruction of the enemy. In the age of mechanized warfare, the basic means of achieving these war aims was to inflict heavy human and material losses on the enemy through large-scale attacks, thereby depriving the enemy of the ability to resist. However, such means not only resulted in great damage to one’s own country, but also did not necessarily wear down the enemy’s ability to resist. With advances in IT, it has become possible to achieve the aims of war by eliminating the enemy’s overall ability to resist through the control and paralysis of its systems, without having to inflict heavy human or material damage. The main targets of attack in informationized warfare will be the enemy’s core of systems such as administrative institutions, command and control centers, and the hubs of information networks. Inflicting great damage to the enemy’s combat effectiveness and psychology through a concentrated precision strike on these systems has become the mechanism for victory in informationized warfare. It is therefore assumed that the scale of war will be smaller than in the past.

2. Enhancing Capabilities for System-versus-System Operations

To win informationized local wars, the PLA is aiming to enhance “capabilities for system-versus-system operations based on information systems.” Regarding such capabilities, *China’s Military Strategy* states that “China’s armed forces will quicken their steps to transform the generating mode of combat effectiveness, work to use information systems to integrate a wide range of forces, modules and elements into overall operational capacity, and gradually establish an integrated joint operational system in which all elements are seamlessly linked and various operational platforms perform independently and in coordination.”⁴

China views the basic characteristic of informationized warfare as confrontation between the systems of the countries at war. *The Science of Military Strategy* argues that informationized warfare is no longer combat between the various operational elements, units and forces, but rather combat involving all elements and systems incorporating not only systems of operation for the use of military force but also systems of warfare including politics, economics, law and public opinion. Victory or defeat in such a war will depend on how well all these systems function. In system-versus-system combat, the enemy is viewed as a single organism. By inflicting a precise blow against the key points in its systems of operation and warfare and rapidly reducing the integrity, stability and balance of these systems, their mechanisms can be paralyzed, operational procedures disrupted, and functions undermined.⁵ *The Science of Military Strategy* further points out that the basic operational mode of combat between systems depends on networks of military information systems. Using informationized operational methods and weapons and equipment, these will be integrated joint operations that link and coordinate land, sea, air, outer space, and cyberspace operations. The two essential requirements for such integrated joint operations are military information systems via seamless networks and high-level joint operations by all the military services and their branches.⁶

The main elements of China’s research on military information systems can be summarized in the following five points.⁷

(1) Reconnaissance and early warning systems

These are the “eyes and ears” of operational systems. By setting up reconnaissance platforms in the domains of land, sea, air and outer space, linking these platforms and conducting integrated analysis of intelligence, the war situation can be grasped in real time.

(2) Command and control systems

Based on information networks, command and control systems are not only the foundation of situational analysis, operational decisions and operational command, but also provide effective support for command and control by, for example, making it possible to conduct combat training by simulation.

(3) Strike systems

Strike systems consisting of computers, digital communications and radar, etc. enable long-range precision strikes by various firepower and efficient designation of targets, making it possible to greatly enhance the effectiveness of weapons and equipment.

(4) Network and electromagnetic combat systems

In informationized warfare, fierce combat will take place in information networks and electromagnetic space. Combat involving satellite and datalink technologies is becoming a new field for network and electromagnetic combat systems.

(5) Comprehensive support systems

The element of support, such as surveys, climate data, supplies and maintenance, is a vital part of system-versus-system operations. Information systems such as satellites and computers are used in the operation of these systems.

The PLA is steadily enhancing the capabilities of these military information systems. Examples of this include the development of unmanned reconnaissance aircraft, introduction of command automation systems, and establishment of network combat units. Particularly noteworthy is the development of outer space through the launching of various satellites. Satellites can be divided into three types according to their use: remote sensing satellites that survey the situation on the earth's surface, navigation satellites that measure positions on the earth's surface, and communications satellites that transmit information. China is actively promoting the deployment of all three types of satellite. China's core remote sensing satellites, the Yaogan series, are equipped with synthetic aperture radar (SAR) and optical sensors. In August 2015, the Yaogan-27 was launched. China has also deployed the Gaofen series of high-precision imaging satellites. The Gaofen-2 satellite, which came into use in 2014, provides images with a resolution of one meter and China is planning to launch various other Gaofen satellites.⁸

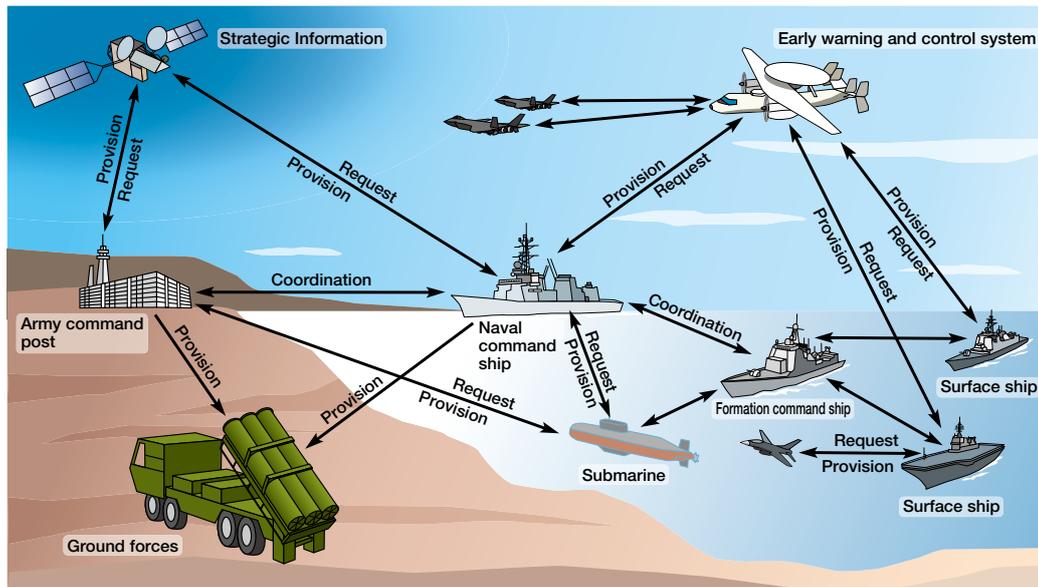
China is also building its own satellite navigation system based on the Beidou series of navigation satellites. This Beidou navigation system, said to be superior to the GPS operated by the US in respects such as its short message transmission function, is increasingly

being used in China's military operations.⁹ In July 2015, the improved 18th and 19th Beidou satellites were successfully launched and tests such as inter-satellite transmission are planned.¹⁰ The Beidou navigation system currently covers the Asia-Pacific region and there are plans to cover the whole world by deploying more than 30 Beidou satellites by 2020.¹¹ China is also actively developing communications satellites, planning to launch about 20 satellites, including data relay satellites.¹² Close attention will be paid to how China promotes the development of early warning satellites.

In view of its objective of winning informationized local wars, it has become an urgent task for the PLA to integrate the operations of the Army, Navy, Air Force, Second Artillery Force, and their respective branches. According to *The Science of Military Strategy*, since the PLA lacks experience in conducting integrated joint operations because it originally developed from the Army operating as a single military service and has mainly engaged in warfare led by one service of its armed forces. For informationized warfare, the PLA will have to change its concept of single non-autonomous integrated operations centering on the Army and conduct integrated joint operations under a single plan and overall command and control. Stressing the need for equality in the use of all of its military services and branches and combining their capabilities optimally, it points out that the PLA must aim to achieve operational effects where the whole is greater than the sum of its parts.¹³

Based on this understanding, the PLA is striving to conduct joint military exercises involving multiple services and branches. In March 2014, it set up the PLA Joint Training Leading Small Group, which took on the integrated planning and organization of joint training for all four services of the PLA.¹⁴ One recent example of joint exercises between different PLA services is the joint combat drills conducted in August 2014 by jet fighter units of the Navy and Air Force. In this exercises, leading-edge fighter aircraft of the Navy and Air Force conducted free combat drills based on no particular scenario. It is reported that the Navy and Air Force are undertaking joint missions in the East China Sea Air Defense Identification Zone.¹⁵ In October 2013, the PLA Navy (PLAN) conducted large-scale joint field training exercises in the Western Pacific called Maneuver-5. In these exercises, all five branches from the three fleets of the PLAN—the Surface Force, Submarine Force, Naval Air Force, Marine Corps, and Coastal Defense Force—conducted free field combat drills based on no particular scenario.¹⁶ It seems that the PLAN again conducted joint exercises in the Western Pacific on an even larger scale than Maneuver-5 at the end of 2014, but the details are unclear because it was not widely reported in the Chinese media. China is reported to be verifying forces' far seas operational capabilities through these open seas exercises.¹⁷

Figure 4-1: Image Chart of Informationized Local Wars at Sea



Source: Based on 胡志强 [Hu Zhiqiang], 优势来自联合 [Superiority through Jointness], 海洋出版社 [China Ocean Press], 2012, p. 265.

3. The Direction of Reforms of Command and Force Structures

As we have seen, the PLA has been striving to enhance its capabilities for system-versus-system operations based on information systems in order to win informationized local wars. To achieve this objective, it has been pointed out that the PLA needs to implement major reforms in its command and force structures. According to a study on reform of the armed forces published by the National Defense University's Research Center for Theories of Socialism with Chinese Characteristics, the main bottlenecks impeding improvement of the PLA's capabilities are long-accumulated systemic obstacles, structural contradictions, and policy issues. It points out that it is essential to overcome these problems and modernize the organizational structure of the armed forces. In order to promote reform of national defense and the armed forces, the study stresses the need for reform of the command structure by optimizing functions and structures within the Central Military Commission (CMC) and general departments that serve as command organizations to establish joint operational command systems in the CMC and battle zone commands. It also emphasizes the importance of reforming the PLA's composition, stating that adjusting and optimizing the composition of forces and, focusing on strengthening the Navy, Air Force and Second Artillery Force, making the building of new operational capabilities a strategic

priority are essential conditions for enhancing capabilities for system-versus-system operations based on information systems.¹⁸

Whether it is the reform of command systems or of force structure, the main target of these reforms will no doubt be the Army. Up to now the Army has held overwhelming influence over the other services of the PLA. Even in terms of the command structure, the General Staff Department, functioning as the headquarters of the Army, has stood above the respective headquarters of the Navy, Air Force, and Second Artillery Force.¹⁹ In order to build a system of command geared to joint operations, it will be essential to revise this system that gives ascendancy to the Army. Furthermore, since the scale of the Army is much greater than that of the other services, reforms in force structure involving the reduction of the Army will be unavoidable in order to strengthen the Navy, Air Force, and Second Artillery Force.

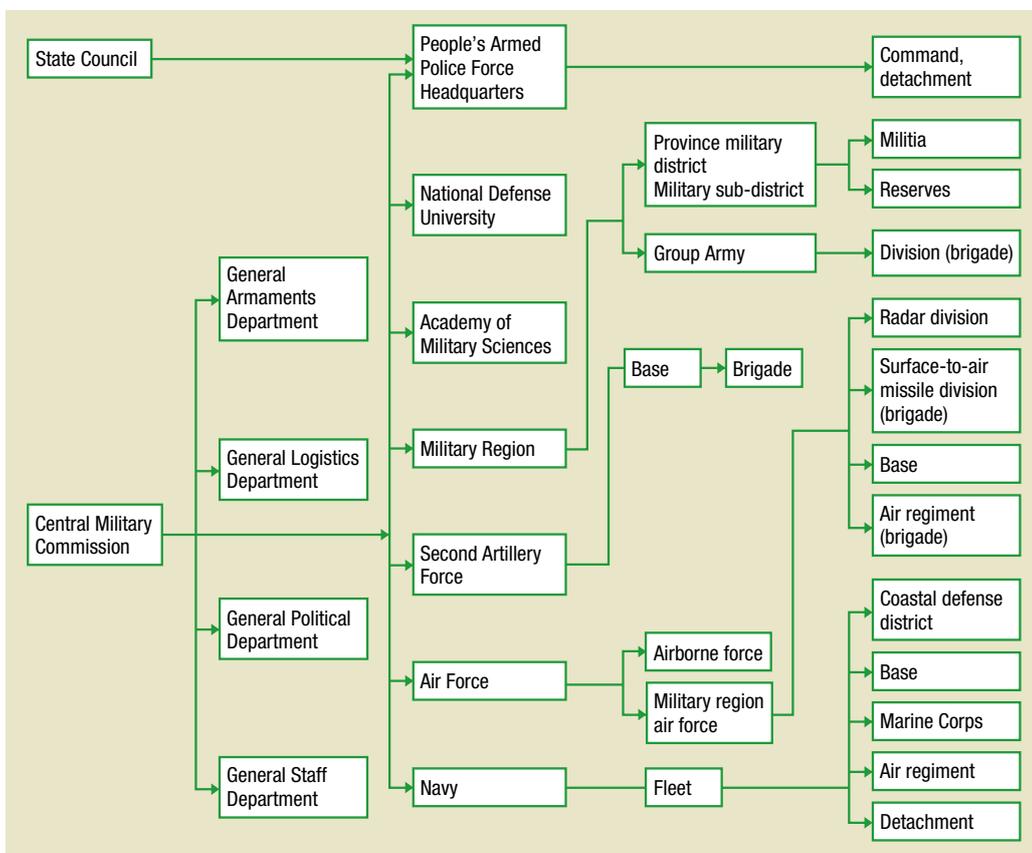
President Xi Jinping is passionate about promoting reform of the PLA's command and force structure. In the communiqué of the third plenary session of the 18th Central Committee held in November 2013, he stated, "we will endeavor to resolve the prominent problems that constrain the development of national defense and the armed forces" by "deepening the adjustment and reform of the military administrative setup and staffing." Immediately after this, in response to a report on the operations of the Jinan Military Region, based on his view that "both the position and role of the Army in warfare and its structural pattern and modes of operation have changed fundamentally in this age of information technology," Xi Jinping pointed out that "we must determine the appropriate position of the Army in joint operation systems" and "deepen our examination of reforms to the Army's command and control structure and determine appropriate overall planning and leadership for a change in configuration of the Army."²⁰ At a meeting in December of the same year, Xi Jinping stated that "the most important thing is a joint operations command structure," and that "we need a sense of urgency in establishing the joint combat command organizations of the CMC and the joint combat command mechanism of theaters. This is not something we can put off indefinitely."²¹ In March 2014, the Leading Small Group for Deepening Reform on National Defense and the Military was set up in the CMC with Xi Jinping as its chairman. In his speech at its first plenary meeting, pointing out that "there cannot be modernization of national defense and the military without modernization of the military's forms of organization," he stressed the need to "push forward the reform of military leadership systems, composition of the armed forces, and military policies and systems."²²

Amidst Xi Jinping's repeated issuance of such clear instructions, changes have started to appear in the PLA's command and force structure. Regarding the command structure, the East China Sea Joint Operational Command Center was established in November 2013 and it is reported that a joint operations command center was also set up within the CMC.²³ However, at a meeting of chiefs of staff of the PLA in September 2014, Xi Jinping again

emphasized the need for the establishment of a “new type of command headquarters.”²⁴ In December of the same year, with the agreement of Xi Jinping, a “guideline promoting the construction of a new type of command headquarters that will obey commands of the Party, formulate sound plans, and win battles” was issued by the CMC, once again stressing Xi Jinping’s call for the development of such a headquarters.²⁵ This suggests that the East China Sea Joint Operations Command Center and the joint operations command center within the CMC are different from the new type of command headquarters President Xi Jinping has been calling for.

Close attention will be paid as to whether or not the powers of the General Staff Department are reviewed and a new type of command headquarters that can exert unified control over command of the Army, Navy, Air Force and Second Artillery Force is set up, and whether or not the troop strength of the Army is reduced and a reform in force structure is made that will allocate more resources to the Navy, Air Force and Second Artillery Force. In this respect, the reform proposals made by Xi Jinping at a CMC meeting in November 2015 on reforming the armed forces are extremely important. Speaking in front of more than 200

Figure 4-2: Organizational Structure of the PLA (Before the end of 2015)



Source: 田越英 [Tian Yueying], 图解中国国防 [Illustrated Guide to Chinese Defense], 人民出版社 [People’s Publishing House], 2013, p. 5.

high-ranking military officers, Xi Jinping stated that, in addition to strengthening the joint operations command system in the CMC, by establishing new “battle zones” and joint command systems in each battle zone, a joint operational command structure running from the CMC through the battle zone commands to each service of the PLA should be established. He also proposed that a new Army headquarters be established in addition to the existing headquarters of the Navy, Air Force and Second Artillery Force, with a centralized administrative structure running from the CMC through each service headquarters to the troops.²⁶

The main aim of these reform proposals by Xi Jinping is to establish a basis for efficient joint operations transcending the military services and strengthen the CCP’s leadership over the armed forces by concentrating all powers of command and administration of the PLA under the CMC, of which Xi Jinping himself is chairman. At the meeting Xi Jinping stressed that breakthroughs in reform of the command and administration structures must be made by 2020. In fact, on December 31, 2015, the PLA Army general command and Strategic Support Force were established and the Second Artillery Force was reorganized into the Rocket Force.²⁷ Moreover, it was announced on January 11, 2016 that the four military head-

quarters had been reorganized into fifteen new agencies under the CMC.²⁸ If these proposed reforms are realized as planned, they will no doubt enhance the capabilities of the PLA to win informationized local wars. In view of the expected resistance to these reforms within the armed forces, Xi Jinping’s executive powers will be tested as he strives to realize them.

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The Expanding Scope of PLA Activities and the PLA Strategy

Conclusions



Conclusions

The People's Liberation Army's (PLA) Navy (PLAN), Air Force (PLASAF; reorganized into the PLA Rocket Force at the end of December 2015), and Second Artillery Force (PLASAF) are all seeking to increase their necessary capabilities based on their separate, individual strategies. One common characteristic of their strategies, however, could be called their reliance on Command, Control, Communication, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) and precision strikes to carry out military operations effectively in the areas distant from the Chinese mainland. All these services are working to realize this strategic goal, pushing forward to provide themselves with equipment to move ever farther afield and developing and deploying weapons to permit accurate attacks on far-off targets. For example, the PLAN is putting aircraft carriers and other large vessels into service and is deploying long-range fixed-wing patrol planes, intelligence-gathering aircraft, and bombers, as well as developing anti-ship missiles with a longer range and higher accuracy. The PLAAF is increasing its number of fourth-generation multirole fighters which offer excellent air-to-ground and air-to-ship attack performance; it is also continuing to develop heavy transport aircraft and in-flight refueling tankers among other varieties. The PLASAF, handling both nuclear and conventional missiles, is seeking to extend their range and increase their ability to pinpoint the target, and it is also developing anti-ship ballistic missiles that can fly from the mainland to attack enemy vessels on the far seas.

The PLAN and the PLAAF are indeed following their own strategies in expanding the scope of their activities far from the homeland. The PLAN has repeated live-fire and amphibious landing exercises in the South China Sea, conducted large-scale joint military training in the Western Pacific, and carried out counter-piracy activities off the coast Somalia and in the Gulf of Aden. The PLAAF has increased the number of fighter flights over the East China Sea and has started to conduct bomber flights over the Western Pacific. The PLASAF is expanding the geographic range within which its missiles can strike their targets, and all three services are steadily improving their force projection capabilities.

The PLA would seem to be strengthening its war fighting capabilities on and above the seas in particular by jointly employing the PLAN, PLAAF, and PLASAF, each of which is attempting to improve its fighting capabilities far from home. *China's Military Strategy*, the Chinese defense white paper, points out that the focus in preparations for military struggle is on informationized local wars, and this must precede maritime military conflicts and military readiness, and it made clear the Chinese policy of strengthening its system-versus-system operations based on information systems. The PLA would seem to have the goal of applying all sorts of military information systems, including space and cyberspace, and in

addition making joint use of all services—Navy, Air Force, Second Artillery Force, and indeed the Army—and all troops to achieve victory in informationized local wars at sea.

Following such a strategy, as the PLA expands the range of its activities to include the seas, it may greatly affect the security of East Asia in at least the following two ways. First, the tension may grow in China's relations with other countries of the region. In its dealings with the East China Sea and the South China Sea, China is in conflict with several of the countries of the region regarding territorial rights and sovereignty and maritime interests. Elements of confrontation and provocation have appeared in recent years as China goes about dealing with such countries regarding these matters, arousing the apprehension of the countries concerned. As the PLA is expected to increase its maritime fighting capabilities in coming years, whether China will engage in peaceful talks as equals on the maritime confrontations in East Asia or whether it will do so with menacingly, backed up by its military might, will have a major influence on China's relations with these countries.

Second, there is the possibility that China will upset the order of East Asian security. As the PLA has become more active at sea on a broader scale, it has repeatedly obstructed US military vessels and aircraft in the South China Sea which are operating in accord with international rules. The Chinese military has stepped up realistic joint exercises in the Western Pacific and sought in various ways to strengthen its capacity for nuclear deterrence directed at the United States (US), including the deployment of new strategic nuclear submarines. The foundation for the formation and maintenance of a security order in East Asia has been an American military presence and the cooperation from its allies and friendly countries supporting such a presence. If the PLA were to continue its challenges to the US presence in East Asia, and if such challenges were to prove effective, the existing order of security in East Asia could change dramatically. And if the US should step up its actions designed to maintain that order in the face of such efforts by China, this would necessarily mean an increase in tension in their bilateral relationship. Will China take the kind of stance it has shown in its activities off Somalia's coast and in the Gulf of Aden, and in its participation in the United Nations (UN) peacekeeping operations? Or will it respond with further challenge to the existing order, heightening the confusion and tension in East Asia? Close attention will be paid to the answer to these questions.

Whether East Asia can in future achieve stability and prosperity will depend on just how China goes about developing its security policies. Most desirable for the countries of the region would be for China to cease its attempts to alter the existing situation against the background of its own power and for it to become a responsible great power which would complement the existing security order. It is probable that achieving this would mean bolstering the dialogue between China and the countries of East Asia, with inclusion of the US, and thereby deepening a shared sense among the countries of the region as to the desirable

future for East Asia. In the future, it will likely be necessary to build and promote a variety of frameworks—bilateral, trilateral, and multilateral—and work toward promoting a candid dialogue with China.

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Chapter 1

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Chapter 2

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