# ANNUAL REPORT TO CONGRESS

## Military and Security Developments Involving the People's Republic of China 2015

Office of the Secretary of Defense

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# Annual Report to Congress:

## Military and Security Developments Involving the People's Republic of China 2015

### A Report to Congress Pursuant to the National Defense Authorization Act for Fiscal Year 2000

Section 1246, "Annual Report on Military and Security Developments Involving the People's Republic of China," of the National Defense Authorization Act for Fiscal Year 2010, Public Law 111-84, which amends the National Defense Authorization Act for Fiscal Year 2000, Section 1202, Public Law 106-65, provides that the Secretary of Defense shall submit a report "in both classified and unclassified form, on military and security developments involving the People's Republic of China. The report shall address the current and probable future course of military-technological development of the People's Liberation Army and the tenets and probable development of Chinese security strategy and military strategy, and of the military organizations and operational concepts supporting such development over the next 20 years. The report shall also address United States-China engagement and cooperation on security matters during the period covered by the report, including through United States-China military-to-military contacts, and the United States strategy for such engagement and cooperation in the future."

# Executive Summary



**The People's Republic of China (PRC)** continues to pursue a long-term, comprehensive military modernization program designed to improve its armed forces' capacity to fight short-duration, high-intensity regional conflicts. Preparing for potential conflict in the Taiwan Strait remains the focus and primary driver of China's military investment; however, the PRC is increasing its emphasis on preparations for contingencies other than Taiwan, such as contingencies in the East China Sea and South China Sea. Additionally, as China's global footprint and international interests grow, its military modernization program has become progressively more focused on investments for a range of missions beyond China's periphery, including power projection, sea lane security, counter-piracy, peacekeeping, and humanitarian assistance/disaster relief (HA/DR).

China views modernization of the People's Liberation Army (PLA) as essential to achieving great power status and what Chinese President Xi Jinping calls the "China Dream" of national rejuvenation. Chinese leaders see a strong military as critical to prevent other countries from taking steps that would damage China's interests and to ensure China can defend itself, should deterrence fail. China seeks to ensure basic stability along its periphery and avoid direct confrontation with the United States in order to focus on domestic development and smooth China's rise. Despite this, Chinese leaders in 2014 demonstrated a willingness to tolerate a higher level of regional tension as China sought to advance its interests, such as in competing territorial claims in the East China Sea and South China Sea.

China's military modernization has the potential to reduce core U.S. military technological advantages. China's officially-disclosed military budget grew at an average of 9.5 percent per year in inflation-adjusted terms from 2005 through 2014, and China will probably sustain defense spending growth at comparable levels for the foreseeable future. Moreover, China is investing in capabilities designed to defeat adversary power projection and counter third-party —including U.S.— intervention during a crisis or conflict.

During 2014, the PLA continued to improve its capabilities for theater contingencies, including: cruise missiles; short- and medium-range ballistic missiles; high performance aircraft; integrated air defense; information operations; and amphibious and airborne assault. The PLA is developing and testing new intermediate- and medium-range conventional ballistic missiles, as well as long-range, land-attack, and anti-ship cruise missiles that extend China's operational reach, attempting to push adversary forces—including the United States—farther from potential regional conflicts. China is also focusing on counter-space, offensive cyber operations, and electronic warfare capabilities meant to deny adversaries the advantages of

modern, informationized warfare. In 2014, China also started reclaiming land and building infrastructure at its outposts in the Spratly Islands. China will be able to use them as persistent civil-military bases of operation to enhance its presence significantly in disputed areas.

PLA global operations in 2014 included counter-piracy patrols, humanitarian assistance and disaster relief, exercises and sea lane security. Highlights include the deployments of the 17th and 18th Naval Escort Task Forces to the Gulf of Aden, PLA Navy frigates escorting cargo ships carrying chemical weapons materials out of Syria, search and rescue support for Malaysia Airlines MH370, participation in UN peacekeeping missions, circumnavigation of the African continent, and the first-ever deployment of a SHANG-class nuclear powered submarine (SSN) and SONG-class diesel electric submarine (SS) to the Indian Ocean.

The Department of Defense (DoD) approach to China is part of a broader U.S. strategy for the Asia-Pacific region that is focused on building a stable and diversified security order, an open and transparent economic order, and a liberal political order. U.S. policy toward China is based on the premise that it is in both countries' interests to expand practical cooperation in areas where both countries' interests overlap, and to constructively manage differences.

Sustaining the positive momentum in the military-to-military relationship supports U.S. policy objectives to encourage China to uphold international rules and norms to contribute to regional and global problem-solving. DoD seeks to continue building a military-to-military relationship with China that is sustained and substantive, while encouraging China to contribute constructively to efforts to maintain peace and stability with the United States, our allies and partners, and the greater international community.

As the United States builds a stronger foundation for a military-to-military relationship with China, it must also continue to monitor China's evolving military strategy, doctrine, and force development, and encourage China to be more transparent about its military modernization program. In concert with its allies and partners, the United States will continue adapting its forces, posture, and operational concepts to maintain a stable and secure Asia-Pacific security environment.

**Executive Summary** i

**Chapter 1:** Annual Update 1

**Chapter 2:** Understanding China's Strategy 21

**Chapter 3:** Force Modernization Goals and Trends 31

**Chapter 4:** Resources for Force Modernization 49

**Chapter 5:** Force Modernization for a Taiwan Contingency 57

**Chapter 6:** U.S.-China Military-to-Military Contacts 63

**Special Topic:** Space Lift Capabilities and Launch Trends 69

**Special Topic:** China's Development and Testing of Missile Defense 71

**Special Topic:** China's Land Reclamation in the South China Sea 72

**Appendix I:** Military-to-Military Exchanges 73

**Appendix II:** China and Taiwan Forces Data 78

**Appendix III:** Additional Maps and Charts 85

# 1

# ANNUAL UPDATE

This chapter provides a brief synopsis of significant developments in Chinese military and security activities over the course of the past year, with an emphasis on developments specifically highlighted in section 1246 of the National Defense Authorization Act for Fiscal Year 2010 (P.L. 111-84).

## DEVELOPMENTS IN CHINESE MILITARY DOCTRINE AND TRAINING: PLA WEIGHING SUBSTANTIAL REFORMS

At the conclusion of the 3rd Plenum of the 18th Chinese Communist Party (CPC) Central Committee in November 2013, the CPC directed the PLA to implement a number of key reforms. In the months that followed, the PLA took a number of steps to posture itself to implement these reforms. This included establishing a Leading Group for Deepening Defense and Military Reforms, chaired by Chinese President Xi Jinping and the Central Military Commission (CMC) Vice Chairmen Fan Changlong and Xu Qiliang as deputies, and issuing a series of articles in state- and party-controlled media calling on the military rank and file to join in reform and, notably, not to oppose it.

The reforms likely under consideration include but are not limited to: reducing non-combat forces, such as the General Political Department's Culture and Arts Bureau and Culture and Sports Bureau; raising the number of Navy, Air Force, and Second Artillery Force personnel relative to the Army, particularly "new-type combat forces" like naval aviation, cyber, and special forces; raising the enlisted-to-officer ratio; establishing a theater joint command system; and reducing up to two military regions. The PLA is currently in the "study and verification" phase of the process and will likely make a public announcement on specific reforms once decided, possibly as early as 2015. These reforms will probably be fully executed by 2020.

The PLA continues to convert divisions to brigades with the idea this will increase effectiveness by boosting overall combat capabilities. This is part of an overall modernization effort to streamline the force and reduce non-combat positions such as political entertainment units or headquarters staffs. Another element is placing non-commissioned officers in positions traditionally held by officers or by having civilians take over those duties.

Continued development of army aviation units, special operations forces, and air-land mobility are also increasing the agility of the force and building a nascent expeditionary capability. This change in how the PLA trains for combat and would fight during a conflict has required fundamental changes to PLA doctrine. Dissemination of this revised doctrine will likely take some time but will support the PLA's modernization goals for 2020.

Additionally, the PLA senior leadership has discussed forming a ground forces headquarters (Army only) which would probably be at the same level as the other respective service headquarters. Traditionally, the senior levels of the PLA are held by

ground force officers. Separating the Army headquarters from the PLA's General Staff Department (GSD) would allow the PLA to increase jointness and bring the operational strengths of the other services and arms into full play.

In 2014, the PLA continued focusing exercise activity on developing joint and core service capabilities emphasizing greater combat realism and an increasingly complex electromagnetic environment. While continuing to exercise mobilization, long distance maneuvers, logistics, and joint command and control (C2) (highlighted in 2013 exercises such as MISSION ACTION), several large-scale PLA exercises in summer and fall of 2014 also demonstrated a new emphasis on comprehensive, military-wide training. In STRIDE (KUAYUE) 2014, combined arms brigades from all seven military regions deployed to two military region's training centers. Each unit was evaluated on mobilization and combat operations against an opposing force. Similarly, JOINT ACTION (LIANHE XINGDONG) 2014 included seven evolutions conducted across the various military regions with participation by PLA Army, Navy, Air Force, Second Artillery Force, People's Armed Police, militia and reserve forces, all with a common focus on joint C2 utilizing an integrated command platform during joint operations and live fire evolutions. Lastly, FIREPOWER (HUOLI) 2014 included ten large-scale evolutions primarily with artillery and air defense brigades from at least six military regions and significant participation by military academies. Key objectives included joint planning, intelligence, surveillance, and reconnaissance (ISR) support, and command and control of integrated joint fire power against opposition forces.

The PLA rarely hold joint exercises that span all of the military regions; the effort to hold three such large scale military-wide training events, all emphasizing standardization of doctrine, training, and methods of evaluation, is a significant milestone in the PLA's long-term goal of developing into a modern, professional, and capable military force.

During 2014, an increase in the standardization of logistical systems enabled the PLA to better refine combat readiness. This, combined with improved coordination with local and provincial civilian authorities, has decreased the time required for units to mobilize.

## BATTLING CORRUPTION

A national anti-corruption campaign is underway to attempt to root out systemic corruption within the Chinese Communist Party. In 2014, the investigations of two top former Chinese leaders were made public; retired CMC Vice Chairman Xu Caihou was expelled from the CPC in June—the highest ranking PLA official expelled for corruption since 1978—and former security chief and member of the Politburo Standing Committee Zhou Yongkang was placed under investigation by the CPC Central Discipline Inspection Commission in late July.

## CHINESE USE OF LOW-INTENSITY COERCION IN MARITIME AND TERRITORIAL DISPUTES

China has used low-intensity coercion to advance its maritime jurisdiction over disputed areas of the East China Sea and South China Sea. During periods of tension, official statements and state media seek to frame China as reacting to threats to its national interests or to provocations by outside actors. China often uses a progression of small, incremental steps to increase its effective control over disputed territories and avoid escalation to military conflict. China has also used punitive trade policies as instruments of coercion during past tensions, and could do so in future disputes. For example, through trade tariffs, tourism restrictions, and limits on foreign direct investment.

> In 2012, China restricted Philippine fruit imports during the height of Scarborough Reef tensions, but Chinese leaders avoided taking major economic actions during frictions with Vietnam and the Philippines in 2014.

> In 2012, China took several unprecedented steps to build international support for its East China Sea claims, including submitting these claims through legal channels to the United Nations, issuing an official white paper defending China's sovereignty claim, and placing ads in prominent international newspapers.

> In 2010, China used its market-dominance in the rare earth industry as a political and diplomatic tool, restricting exports of rare earth minerals to Japan following tensions over a collision between a Chinese fishing boat and Japanese patrol ship. Chinese officials said the action was intended as a means of environmental protection, but the World Trade Organization (WTO) in 2014 ruled China's restrictions were discriminatory and violated WTO rules.

Employment of Chinese Coast Guard (CCG), PLA Navy ships, and the Chinese commercial fishing fleet is one tool China uses in conducting "low-intensity coercion" to advance its position with respect to its territorial and maritime disputes. CCG ships remain at the forefront of responding to perceived challenges to China's territorial and maritime claims as China seeks to avoid a military confrontation. China maintains a near-continuous presence of CCG ships in all disputed areas in an effort to demonstrate its ability to operate when and where it wants. During periods of tension in the South China Sea, China uses the quantity and advanced capabilities of its CCG assets to overwhelm and deter South China Sea claimant nations with the goal of eventually compelling regional acceptance of China's sovereignty claims. Ongoing island reclamation activity will support China's ability to sustain longer patrols in the South China Sea.

Enforcement of its East China Sea Air Defense Identification Zone (ADIZ) against Japanese aircraft and responses to Japanese maritime activity near the Senkaku Islands reflects Chinese efforts to normalize its presence near the islands and demonstrate its intent to defend its claims while avoiding serious miscalculations with Japan. The PLA Navy primarily plays a deterrence role in China's use of "low intensity coercion" and refrains from becoming directly involved in territorial and maritime disputes to avoid escalation. Although the PLA Navy remains at a distance, its deployed surface combatants are ready to respond to a deteriorating security environment.

## MARITIME TERRITORIAL DISPUTES IN 2014

Senior Chinese officials have identified protecting China's sovereignty and territorial integrity as a "core interest," and officials stress China's opposition to actions they perceive as challenging this core interest. China maintains that its maritime rights extend to virtually the entire South China Sea and often illustrates its claim using a "nine-dash line" that encompasses most of the area. At the same time, China is ambiguous about the precise meaning of the nine-dash line; to date, China has not clarified the meaning of the line or articulated its legal basis.

In 2014, China started reclaiming land and building enhanced infrastructure at its outposts in the Spratly Islands. When complete, these facilities could include harbors, communications and surveillance systems, logistics support, and at least one airfield. Whereas these reclaimed areas do not provide China with any additional right to claim maritime geography within the South China Sea, China will be able to use them as persistent civil-military bases of operation to significantly enhance its presence in the disputed area.

Throughout 2014, Chinese ships maintained a presence at Scarborough Reef, continuing China's standoff with the Philippine Coast Guard that began in 2012. Chinese officials noted in 2014 that such patrols were normal and justifiable, claiming that China has indisputable sovereignty of the various islands in the South China Sea and adjacent waters. In May 2013, China sent CCG ships to the waters near Second Thomas Shoal in the Spratly Islands. Philippine military personnel are located on Second Thomas Shoal aboard a tank landing ship that was deliberately run aground there in 1999. A Chinese scholar claimed the Chinese patrols near Second Thomas are "legal and appropriate." In March 2014, China Coast Guard (CCG) ships for the first time blocked a Philippine resupply effort at Second Thomas Shoal. An additional attempt to prevent a surface resupply was made later the same month, but failed. Both sides continue to claim sovereignty over Scarborough Reef and maritime rights related to Second Thomas Shoal. China maintains a continuous CCG presence at both locations.

In January 2013, the Philippines requested that an arbitral tribunal constituted pursuant to Chapter XV of the United Nations Convention on the Law of the Sea (LOS Convention) determine that various Chinese actions in the South China Sea, including its "nine-dash line" claim, were inconsistent with China's obligations under the LOS Convention. China has refused to participate in the arbitration. In March 2014, the Philippines filed a memorial with the arbitral tribunal setting forth its position on jurisdiction and the merits of the case. China's Foreign Ministry publicly rejected the submission and turned down the opportunity

to file a counter-memorial, maintaining that the Philippines had agreed to resolve all South China Sea disputes through diplomatic discussions rather than third party dispute mechanisms. China's non-participation does not stop the case from proceeding and the tribunal may schedule a hearing in 2015 and issue a decision some months thereafter. How China responds to a potential ruling from the arbitral tribunal will reflect China's evolving approach to international maritime law.

Other areas of concern include the Luconia Shoals, roughly 60 miles north of Borneo, and Reed Bank in the South China Sea. The Luconia Shoals are disputed by China and Malaysia and may contain extensive oil and natural gas reserves, as well as productive fishing grounds. Reed Bank is claimed by both China and the Philippines, and in August 2014, China sent hydrographic research vessels to survey the area. In the spring of 2014, tensions between China and Vietnam spiked when China deployed and commenced operation of a State-owned exploratory hydrocarbon rig in waters disputed with Vietnam near the Paracel Islands.

China claims sovereignty over the Senkaku Islands (which the Chinese refer to as the Diaoyu Islands) in the East China Sea; this territory is also claimed by Taiwan and is under the administration of Japan. In April 2012, the Governor of Tokyo announced plans to purchase three of the five islets from private Japanese owners. In response, in September 2012, the Government of Japan purchased the three islands. China protested the move and since that time has regularly sent maritime law enforcement ships (and less often, aircraft) to patrol near the Senkaku Islands to challenge Japan's ability to demonstrate exclusive administration. This includes regular Chinese maritime operations within 12 nautical miles (nm) of the islands. In September 2013, China published a white paper entitled, "Diaoyu Dao, an 'inherent territory' of China" and submitted information to the UN Commission on the Limits of the Continental Shelf regarding China's extended continental shelf in the East China Sea, including waters near the islands. In November 2013, China announced the creation of its ADIZ in the East China Sea with coverage that included airspace above the Senkaku Islands and that overlapped with previously established Japanese, South Korean and Taiwan ADIZ. Chinese officials have continued to publicly reiterate the claim that the islands are part of China's territory and that it will resolutely respond to any external provocation. During the November 10-12, 2014, Asia-Pacific Economic Cooperation (APEC) Summit, President Xi held his first bilateral meeting with Japanese Prime Minister Abe and announced a four-point agreement to improve bilateral ties.

## THE SECURITY SITUATION IN THE TAIWAN STRAIT

Dealing with a potential contingency in the Taiwan Strait remains the PLA's primary mission despite an overall reduction of tensions—a trend that continued following the re-election of Taiwan President Ma Ying-jeou in January 2012. Should conditions change, the PLA could be called upon to compel Taiwan to abandon possible moves toward independence or to re-unify Taiwan with the mainland by force while deterring, delaying, or denying any third-party intervention on Taiwan's behalf.

Since its 2012-2013 leadership transition, China does not appear to have fundamentally altered its approach to Taiwan. China and Taiwan continue to explore ways to make progress on contentious issues. In 2014 China's lead government official for Taiwan made a historic visit to Taiwan to discuss economic issues and the need for continued government-to-government consultations. However, tensions arose during China's handling of the protests in Hong Kong over universal suffrage when Chinese President Xi emphasized his "firm and unwavering stance" on unification as the basis for cross-Strait relations. Taiwan President Ma Ying-jeou countered that Xi must be "very prudent" in handling dissenting voices in Hong Kong and his National Day speech in October 2014 expressed strong support for the pro-democracy protestors. In addition, protests in March 2014 against the Taiwan legislature's ratification of the Trade in Services agreement—a deal with the mainland meant to further economic cooperation—have also strained cross-Strait ties.

### Using Hydrocarbon Rig as a Sovereignty Marker

On May 2, 2014, China moved an exploratory hydrocarbon rig operated by State-owned China National Offshore Oil Company (CNOOC), the HD-981, from the vicinity of Hainan Island to an area about 12 nm from the nearest island in the disputed Paracel Islands—ending a period of lowered tensions with Vietnam in the South China Sea since early 2013. The rig was approximately 120nm east of Vietnam's coast and 180nm south of China's Hainan Island. China announced a 3nm-security radius around HD-981—despite the fact that the LOS Convention only allows a 500 meter safety zone—and said it would conduct drilling operations from May 4 - 15 August 2014.

China established three security cordons around the rig using a large number of Chinese Coast Guard, fishing, and commercial ships, beginning a standoff with Vietnamese ships, which repeatedly attempted to breach the cordon. Both sides relied primarily on non-military maritime assets to assert their respective sovereignty claims near the rig. PLA Navy ships supported operations in an overwatch capacity and PLA fighters, helicopters, and reconnaissance aircraft patrolled overhead. Chinese paramilitary ships frequently resorted to ramming and use of water cannons to deter Vietnamese ships and enforce the security cordons around the rig. In mid-May, anti-Chinese protests over the rig's deployment erupted in Vietnam and resulted in at least two Chinese deaths and more than 100 injured, after which more than 3,000 Chinese nationals were evacuated from Vietnam. China also suspended some plans for bilateral diplomatic exchanges with Vietnam.

Throughout tensions, China's foreign ministry asserted that Vietnam's attempts to interrupt China's drilling activities were a violation of China's sovereignty and that its claims to the Paracel Islands were indisputable. On July 15, 2014, China announced the completion of HD-981's initial exploration activities, one month ahead of schedule, stating that follow-on operations had not yet been arranged due to the impending typhoon season. China's rig could redeploy to disputed waters off Vietnam's coast or operate in other disputed areas in the South China Sea in the future.

**Timeline:**

May 3: China's Maritime Safety Administration announced that HD-981 would conduct drilling operations off of the disputed Paracel Islands.

May 4: China announced the start-date of drilling operations; Vietnamese Foreign Ministry protested China's actions.

May 3 - July 15: Ramming/ harassment between Chinese and Vietnamese ships near HD-981.

May 11 -14: Anti-China protests erupt in Vietnam over drill rig; foreign factories are damaged.

May 17 - 19: China evacuates citizens from Vietnam after two citizens die in anti-China protests.

May 26: Vietnamese fishing boat capsized after collision with Chinese fishing boat.

May 27: China's Ministry of Foreign Affairs reports that HD-981 completed the first phase of exploration and was transitioning to the second phase.

June 18: Chinese State Councilor Yang Jiechi held talks with Vietnamese officials in Hanoi; first high-level direct official contact since standoff began; no substantive progress over tensions

July 15: China announced the completion of HD-981's drilling activities one month earlier than scheduled; departure of rig

## CURRENT CAPABILITIES OF THE PEOPLE'S LIBERATION ARMY

**Second Artillery Force.** The Second Artillery Force controls China's land-based nuclear and conventional ballistic missiles. It is developing and testing several new classes and variants of offensive missiles, including hypersonic glide vehicles; forming additional missile units; upgrading older missile systems; and developing methods to counter ballistic missile defenses.

The Second Artillery Force possesses at least 1,200 short-range ballistic missiles (SRBMs) in its inventory. China is increasing the lethality of its conventional missile force by fielding a new ballistic missile, the CSS-11 (DF-16), which possesses a range of 800-1,000 km. The CSS-11, coupled with the already deployed conventional variant of the CSS-5 (DF-21) medium-range ballistic missile (MRBM), will improve China's ability to strike not only Taiwan, but other regional targets.

China is fielding a growing number of conventionally armed MRBMs, including the CSS-5 Mod 5 (DF-21D) anti-ship ballistic missile (ASBM). The CSS-5 Mod 5, with a range of 1,500 km and maneuverable warhead, gives the PLA the capability to attack ships in the western Pacific Ocean.

The Second Artillery continues to modernize its nuclear forces by enhancing its silo-based intercontinental ballistic missiles (ICBMs) and adding more survivable, mobile delivery systems. China's ICBM arsenal currently consists of 50-60 ICBMs, including the silo-based CSS-4 Mod 2 and multiple independently-targetable re-entry vehicle (MIRV)-equipped Mod 3 (DF-5); the solid-fueled, road-mobile CSS-10 Mod 1 and 2 (DF-31 and DF-31A); and the shorter range CSS-3 (DF-4). The CSS-10 Mod 2, with a range in excess of 11,200 km, can reach most locations within the continental United States. China also is developing a new road-mobile ICBM, the CSS-X-20 (DF-41), possibly capable of carrying MIRVs.

**PLA Navy.** Over the past 15 years, China's ambitious naval modernization program has produced a more technologically advanced and flexible force. The PLA Navy now possesses the largest number of vessels in Asia, with more than 300 surface ships, submarines, amphibious ships, and patrol craft. China is rapidly retiring legacy combatants in favor of larger, multi-mission ships, equipped with advanced anti-ship, anti-air, and anti-submarine weapons and sensors. Whereas "near seas" defense remains the PLA Navy's primary focus, China's gradual shift to the "far seas" has necessitated that its Navy support operational tasks outside the first island chain with multi-mission, long-range, sustainable naval platforms with robust self-defense capabilities.

The PLA Navy places a high priority on the modernization of its submarine force and currently possesses 5 nuclear attack

submarines (SSN), 4 nuclear ballistic missile submarines (SSBN), and 53 diesel attack submarines (SS/SSP). By 2020, this force will likely grow to between 69 and 78 submarines. In addition to the twelve KILO SS acquired from Russia in the 1990s and 2000s, China has built 13 SONG SS (Type 039) and 13 YUAN air independent-powered (AIP) attack submarines (SSP – Type 039A) with a total of 20 YUAN SSP planned for production. China continues to improve its SSN force, and four additional SHANG SSN (Type 093) will eventually join the two already in service. The SHANG SSN will replace the aging HAN SSN (Type 091). Over the next decade, China may construct a new Type 095 nuclear powered, guided-missile attack submarine (SSBN), which not only would improve the PLA Navy's anti-surface warfare capability, but might also provide it with a more clandestine, land-attack option. Finally, China continues to produce the JIN SSBN (Type 094) with associated CSS-NX-14 (JL-2) submarine-launched ballistic missile (SLBM) that has an estimated range of 7,400 km. This capability represents China's first credible, sea-based nuclear deterrent. China will likely conduct its first SSBN nuclear deterrence patrol sometime in 2015. Four JIN-class SSBNs are currently operational, and up to five may enter service before China begins developing and fielding its next-generation SSBN, the Type 096, over the coming decade.

Since 2008, the PLA Navy has continued a robust surface combatant construction program of various classes of ships, including guided missile destroyers (DDGs) and guided missile frigates (FFGs). During 2014, the final two LUYANG II-class DDG (Type 052C) entered service, bringing the total number of ships of this class to six. Additionally, the first LUYANG III-class DDG (Type 052D) entered service in 2014. It has a multipurpose vertical launch system capable of launching anti-ship cruise missiles (ASCMs), land-attack cruise missiles (LACMs), surface-to-air missiles (SAMs), and antisubmarine missiles. China will also likely begin construction of a larger Type 055 "destroyer" in 2015, a vessel better characterized as a guided-missile cruiser (CG) than a DDG. China has continued to produce the JIANGKAI II FFG (Type 054A), with 17 ships currently in the fleet and 5 in various stages of construction. These new DDGs and FFGs provide a significant upgrade to the PLA Navy's area air defense capability, which will be critical as it expands operations into distant seas beyond the range of shore-based air defense.

Augmenting the PLA Navy's littoral warfare capabilities, especially in the South China Sea and East China Sea, is a new class of small combatant. More than 20 JIANGDAO-class corvettes (FFL) (Type 056) are in service and an additional 11 were launched in 2014. China may build more than 60 of this class, ultimately replacing older PLA Navy patrol vessels, including the 60 HOUBEI-class wave-piercing catamaran missile patrol boats

(PTG) (Type 022) built for operations in China's "near seas."

The PLA Navy continues to emphasize anti-surface warfare (ASUW) as its primary focus, including modernizing its advanced ASCMs and associated over-the-horizon targeting (OTH-T) systems. Older Chinese surface combatants carry variants of the YJ-8A ASCM (65nm), while newer surface combatants such as the LUYANG II DDG are fitted with the YJ-62 (120nm). The LUYANG III DDG and Type 055 CG will be fitted with a variant of China's newest ASCM, the YJ-18 (290nm), which is a significant step forward in China's surface ASUW capability. Eight of China's twelve KILO SS are equipped with the SS-N-27 ASCM (120nm), a system China acquired from Russia. China's newest indigenous submarine-launched ASCM, the YJ-18 and its variants, represents a dramatic improvement over the SS-N-27, and will be fielded on SONG, YUAN, and SHANG submarines. China's previously produced sub-launched ASCM, the YJ-82, is a version of the C-801, which has a much shorter range. The PLA Navy recognizes that long-range ASCMs require a robust, over-the-horizon targeting capability to realize their full potential, and China has, therefore, invested heavily in reconnaissance, surveillance, command, control, and communications systems at the strategic, campaign, and tactical levels to provide high-fidelity targeting information to surface and subsurface launch platforms.

China's amphibious ship force has remained relatively constant in recent years following what was a robust modernization program in the early 2000s. Since 2005, China has built three large YUZHAO (Type 071) class amphibious transport docks, which provide a considerably greater and more flexible capability for "far seas" operations than the older landing ships. These investments signal China's development of an expeditionary and over-the-horizon amphibious assault capability as well as inherent humanitarian assistance/disaster relief and counter-piracy capabilities. The YUZHAO can carry up to four of the new air cushion landing craft YUYI LCUA, as well as four or more helicopters, armored vehicles, and forces for long-distance deployments. Additional YUZHAO construction is expected in the near-term, as is a follow-on amphibious assault ship that is not only larger, but incorporates a full flight deck for helicopters. Additional YUTING II class tank landing ships (LST) are currently being built to replace older LST units that are reaching the end of their service lives, and to support logistics operations, particularly in the South China Sea.

In 2014, the PLA Navy's first aircraft carrier, LIAONING, returned to Dalian and conducted an extensive maintenance period, the first since entering service in September 2012. Following four months of maintenance, LIAONING returned to its homeport at Yuchi and continued flight integration training throughout 2014. The air wing is not

expected to embark the carrier until 2015 or later. China also continues to pursue an indigenous aircraft carrier program and could build multiple aircraft carriers over the next 15 years. Even when fully operational, the *Liaoning* will not enable long-range power projection similar to U.S. NIMITZ-class carriers. The LIAONING's smaller size limits the number of aircraft it can embark, while the ski-jump configuration limits restricts fuel and ordnance load. The LIAONING is therefore best suited to fleet air defense missions, extending air cover over a fleet operating far from land-based coverage. Although it possesses a full suite of weapons and combat systems, LIAONING will likely continue to play a significant role in training China's carrier pilots, deck crews, and developing tactics that will be used with later, more capable carriers.

### PLA Air Force and PLA Navy Aviation.

The PLA Air Force (PLAAF) is the largest air force in Asia and the third largest in the world with more than 2,800 total aircraft (not including unmanned aerial vehicles (UAV) and 2,100 combat aircraft (including fighters, bombers, fighter-attack and attack aircraft)). The PLA Air Force is rapidly closing the gap with western air forces across a broad spectrum of capabilities from aircraft, C2, to jammers, to electronic warfare (EW), to datalinks. The PLA Air Force continues to field increasingly modern aircraft (now about 600). Although it still operates a large number of older second- and third-generation fighters, it will likely become a majority fourth generation force within the next several years.

China has developed the J-10B follow-on to its first indigenously designed fourth-generation fighter and it is expected to enter service in the near-term. To further bolster its tactical aircraft forces, China is likely to acquire the Su-35 advanced Flanker aircraft from Russia along with its advanced IRBIS-E passive electronically scanned array radar system. If China does procure the Su-35, the aircraft could enter service by 2018. In October 2014, Russian Deputy Prime Minister Dmitry Rogozin stated that Russia is likely to sign a contract to export 24 Su-35S fighters to China.

China has been pursuing fifth-generation fighter capabilities since at least 2009 and is the only country in the world other than the United States to have two concurrent stealth fighter programs. China seeks to develop these advanced aircraft to improve its regional power projection capabilities and strengthen its ability to strike regional airbases and facilities. The PLAAF has observed foreign military employment of stealth aircraft and views this technology as a core capability in its transformation from a predominantly territorial air force to one capable of conducting both offensive and defensive operations. The PLA Air Force believes stealth aircraft provide an offensive operational advantage that denies an adversary the time to mobilize and conduct defensive

operations. The third and fourth J-20 stealth fighter prototypes conducted first flights in March and July 2014, respectively, and test flights with a fifth prototype may occur by the end of 2015. Within two years of the J-20 stealth fighter's first flight in January 2011, China tested a second next generation fighter prototype. The prototype, referred to as the "J-31," is similar in size to a U.S. F-35 fighter and appears to incorporate design characteristics similar to the J-20. It conducted its first flight on October 31, 2012. At present, it is unclear if the J-31 is being developed for employment by the PLA, or as an export platform to compete with the U.S. F-35 on the arms market. It debuted at China's 10th China International Aviation & Aerospace Exhibition in Zhuhai in November 2014.

In addition to manned fighter aircraft, the PLA Air Force also views stealth technology as integral to unmanned aircraft, specifically those with an air-to-ground role, as this technology will improve that system's ability to penetrate heavily protected targets.

China continues upgrading its H-6 bomber fleet (originally adapted from the late-1950s Soviet Tu-16 design) to increase operational effectiveness and lethality by integrating new stand-off weapons. China also uses a modified version of the H-6 aircraft to conduct aerial refueling operations for some of its indigenous aircraft, increasing their combat range and has received three IL-78s from Ukraine outfitted as air refuelers with negotiations for additional aircraft ongoing. The H-6G variant, in service with the PLA Navy, has four weapons pylons that are probably for ASCMs. The PLAAF employs the H-6K variant with new turbofan engines for extended range and the capability to carry six LACMs. Modernizing the H-6 into a cruise missile carrier will give the PLA a long-range stand-off offensive air capability with precision-guided munitions.

The PLAAF possesses one of the largest forces of advanced long-range surface-to-air missile (SAM) systems in the world, consisting of a combination of Russian-sourced SA-20 (S-300PMU1/2) battalions and domestically produced CSA-9 (HQ-9) battalions. In an effort to improve its strategic air defense systems even further, China plans to import Russia's S-400/Triumf SAM system, as a follow-on to the SA-20, and may simultaneously develop its indigenous CSA-X-19 (HQ-19) to provide the basis for a ballistic missile defense capability.

China's aviation industry continues to test its Y-20 large transport aircraft for introduction into Chinese operational inventories to supplement and eventually replace China's small fleet of strategic airlift assets, which currently consists of a limited number of Russian-made IL-76 aircraft. The Y-20 made its maiden flight during January 2013 and is reported to be using the same Russian engines as the IL-76. China's press reports

that the Y-20 that it could be commissioned in 2016. The large transports are intended to support airborne C2, logistics, paradrop, aerial refueling, and reconnaissance operations, as well as HA/DR missions.

**PLA Army.** The PLA continues its long-term investment in its ground forces, focusing on creating the ability to fight and win land wars against modern, well-equipped, and trained enemy forces. 2014 saw continued emphasis on increasing PLA Army ability to deploy operational campaign-level forces across long distances quickly. PLA Army modernization continues to focus on expanded special operations forces (SOF); improved rotary-wing army aviation with precision-guided munitions (including dedicated air-to-air missiles for helicopter-to-helicopter aerial combat); and C2 capabilities with improved networks providing real-time data sharing within and between units. Production and fielding of improved, increasingly standardized PLA Army wheeled and tracked armored vehicles, advanced air defense systems and electronic warfare (EW) capabilities continues as well. Advanced long-range artillery systems, both conventional and rocket artillery, as well as supporting target acquisition systems continue to enter the force, providing PLA Army tactical- and operational-level units with world-class long-range strike capabilities.

**Space and Counterspace Capabilities.** China possesses the most rapidly maturing space program in the world and is using its on-orbit and ground-based assets to support its national civil, economic, political, and military goals and objectives. China has invested in advanced space capabilities, with particular emphasis on satellite communication (SATCOM), intelligence, surveillance, and reconnaissance (ISR), satellite navigation (SATNAV), and meteorology, as well as manned, unmanned, and interplanetary space exploration. In addition to its on-orbit assets, China's space program has built a vast ground infrastructure supporting spacecraft and space launch vehicle (SLV) manufacture, launch, C2, and data downlink.

By the end of October 2014, China had launched 16 spacecraft, either domestically or via a commercial space launch provider. These spacecraft mostly expanded China's SATCOM and ISR capabilities, while a few others tested new space technologies. Noteworthy 2014 accomplishments for China's space program include:

- First Sub-meter Resolution Imager: Following its launch in August, the Gaofen-2 became China's first satellite capable of sub-meter resolution imaging. China reportedly plans to use the satellite for a variety of purposes, including the sale of commercial imagery.
- Lunar Sample-Return Technology Test: In late October, China launched the Chang'e-5 test spacecraft. This mission

will test technologies related to retrieving and returning a lunar sample to Earth. China plans to launch the actual Chang'e-5 Lunar Sample Return mission in 2017.

- Fourth Space Launch Center Complete: China completed construction of the Wenchang Space Launch Center (SLC) on Hainan Island in 2014 and plans to begin launching its next-generation Long March-5 and Long March-7 SLVs from the facility no later than 2016.

In parallel with its space program, China continues to develop a variety of capabilities designed to limit or prevent the use of space-based assets by adversaries during a crisis or conflict, including the development of directed-energy weapons and satellite jammers. On July 23, 2014, China conducted a space launch that had a similar profile to the January 2007 test that resulted in the deliberate destruction of a defunct weather satellite, and the creation of hundreds of pieces of long-lived space debris. Much of that debris continues to orbit the Earth where it poses a risk to the safe operation of many nations' satellites. China's 2014 launch did not result in the destruction of a satellite or space debris. However, due to the evidence suggesting that this was a follow-up to the 2007 destructive test, the United States expressed concern that China's continued development of destructive space technologies represented a threat to all peaceful space-faring nations, and was inconsistent with China's public statements about the use of space for peaceful purposes.

On May 13, 2013, China launched an object into space on a ballistic trajectory with a peak altitude above 30,000 km. This trajectory took it near geosynchronous orbit, where many nations maintain communications and earth-sensing satellites. Analysis of the launch determined that the booster was not on the appropriate trajectory to place objects in orbit and that no new satellites were released. The post-boost vehicle continued its ballistic trajectory and re-entered Earth orbit 9.5 hours after launch. The launch profile was not consistent with traditional space-launch vehicles, ballistic missiles or sounding rocket launches used for scientific research. It could, however, have been a test of technologies with a counterspace mission in geosynchronous orbit. The United States and several public organizations expressed concern to Chinese representatives and asked for more information about the purpose and nature of the launch. China thus far has refrained from providing additional information.

Although Chinese defense academics often publish on counterspace threat technologies, no additional antisatellite programs have been publicly acknowledged. PLA writings emphasize the necessity of "destroying, damaging, and interfering with the enemy's reconnaissance ... and communications satellites," suggesting that such systems, as

well as navigation and early warning satellites, could be among the targets of attacks designed to "blind and deafen the enemy." PLA analysis of U.S. and coalition military operations also states that "destroying or capturing satellites and other sensors … will deprive an opponent of initiative on the battlefield and [make it difficult] for them to bring their precision guided weapons into full play."

## CHINESE ENGAGEMENT ON INTERNATIONAL CYBER ISSUES

China has increased diplomatic engagement and advocacy in multilateral and international forums where cyber issues are discussed and debated. China, along with the rest of the Shanghai Cooperation Organization (SCO), continues to promote its draft International Code of Conduct on Information Security that seeks intergovernmental control over cyberspace governance, advances principles of non-interference, and enshrines a broad conception of States' rights to control online content. Given the growing consensus on the need for cyber transparency and confidence-building measures in international forums such as the Organization for Security and Cooperation in Europe (OSCE), ASEAN Regional Forum, and the UN Group of Governmental Experts on Developments in the Field of Information and Telecommunications in the Context of International Security (UN GGE), China has sought a more influential role in these efforts. Following uncontested UN International Telecommunications Union (ITU) elections in late October 2014, a Chinese representative is slated to become the next Secretary General of the ITU.

## ADVANCED TECHNOLOGY ACQUISITION

China's advanced technology acquisition strategy continues to center on its civil-military integration policy as a means to leverage dual-use technologies to improve its defense industries. Despite improvements to its own indigenous technology development and industrial capacity, China continues to rely on the acquisition of critical advanced and Western dual-use technology, components, equipment, and know-how. These acquisitions manifest in the form of joint ventures, mergers and acquisitions, and close business partnerships with, and technology imports from, highly developed countries, primarily of the West, that offer access to critical advanced technology sectors. Notably, as Russia has come under pressure from sanctions imposed by the West over its actions in Ukraine, Russia is turning to China for investment to avert a recession and is now granting China access to advanced weapon systems that it once restricted.

China has used the lure of domestic market access to tap into a ready source of technology, research and development, and investment that benefits its domestic civilian

sectors and also, ultimately, its military modernization.

It is challenging to differentiate between civil and military end-use in China's high technology sector due to opaque corporate structures, hidden asset ownership, and the connections, cross-training, and exchange of commercial and military personnel. Despite some privatization, many commercial entities retain affiliation with PLA research institutes, or have ties, and are subject to the control of central government organizations such as the State-owned Assets Supervision and Administration Commission, which blurs the lines between civil and defense sectors.

Overall, China's domestic civilian economy and science and technology sectors have commensurately benefited its defense industry. A growing technology sector of concern is China's advancing aviation and aerospace industry, with increasing access to foreign technology from highly developed countries that transfer critical dual-use technologies to China. Examples of such critical technologies include: key hot section technologies, materials such as carbon fiber and radar-absorbent material, multi-axis machine tools, avionics, data fusion and integration technologies, and engine/flight controls. Although some of these advances benefit China's growing domestic civilian aviation industry, they have the potential to advance military aircraft and aerospace sectors as well.

## DEVELOPMENTS IN CHINA'S BILATERAL AND MULTILATERAL MILITARY ENGAGEMENTS

China's military engagement with other countries seeks to enhance China's presence and influence abroad by improving relationships with foreign militaries, bolstering China's international and regional image, and assuaging other countries' concerns about China's rise. PLA engagement activities assist its modernization through the acquisition of advanced weapon systems and technologies, increased operational experience throughout and beyond Asia, and access to foreign military practices, operational doctrine, and training methods.

In December 2014, the PLA Daily, the official newspaper of the military, published its top ten highlights of China's military diplomacy in 2014. This list focused on military exercises and overseas deployments that underscore China's growing global security role. Key highlights included: China's first participation in the U.S.-led RIM OF THE PACIFIC (RIMPAC) naval exercise; the JOINT MARITIME exercise with Russia; the PEACE MISSION joint exercise held by the Shanghai Cooperation Organization (member States include: China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan); the assignment of China's first battalion-level unit to a UN peacekeeping operation; the signing of Memoranda of Understanding with the United States on confidence building

measures in November; the PLA's contributions to Malaysia Airlines MH370 search operations; China's assistance in combating Ebola in West Africa; the goodwill voyage of a PLA Navy task force to Africa; the PLA's participation in the Russia-hosted AVIADARTS and TANK BIATHLON international competitions; and China's first time hosting the annual Western Pacific Naval Symposium. The PLA Daily also highlighted the November Xiangshan Forum's upgrade from an unofficial to a semi-official regional security exchange.

Although military relations between the United States and China continue to improve, there are still incidents that highlight the need for continued dialogue in order to reduce risk of miscalculation or misunderstanding. In August 2014, a PLA Navy fighter jet conducted an unsafe intercept of a U.S. Navy P-8 maritime patrol aircraft on a routine mission in international airspace over the South China Sea. The PLA Navy fighter came within 30 feet of the U.S. aircraft. The United States protested the dangerous intercept. There have been no similar intercepts reported since.

**Combined Exercises.** PLA participation in bilateral and multilateral exercises continues to increase in scope and complexity. In 2014, the PLA conducted at least fourteen bilateral and multilateral exercises with foreign militaries, highlighted by the PLA Navy's first participation in the U.S.-led RIMPAC exercise. The PLA also conducted bilateral exercises with Russia, Tanzania, Indonesia, Singapore, Malaysia, and India; hosted and led a multi-lateral counter-terrorism and security exercise with the Shanghai Cooperation Organization; and hosted a large multilateral maritime exercise, MARITIME COOPERATION-2014, with Pakistan, Brunei, India, Bangladesh, Singapore, Malaysia, and Indonesia. Many of these exercises focused on counterterrorism, border security, and disaster relief; however, some include conventional air, maritime, and ground warfare training as well.

The PLA Navy completed its first circumnavigation of the African continent during May-June 2014. During the circumnavigation the PLA Navy conducted bilateral training with Nigeria, Cameroon, and Namibia. Ships from the 17th escort formation in the Gulf of Aden also conducted a joint search and rescue drill with the Iranian Navy. The 17th escort formation stopped in Abu Dhabi and Karachi, where the PLA Navy conducted a naval exercise with the Pakistani Navy.

**Peacekeeping Operations.** China continues to participate in UN peacekeeping operations (PKOs), and maintains approximately 2,200 personnel in 9 operations, mostly in sub-Saharan Africa and the Middle East. This number increased from 1,800 in 2013, but China's overall level of support has been consistent since 2008 and is the highest among the permanent members of the UN

Security Council. China is the sixth largest financial contributor to the UN PKO budget — fourth among UN Security Council members — pledging 6.64 percent of the total $7.06 billion budget for the period July 2014-June 2015.

Participation in PKOs serves various objectives — including improving China's international image, obtaining operational experience for the PLA, providing opportunities to gather intelligence — and reflects the PLA's "New Historic Missions" of taking on roles and generating capabilities for operations far beyond China's borders. China provides civilian police, military observers, engineers, logistics support, and medical personnel to UN missions. China first deployed combat forces to a UN PKO mission in 2012 to provide security for PLA engineering and medical personnel.

In January of 2014, China deployed approximately 400 PLA personnel to Mali, including a guard unit as part of the Multidimensional Integrated Stabilization Mission in Mali (MINUSMA). Also in early 2014, the Chinese Ministry of Foreign Affairs and Ministry of National Defense sent PLA personnel to Cyprus to support the Organization for the Prohibition of Chemical Weapons (OPCW)-UN joint mission on Syrian Chemical Weapons (CW) removal, for which PLA Navy frigates escorted cargo ships carrying Syrian CW materials. As of November, 2014, China is scheduled to deploy its first infantry battalion of 700 personnel to the UN Mission in South Sudan (UNMISS) in early 2015 – a departure from its traditional focus on sending support elements. Although China's combat force commitments to UN PKOs are still limited, it appears likely that China will consider increasing its participation in future PKO deployments.

**Chinese Arms Sales.** From 2009 to 2013, outbound Chinese arms sales totaled approximately $14 billion. As of this report's publication, data for 2014 arms sales was not yet available. China primarily conducts arms sales in conjunction with economic aid and development assistance to support broader foreign policy goals such as securing access to natural resources and export markets, promoting its political influence among host-country elites, and building support in international forums. To a lesser extent, arms sales also reflect the profit-seeking activities of individual arms trading companies and efforts to offset defense-related research and development costs.

From the perspective of China's arms customers, most of whom are developing countries, Chinese arms are less expensive than those offered by the top international arms suppliers, although they are also generally of lower quality and reliability. Chinese arms also come with fewer political strings attached, which is attractive to those customers who may not have access to other

sources of arms for political or economic reasons.

**Counter-piracy Efforts.** China continues to support counter-piracy efforts in the Gulf of Aden (GOA), a commitment that began in December 2008.

In 2014, China deployed submarines to the Indian Ocean for the first time, ostensibly in support of its counter-piracy patrols. A SHANG-class nuclear-powered attack submarine (SSN) conducted a two-month deployment in the Indian Ocean between December 2013 and February 2014, and a SONG-class diesel-powered attack submarine (SS) patrolled in the Indian Ocean in September and October. The SONG also conducted the first foreign port call by a PLA Navy submarine with two stops in Colombo, Sri Lanka. The Chinese Ministry of National Defense assured regional nations that the submarines deployed to the Indian Ocean in support of China's counter-piracy patrols; however, the submarines were probably also conducting area familiarization, and demonstrating an emerging capability both to protect China's sea lines of communications and increase China's power projection into the Indian Ocean.

# 2

# UNDERSTANDING CHINA'S STRATEGY

## NATIONAL LEVEL PRIORITIES AND GOALS

Since 2002, China's leaders — including current President Xi Jinping — have characterized the initial two decades of the 21st century as a "period of strategic opportunity." They assess that during this time, international conditions will be conducive to domestic development and expanding China's "comprehensive national power," a term that encapsulates all elements of State power including economic capacity, military might, and diplomacy. China's leaders anticipate that a successful expansion of comprehensive national power will serve the Chinese Communist Party's overriding strategic objectives, which include:

- Perpetuating Chinese Communist Party (CCP) rule;
- Sustaining economic growth and development;
- Maintaining domestic political stability;
- Defending national sovereignty and territorial integrity; and
- Securing China's status as a great power and, ultimately, reacquiring regional preeminence.

Though there is debate in Chinese academic circles over whether China can sustain the period of strategic opportunity though this decade, China's leaders have continued to reiterate the importance of this "period" to achieving these key strategic objectives and are seeking to prolong it.

China's leaders routinely emphasize the goal of reaching critical economic and military benchmarks by 2020. These benchmarks include successfully restructuring the economy to maintain growth and increase the quality of life of China's citizens to promote stability; making major progress in military modernization; and attaining the capability to fight and win potential regional conflicts, including those related to Taiwan, protection of sea lines of communication (SLOCs), defense of territorial claims in the South China Sea and East China Sea, and the defense of western borders. Statements by Chinese leaders indicate that, in their view, the development of a modern military is necessary for China to achieve great power status. These statements also indicate that China's leadership views a modern military as a critical deterrent to prevent actions by outside powers that could damage China's interests, or allow China to defend itself against such actions, should deterrence fail.

China's approach to international relations seeks to strengthen its economy, modernize the military, and solidify the CPC's hold on power. These national aspirations are reiterated in Xi Jinping's "China Dream" slogan, first propagated when Xi took the helm as Chinese Communist Party General Secretary in 2012. In a speech to the Politburo

Standing Committee, Xi underscored China's goals of establishing a prosperous and powerful nation, thereby achieving a "great revival of the Chinese people."

China continues to regard stable relations with the United States and China's neighbors as key to its development. China sees the U.S. as the dominant regional and global actor with the greatest potential to both support and, potentially, disrupt China's rise. Top Chinese leaders, including President Xi Jinping, continued to advocate for a "new type of major power relations" with the United States throughout 2014. China's "new type" of relations concept urges a cooperative U.S.-China partnership based on equality, mutual respect, and mutual benefit. The framework also reflects China's aspirations to be regarded as a great power, emphasizing conflict avoidance to sustain its "peaceful rise." As a subset of the broader relationship, the PLA in 2014 also promoted a "new type" of bilateral military relations.

China remains concerned that if regional States come to view China primarily as a threat, they may act to balance against China, potentially with the United States. China balances the imperative to persuade countries that its rise is peaceful with the imperative to strengthen its control over existing sovereignty and territorial claims. Despite its desire to project the image of a developing country engaged in a peaceful development strategy, China's efforts to defend and advance its concept of national sovereignty and territorial integrity — underpinned by growing economic and military capabilities — have manifested in more forceful rhetoric and confrontational behavior. Prominent examples of this include China's attempts to block resupply missions to the Philippine outpost at Second Thomas Shoal, its deployment of a deep water hydrocarbon rig to waters disputed with Vietnam, its use of punitive trade policies as instruments of coercion, and its actions to pressure Japan in the East China Sea. China's lack of transparency surrounding its growing military capabilities and strategic decision-making has also increased concerns in the region about China's intentions. Absent greater transparency, these concerns will likely intensify as the PLA modernization progresses.

## CHINA'S EVOLVING FOREIGN POLICY APPROACH

China's leadership continues to officially support former paramount leader Deng Xiaoping's dictum from the early-1990s that China should "observe calmly; secure our position; cope with affairs calmly; hide our capabilities and bide our time; be good at maintaining a low profile; and never claim leadership." This guidance reflected Deng's belief that Chinese interests are best served by focusing on internal development and stability while steering clear of direct confrontation or antagonism with major powers.

However, Chinese behavior decreasingly reflects Deng's dictum in some key areas. For instance, China is seeking progressively more high-profile leadership roles in the region and globally, and is taking initiative to establish multilateral mechanisms such as the Asia Infrastructure Investment Bank (AIIB) and China's proposal for a "New Asian Security Concept". Some Chinese scholars question whether Deng's policy approach continues to be relevant as China's interests increase abroad and its power expands. In 2014, there appeared to be broad consensus among Chinese academics that China should gradually take on greater international responsibilities, but debate continues over the pace and scope of China's role within the context of China's overarching national interests. China's perceived security interests have changed considerably since the Deng era, including a heavy reliance on maritime commerce and China's improving naval capabilities enable roles and missions that would have been impossible for the PLA to pursue just a decade ago. Proponents of a more active Chinese role on the world stage have also suggested that China would be best served by a firm stance in the face of perceived U.S. or other regional pressure.

In late November 2014, Chinese President Xi Jinping delivered the keynote address at a Central Foreign Affairs Work Conference of the Chinese Communist Party that officially endorsed key trends in Chinese foreign policy. Xi's public speech did not directly reference Deng Xiaoping's famous dictum, but Xi's emphasis on regional and global leadership suggests that China's interpretation of the dictum is evolving. Xi underscored China's intentions to focus on its periphery, to use both soft and hard power to advance its foreign policy goals, and to take a larger role in shaping the international system. He stressed that China would be firm in defending its interests, especially its territorial sovereignty and maritime rights. He remarked on the "protracted nature of the struggle over the international order," and highlighted China's intention to play a larger role.

## China's Energy Strategy

China's engagement, investment, and foreign construction related to energy continue to grow. China has constructed or invested in energy projects in more than 50 countries.. This ambitious investment in energy assets is driven primarily by China's desire to ensure reliable energy sources for its fast-growing economy.

China hopes to diversify both producers and transport options. Although energy independence is no longer realistic for China, given population growth and increasing per capita energy consumption, China still seeks to maintain a supply chain that is less susceptible to external disruption.

In 2014, China imported approximately 60 percent of its oil supply; and this figure is projected to grow to 80 percent by 2035, according to U.S. Energy Information Administration data. China looks primarily to the Persian Gulf, Africa, and Russia/Central Asia to satisfy its growing demand, with imported oil accounting for approximately 11 percent of China's total energy consumption.

A second goal of China's foreign energy strategy is to alleviate China's heavy dependence on Sea Lines of Communication (SLOCs), particularly the South China Sea and Strait of Malacca. In 2014, approximately 85 percent of China's oil imports transited the South China Sea and Strait of Malacca. Separate crude oil pipelines from Russia and Kazakhstan to China illustrate efforts to increase overland supply. In 2014 work started on the Russia–China crude oil pipeline to double its capacity from 300,000 to 600,000 barrels per day (b/d) by 2016. In 2014, construction was finished on the 440,000-b/d Burma–China oil pipeline. This pipeline bypasses the Strait of Malacca by transporting crude oil from Kyuakpya, Burma to Kunming, China. However, it is not fully operational because the pipeline infrastructure in China is incomplete. The crude oil for this pipeline will be supplied by Saudi Arabia and other Middle Eastern and African countries.

Given China's growing energy demand, new pipelines will only slightly alleviate China's maritime dependency on either the Strait of Malacca or the Strait of Hormuz. Despite China's efforts, the sheer volume of oil and liquefied natural gas that is imported to China from the Middle East and Africa will make strategic SLOCs increasingly important to China.

In 2014, China imported 25.4 billion cubic meters (bcm) of natural gas, or 44 percent of all of its natural gas imports, from Turkmenistan to China by pipeline via Kazakhstan and Uzbekistan. This pipeline is designed to carry 40 bcm per year with plans to expand it to 60 bcm per year. Another natural gas pipeline designed to deliver 12 bcm per year of Burmese-produced gas commenced operations in September 2013 and shipped 3 bcm of gas in 2014. This pipeline parallels the crude oil pipeline across Burma. Also, China and Russia recently signed an agreement to construct a pipeline to deliver up to 38 billion cubic meters of gas by 2035; initial flows are to start by 2018. In 2014 China imported about 32 percent of its gas supply.

**China's Top Crude Suppliers 2014**

| Country | Volume (1,000 barrels/day) | Percentage of Imported Crude Oil |
|---|---|---|
| Saudi Arabia | 997 | 16 |
| Angola | 816 | 13 |
| Russia | 665 | 11 |
| Oman | 597 | 10 |
| Iraq | 573 | 9 |
| Iran | 551 | 9 |
| Venezuela | 277 | 4 |
| UAE | 234 | 4 |
| Kuwait | 213 | 3 |
| Colombia | 199 | 3 |
| Others | 1,069 | 17 |
| **Total** | **6,191** | **99** |

*Numbers may not equal 100 as figures have been rounded.*

## FACTORS SHAPING CHINA'S LEADERSHIP PERCEPTIONS

In the fall of 2014, China's leadership convened the Fourth Plenum of the Eighteenth Central Committee, marking two years since Xi Jinping was named General Secretary of the CPC. The agenda focused on implementation of reform — with a major focus on rule of law — and efforts to address corruption and bolster Party legitimacy. Despite holding a generally positive view of China's strategic environment, official documents indicate that China does see its security environment as becoming more "complex" and "complicated" as a result of several evolving factors:

**Economics.** Steady economic growth, low unemployment, and contained inflation remain the bedrock of social stability. China's leaders have been slowly scaling back Gross Domestic Product (GDP) growth targets in acknowledgement that China's longstanding growth strategy of relying on exports and investment is unsustainable. China faces a range of potential economic risks, including a slowdown in the property market sector, a sharp increase in credit, high off-balance sheet borrowing by local governments, domestic resource constraints, and rising wages.

**Nationalism.** CPC leaders and military officials continue to be affected by, and in some cases, exploit nationalism to bolster the legitimacy of the Party, deflect domestic criticism, and justify their own inflexibility in dialogues with foreign interlocutors. However, nationalist forces could ultimately influence the leadership's decision-making on key policy issues or attempt to pressure the CPC if these forces perceive Party leaders as insufficiently satisfying nationalist goals.

**Regional Challenges to China's Interests.** Ongoing tensions, with Japan in the East China Sea and with South China Sea claimants, challenge China's desire to maintain a stable periphery. Combined with greater U.S. presence in the region, these factors raise Chinese concerns that regional countries will strengthen their military capabilities or increase security cooperation with the United States to balance China.

**Environment.** China's economic development has come at a high environmental cost. China's leaders are increasingly concerned that environmental degradation could undermine regime legitimacy by threatening economic development, public health, social stability, and China's international image.

**Demographics.** China faces the dual threat of a rapidly aging population and a declining birth rate, one that now falls below replacement level. Longer life expectancies may force China to allocate more resources to social and health services, while the declining birth rate will continue to reduce China's supply of labor, a key driver of the country's three decades of economic growth. This dual phenomenon could lead to economic stagnation that could threaten CPC legitimacy.

## PLA MILITARY FOREIGN ENGAGEMENT AND DIPLOMACY

The extent of PLA engagement with foreign militaries seems to have leveled out in 2014. These engagements continue providing the military a platform to demonstrate its broadening capabilities as well as improving tactics, techniques and procedures. Bilateral and multilateral exercises, in addition to providing a political benefit, augment other PLA modernization efforts by providing opportunities to improve capabilities in areas such as counterterrorism, mobility operations, and logistics.

Senior-level visits and exchanges provide China with opportunities to increase military officers' international exposure, communicate China's positions to foreign audiences, better understand alternative world views, and advance foreign relations through interpersonal contacts and military assistance programs. Expanded PLA travel abroad enables China's military officers to observe and study foreign military command structures, unit formations, and operational training.

As China's regional and international interests grow more complex, the PLA's international engagement will expand, especially in the areas of peacekeeping operations, counter-piracy, HA/DR, counterterrorism, and joint exercises. For example, virtually every Latin American and Caribbean country that diplomatically recognizes China sends officers to the strategic-level Defense Studies Institute in China while some also send officers to the PLA Army and Navy command schools in Nanjing. In addition to furthering PLA modernization, the focus of these engagements will likely remain on building China's political ties, assuaging fears about China's rise, and building China's international influence, particularly in Asia and Latin America.

### China's Territorial Disputes in Context

China's use of force in territorial disputes has varied widely throughout history. Some disputes led to war, such as China's border conflicts with India in 1962 and Vietnam in 1979. A contested border with the former Soviet Union during the 1960s raised the possibility of nuclear war. In more recent cases, China has been willing to compromise with and even offer concessions to its neighbors. Since 1998, China has settled eleven land-based territorial disputes with six of its neighbors. Several disputes continue over exclusive economic zones (EEZ) and ownership of potentially rich, off-shore oil and gas deposits.

The ***East China Sea*** contains natural gas and oil, though hydrocarbon reserves there are difficult to estimate. China and Japan have overlapping claims to both the continental shelves and the EEZs extending from their respective mainlands. Japan maintains that an equidistant line from each country involved should separate the EEZs, while China claims an extended continental shelf beyond the equidistant line to the Okinawa Trench. In early 2009, Japan accused China of violating a June 2008 agreement an equidistant demarcation line from each country for resource development and an area to the north spanning the line for joint exploration of oil and natural gas fields, and claimed that China unilaterally drilled beneath the demarcation line, extracting reserves from the Japanese side. China continues to contest Japan's administration of the nearby Senkaku Islands.

The ***South China Sea*** plays an important role in Northeast and Southeast Asian security considerations. Northeast Asia relies heavily on the flow of oil and commerce through South China Sea shipping lanes, including more than 80 percent of the crude oil to Japan, South Korea, and Taiwan. China claims sovereignty over the Spratly and Paracel Island groups and other land areas within its "nine-dash line" claim—claims disputed in whole or part by Brunei, the Philippines, Malaysia, and Vietnam. Taiwan, which occupies the Itu Aba Island in the Spratly Islands, makes the same claims as the PRC. In 2009, China protested extended continental shelf submissions in the South China Sea made by Malaysia and Vietnam; in its protest to the UN Commission on the Limits of the Continental Shelf, China included its ambiguous "nine-dash line" map, while stating in a note verbale that it has "indisputable sovereignty over the islands in the South China Sea and the adjacent waters and enjoys sovereign rights and jurisdiction over the relevant waters as well as the seabed and subsoil thereof."

Despite increases in China-***India*** political and economic relations, tensions remain along their shared 4,057 km border, most notably over Arunachal Pradesh (which China asserts is part of Tibet and therefore of China), and over the Askai Chin region at the western end of the Tibetan Plateau. In October 2013, Chinese and Indian officials signed the Border Defense Cooperation Agreement, which supplements existing procedures managing the interaction of forces along the Line of Actual Control. China and India continue to accuse each other of frequent incursions and military build-ups along the disputed territories, with the most recent incident occurring in September 2014 along the Line of Actual Control in Eastern Ladakh. The military stand-off lasted twelve days and coincided with President Xi Jinping's visit to India, the first of a Chinese President in nearly a decade, casting a shadow over the visit.

## China's Military Leadership

The PLA is the armed instrument of the CPC and organizationally, is part of the Party apparatus. Career military officers are CPC members, and units at the company level and above have political officers responsible for personnel decisions, propaganda, and counterintelligence. Major decisions at all levels are made by CPC committees, also led by the political officers and commanders.

The military's highest decision-making body, the CMC, is technically a department of the CPC Central Committee, but is staffed almost exclusively by military officers. The CMC Chairman is a civilian, usually serving concurrently as the General Secretary of the CPC and President. Other members include several vice chairmen, the commanders of the services, and the directors of the four general headquarters departments. China's Ministry of National Defense (MND) is not equivalent to the "defense ministry" in most other nations, but rather is a small office coordinating military-related tasks where responsibility overlaps between the civilian government and the armed forces, including foreign military relations, mobilization, recruitment, "national defense education," and civil support to military operations. The Minister of Defense is a uniformed military officer, a member of the State Council (the country's chief administrative authority), and also a CMC member.

The PLA is an influential player in China's defense and foreign policy due to the CMC's special bureaucratic status and the PLA's near monopoly on military expertise. Even as the PLA remains subordinate to top Party leadership, longstanding bureaucratic dysfunction and China's increasingly active media have sometimes led to PLA-associated actions or statements that appear to diverge from the positions of China's other key bureaucratic actors, especially on national sovereignty or territorial issues.

## Members of the Communist Party of China's Central Military Commission

**Chairman Xi Jinping's** appointment as Party General Secretary and CMC Chairman in 2012, and his selection as State President in the spring of 2013, represent the first coincident transfer of all three of China's top power positions to an incoming leader in recent decades. Prior to becoming CMC Chairman, Xi served as the CMC's only civilian Vice Chairman. Xi's father was an important military figure during the Chinese communist revolution and a Politburo member in the 1980s. The younger Xi served as secretary to a defense minister early in his career and would have had ample opportunities to interact with the PLA as a provincial Party official. In meetings with U.S. officials, Xi has emphasized improving military-to-military relations between China and the United States.

**Vice Chairman Fan Changlong** is China's top uniformed officer. He formerly commanded the Jinan Military Region (MR), a test bed for new operational concepts and technology that has been at the forefront of the PLA's joint training efforts in recent years. Fan was the longest serving of China's seven MR commanders at the time of his promotion to the CMC. He also spent 35 years in the Shenyang MR, adjacent to North Korea and Russia.

**Vice Chairman Xu Qiliang**—the first career air force officer promoted to CMC Vice Chairman—previously served on the CMC as PLAAF commander where he oversaw rapid force modernization and expanded the air force's foreign engagement. He vocally advocated for increasing the PLA Air Force's role within the larger PLA, including arguing in 2009 that the PLA Air Force should lead the development of offensive space capabilities. Xu may have crossed paths with Xi Jinping earlier in their careers when both men served in Fujian Province. Xu was the first PLA Air Force officer to serve as deputy chief of the General Staff Department (GSD) since the Cultural Revolution period, and —at 54 years of age— the youngest in PLA history.

**Chang Wanquan** was appointed Minister of National Defense at the National People's Congress in March 2013. The Minister of National Defense is the PLA's third most senior officer and manages its relationship with State bureaucracies and foreign militaries. Chang previously oversaw the PLA's weapons development and space portfolio as head of the General Armament Department. He is a veteran of China's border skirmishes with Vietnam and held top posts across military regions.

**Chief of the General Staff Department Fang Fenghui** oversees PLA operations, training, and intelligence. He served as "commander-in-chief" of China's 60th anniversary military parade in 2009 and oversaw security for the 2008 Beijing Olympic Games. Fang is the first Beijing MR commander to move directly to Chief of the GSD. He was the youngest military region commander when he was promoted to lead the Beijing MR in 2007.

**General Political Department Director Zhang Yang** oversees the PLA's political work including propaganda, discipline, and education. He previously served as Political Commissar of the Guangzhou MR, which borders Vietnam and the South China Sea. Zhang assumed that position at a relatively young age and is unusual among the other newly appointed CMC members for spending his entire career in one military region. Zhang also participated in China's border conflict with Vietnam and supported disaster relief efforts following a January 2008 snowstorm in southern China.

**General Logistics Department Director Zhao Keshi** is responsible for overseeing PLA support functions including finances, land, mining, and construction. Zhao spent his entire career in the Nanjing MR responsible for a Taiwan contingency and most recently served as its Commander. He was also reportedly an exercise commander in the large military drills that induced the 1996 Taiwan Strait Crisis. Zhao has written on defense mobilization and reserve construction.

**General Armament Department Director Zhang Youxia** is responsible for overseeing the military's weapons development and space program. He has rare experience as a combat commander during China's brief conflict with Vietnam in 1979. Zhang formerly commanded the Shenyang MR, which shares a border with North Korea and Russia. Zhang is one of China's military "princelings." His father, a well-known military figure in China, served with Xi Jinping's father in the 1940s.

**PLA Navy Commander Wu Shengli** has served as head of the Navy since 2006 and on the CMC since 2007 — only the second PLA Navy Commander to do so in recent decades. Under Wu, the Navy has increased its out-of-area exercises, multinational patrols, and foreign naval exchanges, and initiated its first deployment to the Gulf of Aden. The first career Navy officer to serve as a Deputy Chief of the General Staff, Wu held leadership positions in two of the PLA Navy 's three fleets, spending most of his career in the East Sea Fleet.

**PLA Air Force Commander Ma Xiaotian** previously oversaw the PLA's military engagement activities as a Deputy Chief of the General Staff. Ma led the PLA side in key military-to-military exchanges with the U.S., including the Defense Consultative Talks and the Strategic Security Dialogue component of the United States-China Strategic and Economic Dialogue. Ma has significant operational experience both as a pilot and staff officer in multiple military regions.

**Second Artillery Force Commander Wei Fenghe** oversees China's strategic missile forces and bases. Wei served in multiple missile bases across different military regions and held top posts in the Second Artillery Force headquarters before being promoted in late 2010 to Deputy Chief of the General Staff - the first officer from the Second Artillery Force to do so. In that role, Wei met frequently with foreign delegations, including senior U.S. officials, affording him greater international exposure than previous Second Artillery Force commanders.

# 3

# FORCE MODERNIZATION GOALS AND TRENDS

China is investing in military programs and weapons designed to improve extended-range power projection, anti-access and area denial (A2/AD), and operations in emerging domains such as cyberspace, space, and the electro-magnetic spectrum. Current trends in China's weapons production will enable the PLA to conduct a range of military operations in Asia far from China's traditional territorial claims. Key systems that either have been deployed or are in development include ballistic missiles (including anti-ship variants), anti-ship and land-attack cruise missiles, nuclear submarines, modern surface ships, and an aircraft carrier. The need to secure trade routes, particularly oil supplies from the Middle East, has prompted China's Navy to conduct counter-piracy operations in the Gulf of Aden (GOA). Disputes with Japan over maritime claims in the East China Sea and with several Southeast Asian claimants to all or parts of the Spratly and Paracel Islands in the South China Sea have led to renewed tensions in these areas. Instability on the Korean Peninsula could also produce a regional crisis involving the PLA. The desire to protect energy investments in Central Asia, along with potential security implications from cross-border support to ethnic separatists, could also provide an incentive for military investment or intervention in this region if instability surfaces.

China's political leaders have also charged the PLA with developing capabilities for missions such as peacekeeping (PKO), HA/DR, and counter-terrorism operations. These capabilities will increase China's options for military influence to press its diplomatic agenda, advance regional and international interests, and resolve disputes in its favor. China has become more involved in HA/DR operations in response to the "New Historic Missions."

For example, China's ANWEI-class military hospital ship, the PEACE ARK, has deployed throughout East Asia and to the Caribbean. China has conducted four joint military exercises with the SCO members, the most prominent being the PEACE MISSION series, with China and Russia as the main participants. China also continues its GOA counter-piracy deployment that began in December 2008.

## PLA CAPABILITIES IN DEVELOPMENT

**Nuclear Weapons.** China's nuclear weapons policy prioritizes maintaining a nuclear force able to survive an attack and respond with sufficient strength to inflict unacceptable damage on an enemy. A new generation of mobile missiles, with warheads consisting of MIRVs and penetration aids, are intended to ensure the viability of China's strategic deterrent in the face of continued advances in U.S. and, to a lesser extent, Russian strategic ISR, precision strike, and missile defense capabilities. Similarly, India's nuclear force is an additional driver behind China's nuclear force modernization. The PLA has deployed new command, control, and communications capabilities to its nuclear

forces. These capabilities improve the Second Artillery Force's ability to command and control multiple units in the field. Through the use of improved communications links, the ICBM units now have better access to battlefield information, uninterrupted communications connecting all command echelons, and unit commanders are able to issue orders to multiple subordinates at once, instead of serially, via voice commands.

China has consistently asserted that it adheres to a "no first use" (NFU) policy, stating it would use nuclear forces only in response to a nuclear strike against China. China's NFU pledge consists of two stated commitments: China will never use nuclear weapons first against any nuclear-weapon State, and China will never use or threaten to use nuclear weapons against any non-nuclear-weapon State or nuclear-weapon-free zone. However, there is some ambiguity over the conditions under which China's NFU policy would apply. Some PLA officers have written publicly of the need to spell out conditions under which China might need to use nuclear weapons first; for example, if an enemy's conventional attack threatened the survival of China's nuclear force or of the regime itself. However, there has been no indication that national leaders are willing to attach such nuances and caveats to China's NFU doctrine.

China will likely continue to invest considerable resources to maintain a limited, but survivable, nuclear force to ensure the PLA can deliver a damaging responsive nuclear strike.

*Land-Based Platforms*: China's nuclear arsenal currently consists of 50-60 ICBMs, including the silo-based CSS-4 Mod 2 and Mod 3(DF-5); the solid-fueled, road-mobile CSS-10 Mod 1 and Mod 2 (DF-31 and DF-31A); and the more limited range CSS-3 (DF-4). This force is complemented by liquid-fueled CSS-2 intermediate-range ballistic missiles (IRBM) and road-mobile, solid-fueled CSS-5 (DF-21) MRBM for regional deterrence missions.

*Sea-based Platforms*: China continues to produce the JIN-class SSBN, with four commissioned and another under construction. The JIN will eventually carry the CSS-NX-14 (JL-2) SLBM with an estimated range of 7,400 km. Together these will give the PLA Navy its first credible long-range sea-based nuclear capability. JIN SSBNs based at Hainan Island in the South China Sea would then be able to conduct nuclear deterrence patrols – China will probably send out the first in 2015.

*Future Efforts*: China is working on a range of technologies to attempt to counter U.S. and other countries' ballistic missile defense systems, including maneuverable reentry vehicles (MaRV), MIRVs, decoys, chaff, jamming, and thermal shielding. The United States and China acknowledge that the Chinese tested a hypersonic glide vehicle in 2014. China's official media also cites numerous Second Artillery Force training exercises featuring maneuver, camouflage, and launch operations under simulated combat conditions, which are intended to increase survivability. Together with the increased mobility and survivability of the new

generation of missiles, these technologies and training enhancements strengthen China's nuclear force and bolster its strategic strike capabilities. Further increases in the number of mobile ICBMs and the beginning of SSBN deterrence patrols will force the PLA to implement more sophisticated command and control systems and processes that safeguard the integrity of nuclear release authority for a larger, more dispersed force.

**Anti-Access/Area Denial (A2/AD).** As China modernizes its military and prepares for various contingencies, it continues to develop capabilities that serve to specifically dissuade, deter, or if ordered, defeat possible third-party intervention during a large-scale, theater campaign such as a Taiwan contingency. U.S. defense planners often refer to these collective Chinese capabilities as anti-access/area-denial (A2/AD), though China does not specifically refer to them using this term. China's military modernization plan includes the development of capabilities to attack, at very long ranges, adversary forces that might deploy or operate within the western Pacific in the air, maritime, space, electromagnetic, and information domains. As the PLA Academy of Military Science 2013 Science of Strategy states, "we cannot count on luck and must keep a foothold at the foundation of having ample war preparations and powerful military capabilities of our own, rather than hold the assessment that the enemy will not come, intervene, or strike."

*Information Operations:* PLA authors often cite the need in modern warfare to control information, sometimes termed "information blockade" or "information dominance," and the need to seize the initiative early in a campaign in order to set the conditions to achieve air and sea superiority subsequently. China is improving information and operational security to protect its own information infrastructure, and is also developing Electronic Warfare (EW) and other information warfare (IW) capabilities, including denial and deception. China's "information blockade" likely envisions employment of military and non-military instruments of state power across the battlespace, including in cyberspace and space. China's investments in advanced EW systems, counterspace weapons, and cyberspace operations — combined with more traditional forms of control historically associated with the PLA and CPC systems, such as propaganda and denial through opacity — reflect the emphasis and priority China's leaders place on building capability for information advantage.

*Cyber Operations:* Chinese offensive cyberspace operations could support A2/AD by targeting critical nodes to disrupt adversary networks throughout the region. PLA researchers advocate the key to seizing "cyberspace superiority" is to deter or stop an adversary by developing and employing offensive cyberspace capabilities.

*Long-Range Precision Strike:* The development of China's conventionally armed missile capability has been extraordinarily rapid. As recently as ten years ago, several hundred

short range ballistic missiles could range targets in Taiwan, but China had only a rudimentary capability to strike many other locations within or beyond the first island chain, such as U.S. bases in Okinawa or Guam. Today, however, China is fielding an array of conventionally armed ballistic missiles (China currently has at least 1,200), as well as ground- and air-launched LACMs, SOF, and cyber warfare capabilities to hold targets at risk throughout the region. U.S. bases in Japan are in range of a growing number of Chinese MRBMs as well as a variety of LACMs. Guam could also possibly be targeted by air-launched LACMs. Foreign press and Chinese military bloggers indicate that China is also developing a new advanced IRBM with the capability to strike targets at ranges up to 4,000 km from the Chinese coast, which would include U.S. bases on Guam.

Chinese LACM and ballistic missiles have also become far more accurate and are now more capable against adversary air bases, logistic facilities, communications, and other ground-based infrastructure. Chinese military analysts have concluded that logistics and power projection are potential vulnerabilities in modern warfare, given the requirements for precision in coordinating transportation, communications, and logistics networks.

*Ballistic Missile Defense (BMD):* China has made efforts to go beyond defense from aircraft and cruise missiles to gain a BMD capability in order to provide further protection of China's mainland and strategic assets. China's existing long-range SAM inventory offers limited capability against ballistic missiles. New indigenous radars, the JL-1A and JY-27A, are designed to address the ballistic missile threat, with the JL-1A advertised as capable of precision tracking of multiple ballistic missiles. China's SA-20 PMU2 SAMs, one of the most advanced SAM Russia offers for export, has the advertised capability to engage ballistic missiles with ranges of 1,000 km and speeds of 2,800 meters per second (m/s). China's domestic CSA-9 long-range SAM system is expected to have a limited capability to provide point defense against tactical ballistic missiles with ranges up to 500 km. China is proceeding with the research and development of a missile defense umbrella consisting of kinetic energy intercept at exo-atmospheric altitudes (greater than 80 km), as well as intercepts of ballistic missiles and other aerospace vehicles within the upper atmosphere. In January 2010 and again in January 2013, China successfully intercepted a ballistic missile at mid-course, using a ground-based missile.

*Surface and Undersea Operations:* China continues to build a variety of offensive and defensive capabilities that could permit the PLA to achieve sea control within what the PLA Navy calls the "near seas," as well as project limited combat power into the "far seas." Of these, China's coastal defense cruise missiles (CDCMs), air/surface/sub-surface launched anti-ship cruise missiles (ASCMs), submarine-launched torpedoes, and naval mines provide the PLA Navy with an ability to counter an adversary fleet's intervention with multi-axis, high-intensity attacks that increase in lethality

as adversary naval combatants approach the Chinese coast. Additionally, China has fielded DF-21D (ASBMs) specifically designed to hold adversary aircraft carriers at risk once they approach within 900 nm of the Chinese coastline. China is making gradual progress in the undersea domain as well, but continues to lack either a robust coastal or deep water anti-submarine warfare capability. It is also unclear whether China has the capability to collect accurate targeting information and pass it to launch platforms in time for successful strikes in sea areas beyond the first island chain.

*Space and Counterspace:* The PLA continues to strengthen its military space capabilities, which includes advances with the Beidou navigation satellite system and space surveillance capabilities that can monitor objects across the globe and in space. China is seeking to utilize space systems to establish a real-time and accurate surveillance, reconnaissance, and warning system, and to enhance command and control in joint operations.

PLA strategists regard the ability to use space-based systems and deny adversaries access to the same as central to enabling modern, "informationized" warfare. Although PLA doctrine does not appear to address space operations as a unique operational "campaign," space operations form an integral component of other PLA campaigns and would serve a key role in enabling actions that counter third-party intervention. Publicly, China attempts to dispel any skepticism over its military intentions for space. In 2009, PLA Air Force Commander General Xu Qiliang publicly retracted his earlier assertion that the militarization of space was a "historic inevitability" after former President Hu Jintao swiftly contradicted him.

On July 23, 2014, China conducted a non-destructive test of a missile designed to destroy satellites in low Earth orbit. China claimed this test was for a missile defense system. A previous destructive test of this system in 2007 created substantial space debris that continues to present a danger to the space systems of all nations, including China. In 2013, China also launched an object into space on a ballistic trajectory that took it near geosynchronous orbit, but the launch profile was not consistent with traditional space launch vehicles, ballistic missiles or sounding rocket launches used for scientific research. It could, however, have been a test of technologies with a counterspace mission in geosynchronous orbit. The United States and several public organizations expressed concern to Chinese representatives and asked for more information about the purpose and nature of the launch. China has thus far refrained from providing additional information.

*Integrated Air and Missile Defense:* Within 300nm of China's coast, China has credible Integrated Air and Missile Defense (IADS) that relies on robust early warning, fighter aircraft, and a variety of SAM systems as well as point defense primarily designed to counter adversary long-range airborne strike platforms. Open source reports, including readouts from

Air Show China 2014, reveal that China continues to develop and market a wide array of IADS systems designed to counter U.S. technology, tailoring the threats to attempts to deny "high-tech" operations across a wide range of capabilities. In addition to improving China's ability to counter traditional IADS targets such as fixed-wing aircraft, unmanned aerial vehicles (UAVs), helicopters, and cruise missiles, Chinese airshow displays claim that new Chinese radar developments claim to detect stealth aircraft. Chinese trade materials also emphasize the systems' ability to counter long-range targets, such as long-range airborne strike and combat support aircraft. Long-range air surveillance radars and airborne early warning aircraft, such as China's indigenous KJ-2000 and KJ-500, are said to extend China's detection range well beyond its borders.

China has increasing numbers of advanced long-range SAMs, including its indigenous CSA-9 (HQ-9), Russian SA-10 (S-300PMU), and SA-20 (S-300PMU1/PMU2), all of which have the advertised capability to protect against both aircraft and low-flying cruise missiles. In fall 2014, China signed a contract for delivery of Russia's extremely long-range SA-X-21b (S-400) SAM system (400 km), and is also expected to continue research and development to extend the range of the domestic CSA-9 SAM to beyond 200 km.

The planned development of China's fifth-generation fighter force that includes high-maneuverability, low observability, and an internal weapons bay based on the J-20 or J-31 prototypes, will bolster China's air-to-air capability. Other key features of these aircraft are modern avionics and sensors that offer more timely situational awareness for operations in network-centric combat environments, radars with advanced tracking and targeting capabilities, protection against enemy electronic countermeasures, and integrated EW systems. These next-generation aircraft, which could enter service as early as 2018, will improve China's existing fleet of fourth-generation aircraft (Russian-built Su-27/Su-30 and J-11A, and indigenous J-10 and J-11B fighters) to support regional air superiority and strike operations. China's continuing upgrades to its bomber fleet will give them the capability to carry new, longer-range cruise missiles. In conjunction with procuring more capable military equipment, China is increasing the complexity and realism of air and air defense training.

Similarly, the acquisition and development of longer-range UAVs will increase China's ability to conduct long-range reconnaissance and strike operations. China is advancing its development and employment of UAVs. Some estimates indicate China plans to produce upwards of 41,800 land- and sea-based unmanned systems, worth about $10.5 billion, between 2014 and 2023. During 2013, China began incorporating its UAVs into military exercises and conducted ISR over the East China Sea with the BZK-005 UAV. In 2013, China unveiled details of four UAVs under development—the Xianglong, Yilong, Sky Saber, and Lijian—the last three of which are designed to carry precision-strike capable

weapons. The Lijian, which first flew on November 21, 2013, is China's first stealthy flying wing UAV.

**Building an Informationized Military.** Chinese military writings describe informationized warfare as an asymmetric way to weaken an adversary's ability to acquire, transmit, process, and use information during war, and discuss its use as a way to force an adversary to capitulate before the onset of conflict. The PLA conducts military exercises simulating operations in complex electromagnetic environments, and likely views conventional and cyber operations as a means of achieving information dominance. The GSD Fourth Department (Electronic Countermeasures and Radar) would likely use EW, cyberspace operations, and deception to augment counterspace and other kinetic operations during a wartime scenario to deny an adversary's attainment and use of information. "Simultaneous and parallel" operations would involve strikes against U.S. warships, aircraft, and associated supply craft and the use of information attacks to impact tactical and operational communications and computer networks. These operations could have a significant impact upon an adversary's navigational and targeting radars.

Cyber operations are a key component of informationization and could serve Chinese military operations in three key areas. First, they allow data collection for intelligence and potential offensive cyber operation purposes. Second, they can be employed to constrain an adversary's actions or slow response time by targeting network-based logistics, communications, and commercial activities. Third, they can serve as a force multiplier when coupled with kinetic attacks during times of crisis or conflict.

Developing cyber capabilities for warfare is consistent with authoritative PLA military writings, which identify information warfare as integral to achieving information superiority and an effective means for countering a stronger foe. These writings detail the effectiveness of information warfare and offensive cyber operations in conflicts and advocate targeting adversary C2 and logistics networks to affect their ability to operate during the early stages of conflict. They portray the enemy's C2 system as "the heart of information collection, control, and application on the battlefield. It is also the nerve center of the entire battlefield."

**Command, Control, Communications, Computers, and Intelligence (C4I) Modernization.** China continues to prioritize C4I modernization as a response to trends in modern warfare that emphasize the importance of rapid information sharing, processing, and decision-making. The PLA seeks to modernize itself both technologically and organizationally to command complex, joint operations in near and distant battlefields with increasingly sophisticated weapons.

The PLA views technological improvements to C4I systems as essential to its broader goals of informationization, which seeks to improve the speed and effectiveness of decision-

making while providing secure and reliable communications to fixed and mobile command posts. The PLA is fielding advanced automated command systems like the Integrated Command Platform (ICP) to units at lower echelons in each of its military services and military regions. The adoption of the ICP enables multi-service communications necessary for joint operations. Moreover, the new C4I technologies enable instantaneous information-sharing, and robust and redundant communications networks — intelligence, battlefield information, logistical information, and weather reports, which give commanders improved situational awareness. In particular, the transmission of ISR data in near-real-time to commanders in the field can facilitate the commander's decision-making process, shortening command timelines, and making operations more efficient.

The PLA also seeks to improve its C4I capabilities by reforming its joint command institutions at the national and regional levels. The 3rd Plenum of the Central Committee of the 18th CPC Congress explicitly called for "soundly setting up the joint operations command organ of the CMC and the theater joint operations command institutions." If adopted, these reforms would be the most significant changes to the PLA's command organization since 1949.

**Cyber Activities Directed Against the Department of Defense.** In 2014, numerous computer systems around the world, including those owned by the U.S. Government, continued to be targeted for

**Role of Electronic Warfare in a Future Conflict**

The PLA identifies electronic warfare (EW) as a way to reduce or eliminate U.S. technological advantages, and considers it an integral component of warfare. The PLA's EW doctrine emphasizes using electromagnetic spectrum weapons to suppress or deceive enemy electronic equipment. PLA EW strategy focuses on radio, radar, optical, infrared, and microwave frequencies, in addition to adversarial computer and information systems.

Chinese strategy stresses that EW is a vital fourth dimension to combat that can be key to determining the outcome of war, and should be considered equal to traditional ground, sea, and air forces. The PLA sees EW as an important force multiplier, and would likely employ it in support of all combat arms and services during a conflict.

PLA EW units have conducted jamming and anti-jamming operations, testing the military's understanding of EW weapons, equipment, and performance, which helped improve their confidence in conducting force-on-force, real-equipment confrontation operations in simulated EW environments. The advances in research and deployment of EW weapons are being tested in these exercises and have proven effective. These EW weapons include jamming equipment against multiple communication and radar systems and GPS satellite systems. EW systems are also being deployed with other sea and air-based platforms intended for both offensive and defensive operations.

intrusions, some of which can be attributed directly to the Chinese Government and military. In a single year, actors associated with the Chinese Government successfully penetrated U.S. Transportation Command (USTRANSCOM) contractors about twenty times. These intrusions were focused on accessing networks and exfiltrating information. China is using its cyber-espionage capabilities to support intelligence collection against the U.S. diplomatic, economic, and defense industrial base sectors that support U.S. national defense programs. The information targeted could potentially be used to benefit China's defense industry, high-technology industries, policymaker interest in U.S. leadership thinking on key issues, and military planners building a picture of U.S. defense networks, logistics, and related military capabilities that could be exploited during a crisis. Although this alone is a serious concern, the accesses and skills required for these intrusions are similar to those necessary to conduct offensive cyber operations. China's 2013 Defense White Paper notes China's own concern over foreign cyberwarfare efforts and highlighted the importance of cybersecurity in China's national defense.

**Systems and Capabilities Enabling Power Projection.** China has prioritized land-based ballistic and cruise missile programs to extend its strike warfare capabilities further from its borders. It is developing and testing several new classes and variants of offensive missiles, forming additional missile units, upgrading older missile systems, and developing methods to counter ballistic missile defenses. The Second Artillery Force has deployed at least 1,200 SRBMs to locations across from Taiwan and is fielding cruise missiles, including the ground-launched CJ-10 LACM. China continues to field an ASBM based on a variant of the CSS-5 (DF-21) MRBM that it began deploying in 2010. This missile provides the PLA the capability to attack aircraft carriers in the western Pacific. The CSS-5 Mod 5 has a range exceeding 1,500 km and is armed with a maneuverable warhead. China also deploys the land-attack CSS-5 Mod 4, holding at risk targets on Okinawa and mainland Japan, and is reportedly developing an IRBM capable of holding U.S. forces on Guam at risk.

The PLA Navy continues to develop and deploy ship-, submarine-, and aircraft-deployed ASCMs, both Russian- and Chinese-built, to extend its strike range. Additionally, China may develop the capability to arm the new LUYANG III-Class DDG with LACMs, giving the PLA Navy its first land-attack capability. Furthermore, the 2014 deployment of the SONG- and SHANG-class submarines, equipped with ASCMs, supporting counter-piracy patrols underscore China's interest in protecting sea lines of communications beyond the South China Sea, and if deployments became regular occurrences, would support power projection into the Indian Ocean.

The PLAAF is continuing to improve its capability to conduct offensive and defensive off-shore operations such as strike, air and missile defense, strategic mobility, and early warning and reconnaissance missions. China continues its development of stealth aircraft technology. The PLAAF Force already employs the H-6K bomber with the capability to carry six LACMs, a platform that will give the PLA a stand-off offensive air capability with precision-guided munitions. The acquisition of three IL-78 MIDAS aerial refueling tankers will increase the PLAAF's ability to extend the range of fighter aircraft operating over the East China Sea and South China Sea. In an effort to address its strategic airlift deficiency, China is also testing a new heavy lift transport aircraft, identified as the Y-20. This aircraft began flight testing in January 2013. In addition to being China's first indigenous heavy lift jet transport, the Y-20 could also acquire additional missions such as an airborne warning and control system (AWACS) and as an aerial refueling tanker.

The PLA Navy Aviation and the PLAAF continue to make incremental improvements in their air power projection capabilities. In 2014, PLA Navy and PLAAF aircraft participated in a number of inter-service exercises and real-world operations that suggest that China is seeking to integrate future air operations. Integrating air power could allow China to enhance flexibility of strike and support aircraft in East China Sea, South China Sea, or Taiwan contingencies.

China's refurbishment of the ex-Russian KUZNETSOV-class aircraft carrier, christened LIAONING at its launching in 2012, has afforded the PLA Navy an opportunity to explore carrier operations that Chinese officials state will be applied to a future multi-carrier force. During 2014, China focused on integrating LIAONING with its J-15 aircraft. Although LIAONING is serving in what officials describe as an "experimental" capacity, they also indicate that China will build additional carriers possessing more capability than the ski-jump-configured LIAONING. Such carriers would be capable of improved endurance and of carrying and launching more varied types of aircraft, including electronic warfare, early warning, and anti-submarine, thus increasing the potential striking power of a PLA Navy "carrier battle group" in safeguarding China's interests in areas outside its immediate periphery. The carriers would most likely perform such missions as patrolling economically important sea lanes, and conducting naval diplomacy, regional deterrence, and HA/DR.

**Capabilities to Realize a "Blue Water" Navy.** The PLA Navy remains at the forefront of the military's efforts to extend its operational reach beyond East Asia and into what China calls the "far seas." Missions in these areas include protecting important sea lanes from terrorism, maritime piracy, and foreign interdiction; providing HA/DR; conducting naval diplomacy and regional deterrence; and training to prevent a third

party, such as the United States, from interfering with operations off China's coast in a Taiwan contingency or conflict in the East or South China Sea. The PLA Navy's ability to perform these missions is modest but growing as it gains more experience operating in distant waters and acquires larger and more advanced platforms. The PLA Navy's goal over the coming decades is to become a stronger regional force that is able to project power across the greater Asia-Pacific region for high-intensity operations over a period of several months. However, logistics and intelligence support remain key obstacles, particularly in the Indian Ocean.

In the last several years, the PLA Navy's "far seas" experience has been derived primarily from its ongoing counter-piracy mission in the GOA and long-distance task group deployments beyond the first island chain in the Western Pacific. China continues to sustain a three-ship presence in the GOA to protect Chinese merchant shipping from maritime piracy. This operation is China's first enduring naval operation beyond the Asia region.

In 2014, the PLA Navy conducted three "far seas" deployments including its first in the Indian Ocean. The PLA Navy's deployment in support of the MH370 search and participation in the removal of chemical weapons from Syria illustrate its operational flexibility, while its deployment to the RIMPAC exercise near Hawaii confirmed its increasing capability to operate in unfamiliar waters. Additionally, the PLA Navy conducted its first two submarine deployments to the Indian Ocean, demonstrating its increasing familiarity with operating in that region.

The PLA Navy's force structure continues to evolve, incorporating more platforms with the versatility for both offshore and long-distance operations. China is engaged in series production of the LUYANG II and LUYANG III-class DDGs, the JIANGKAI II-class Guided Missile Frigates (FFG), and the JIANGDAO class FFL. China may also begin construction of the much larger Type 055 CG as early as next year. China will probably build multiple aircraft carriers over the next 15 years. Limited logistical support remains a key obstacle preventing the PLA Navy from operating more extensively beyond East Asia, particularly in the Indian Ocean. China desires to expand its access to logistics in the Indian Ocean and will likely establish several access points in this area in the next 10 years. These arrangements likely will take the form of agreements for refueling, replenishment, crew rest, and low-level maintenance. The services provided likely will fall short of permitting the full spectrum of support from repair to re-armament.

**Military Operations Other Than War.** The PLA continues to emphasize Military Operations Other Than War (MOOTW) including emergency response, counter-terrorism, international rescue, HA/DR, peacekeeping, and various other security tasks. China's 2013 Defense White Paper supports the use of its military for these purposes as a

means of adapting to new changes of security threats and emphasizing the employment of armed forces in peacetime. These missions clearly support the "New Historic Missions" while giving the PLA opportunities to strengthen overseas and domestic operational and mobilization capabilities as well as enhance civil-military relations.

According to Chinese media, between 2008 and 2014, the PLA employed more than 2.4 million active-duty forces, roughly 7.82 million militia and reservists, and more than 6,700 aircraft sorties for MOOTW. During the Haiti earthquake crisis in 2010, China donated millions of dollars and provided a search-and-rescue team, medicine, medical staff, and equipment. HARMONIOUS MISSION 2013 conducted medical port calls in Brunei, Maldives, Pakistan, India, Bangladesh, Burma, Indonesia, and Cambodia. Also in 2013, China engaged in successful maritime security cooperation counter-piracy exercises in the GOA, comprised of PLA Navy combatants, as well as helicopters and a Special Forces element.

In November 2013, the PLA hosted a two-day domestic HA/DR tabletop exercise. China also deployed its hospital ship to the Philippines in November 2013 following Typhoon Haiyan. The PLA Navy's and the CCG's 2014 search and rescue efforts as part of the MH370 recovery are unprecedented. 2014 also marked the first year China participated in the RIMPAC exercise; during the exercise the PLA Navy's hospital ship conducted personnel exchanges, military medicine exchanges, medical evacuation and mass casualty training. Additionally, the PLA continues to support UN PKO and participate in military exercises as a member of the SCO. Increased emphasis of MOOTW provides the PLA experience with joint operations and various command and control scenarios. Depending on the nature of the operation, PLA resources for MOOTW can be under the control of local commanders or directed at the highest levels of civilian and military leadership, allowing the PLA to respond rapidly to unexpected events.

### PLA Power Projection Expanding Outward

The PLA's priority remains Taiwan but modernization and development trends over the last decade reflect an expansion in the PLA's capabilities to address regional and global security objectives. PLA ground, air, naval, and missile forces are increasingly able to project power to assert regional dominance during peacetime and contest U.S. military superiority during a regional conflict. The PLA's growing ability to project power also augments China's globally-oriented objectives to be viewed as a stakeholder in ensuring stability and a regional power.

The PLA will maintain a primary emphasis on developing capabilities for a potential Taiwan contingency but is steadily expanding the force's operational flexibility to be able to meet regionally and globally focused missions. The PLA's missile and air forces remain a critical component in extending China's defensive perimeter. This frees up and enables other military assets to focus on conducting offensive missions, such as blockades, sovereignty enforcement, and/or anti-access/area denial, farther from Chinese shores. China also is focused on enhancing the PLA's ISR capabilities, which will enable improved targeting and timely responses to perceived threats.

The expansion of naval operations beyond China's immediate region will facilitate non-war uses of military force and provide China with a diverse set of capabilities for striking targets across the Pacific and Indian Ocean regions. Former President Hu Jintao's New Historic Missions doctrine emphasizes additional naval operations in far seas, including: HA/DR, noncombatant evacuation operations (NEO), and counter-piracy escort operations, and provides the PLA Navy with critical operational experience. Improving "blue water" capabilities will extend China's maritime security buffer to better protect China's near and far seas interests.

China's modern naval platforms include advanced missile and technological capabilities that will strengthen the force's core warfighting competencies and enable credible combat operations beyond the reaches of land-based defenses. Moreover, China's current aircraft carrier and planned follow-on ships will extend air defense umbrellas beyond the range of coastal systems and help enable task group operations in "far seas." Sea-based land attack probably is an emerging requirement for the PLA Navy. Chinese military experts argue that in order to pursue a defensive strategy in far seas, the PLA Navy must improve its ability to control land from the sea through long-range land-attack cruise missile (LACM) development.

## China's Maritime Security Approach

China identifies sovereignty as a core interest and emphasizes a willingness to assert and defend its claims in the East China Sea and South China Sea. China prefers to use its government-controlled, civilian maritime law-enforcement agencies in these disputes, and uses the PLA Navy in an overwatch capacity in case of escalation. China has demonstrated this model at Scarborough Reef, Second Thomas Shoal, Senkaku Islands, and CNOOC-981's drilling operations south of the Paracel Islands. China, however, uses a whole-of-government approach and also applies pressure on rival claimants using economic and political levers. China almost certainly wants to assert its maritime dominance without triggering a regional backlash.

In 2013, China consolidated four of its maritime law enforcement agencies into the China Coast Guard (CCG). Operationally subordinate to the Ministry of Public Security, the CCG is responsible for a wide range of missions, including enforcing China's sovereignty claims, anti-smuggling, protecting fisheries resources, and general law enforcement. The CCG is increasing its total force level at a rapid pace, adding new, larger patrol ships and craft as well as helicopters and UAVs. The enlargement and modernization of China's CCG forces will improve China's ability to enforce its maritime claims.

In the next decade, a new force of civilian law enforcement ships will afford China the capability to patrol more robustly its claims in the East China Sea and the South China Sea. China is continuing with the second half of a modernization and construction program for the CCG. The first half of this program, from 2004-2008, resulted in the addition of almost 20 ocean-going patrol ships. The second half of this program, from 2011-2015, includes at least 30 new ships for the CCG. Several less capable patrol ships will be decommissioned during this period. In addition, the CCG will likely build more than 100 new patrol craft and smaller units, both to increase capability and to replace old units. Overall, The CCG's total force level is expected to increase by 25 percent. Some of these ships will have the capability to embark helicopters, a capability that only a few CCG ships currently have. The enlargement and modernization of China's CCG forces will improve China's ability to enforce its maritime and sovereignty claims.

### China's Internal Security Forces

China's internal security forces consist primarily of the People's Armed Police (PAP), the Ministry of Public Security (MPS), the Ministry of State Security (MSS) and the PLA.

The PAP is a paramilitary internal security and crisis response force whose primary mission is domestic security. As a component of China's armed forces, it falls under the dual authority of the CMC and the State Council. Although there are different types of PAP units, such as border security and firefighting, the most numerous are for internal security. PAP units are organized into "contingents" in each province, autonomous region, and centrally administered city. The PAP is also composed of "mobile divisions" that are deployable beyond their home province.

The MSS is the main civilian secret intelligence/counterintelligence service. The missions of the MSS are: to protect China's national security; secure political and social stability; implement the "National Security Law" and related laws and regulations; protect state secrets; counterintelligence; and investigate organizations or people inside China who personally carry out or direct, support, or aid other people in harming China's national security.

The MPS is the primary civilian police and internal security force. The key mission of the MPS is domestic law enforcement and the "maintenance of social security and order" with duties including anti-rioting and anti-terrorism. There are about 1.9 million MPS police officers spread throughout local public security bureaus across the country.

The PLA's principal focus is on the continued security of the CPC. As such, the PLA may be used for internal or external stability missions as needed. For example, the PLA may provide transportation, logistics, and intelligence as well as assist local public security forces with internal security roles, including protection of infrastructure and maintaining public order.

China's leaders perceive threats to the country's internal security stemming from protests regarding political, social, environmental and economic problems. China also still perceives a security challenge from external non-state actors, such as the East Turkestan Independence Movement (ETIM), which China views as connected to ethnic Uighur nationalists in the Xinjiang Autonomous region. China blames Uighur "separatists" for terrorist attacks in China, which have increased since early 2014, and has imposed strict security in Xinjiang to curb potential attacks.

In 2013, China activated security forces several times in response to the July 5th anniversary of the 2009 Uighur riots in Urumqi and also dispatched more than 1,000 paramilitary police to Xinjiang after riots resulted in the death of 21 people in April. In June 2013, at least 1,000 paramilitary police shut down large sections of Urumqi and conducted 24-hour patrols in military vehicles after clashes left 35 people dead. In 2014, China used its security forces to quell incidents ranging from protests over land rights and labor issues to ethnic tensions and corruption. Local police and PAP officers responded to hundreds of incidents through the year, including outbreaks of violence in Xinjiang, most prominently an apparent riot in Shache that left dozens dead in July and a reported terrorist bombing in Urumqi in May. PAP units, particularly the mobile divisions, also continued to receive extensive equipment upgrades. China has continued to deploy paramilitary police in 2014 to the Tibet Autonomous Region and Tibetan Autonomous Prefectures located in Sichuan and Qinghai provinces to control unrest over self-immolations of Tibetans protesting China's rule over Tibet.

## Precision Strike

**Short-Range Ballistic Missiles (Less than 1,000 km)**: The Second Artillery Force had more than 1,200 SRBMs at the end of 2014. The Second Artillery Force continues to field advanced variants with improved ranges and accuracy in addition to more sophisticated payloads, while gradually replacing earlier generations that do not possess true precision strike capability.

**Medium-Range Ballistic Missiles (1,000-3,000 km)**: The PLA is fielding conventional MRBMs to increase the range at which it can conduct precision strikes against land targets and naval ships operating far from China's shores out to the first island chain.

**Intermediate-Range Ballistic Missiles (3,000-5,500 km)**: The PLA is developing a conventional, road mobile IRBM, which increases its capability for near-precision strike out to the second island chain. The PLA Navy also is improving its over-the-horizon (OTH) targeting capability with sky wave and surface wave OTH radars, which can be used in conjunction with reconnaissance satellites to locate targets at great distances from China (thereby supporting long-range precision strikes, including employment of anti-ship ballistic missiles).

**Land-Attack Cruise Missiles**: The PLA continues to field air- and ground-launched land-attack cruise missiles (LACM) for stand-off, precision strikes. Air-launched cruise missiles include the YJ-63, KD-88, and the CJ-20 (air-launched version of the CJ-10 ground launched cruise missile that also remains fielded in the Second Artillery Force). China recently adapted the KD-88 LACM, with an advertised range of 100+ km, and may be testing a longer-range version. China also is developing the CM-802AKG LACM, an export system that can strike both land and ship targets from fighters or bombers.

**Ground Attack Munitions**: The PLAAF has a small number of tactical air-to-surface missiles (ASMs) as well as precision-guided munitions including all-weather, satellite-guided bombs, anti-radiation missiles and laser-guided bombs. China is developing smaller-sized ASMs such as the AR-1, HJ-10 anti-tank, Blue Arrow 7 laser-guided, and KD-2 missiles in conjunction with its increasing development of UAVs. Additionally, China is also adapting GPS-guided munitions such as the FT-5 and LS-6 that are similar to the U.S. Joint Direct Attack Munitions (JDAM) to UAVs.

**Anti-Ship Cruise Missiles**: The PLA Navy is deploying a wide range of advanced ASCMs. The most capable include the domestically produced ship-launched YJ-62 ASCM and the Russian SS-N-22/SUNBURN supersonic ASCM, which is fitted on China's SOVREMENNY-class DDGs acquired from Russia. China's submarine force is also increasing its ASCM capability, with the long-range YJ-18 ASCM replacing the older YJ-82 on the SONG, YUAN, and SHANG classes. The YJ-18 is similar to the Russian SS-N-27B/SIZZLER ASCM, which is capable of supersonic terminal sprint and is fielded on eight of China's twelve Russian-built KILO SS. In addition, PLA Navy Aviation employs the 200 km range YJ-83K ASCM on its JH-7 and H-6G aircraft. China has also developed the YJ-12 ASCM for the Navy. The new missile provides an increased threat to naval assets, due to its long-range and supersonic speeds. It is capable of being launched from H-6 bombers.

**Anti-Radiation Weapons**: China is starting to integrate an indigenous version of the Russian Kh-31P (AS-17), known as the YJ-91, into its fighter-bomber force. China may have developed an air-to-air version for use against airborne warning and control system (AWACS) and tanker aircraft. The PLA imported Israeli-made HARPY UAVs and Russian-made anti-radiation missiles during the 1990s.

**Artillery-Delivered High Precision Munitions**: The PLA is developing or deploying artillery systems with the range to strike targets within or even across the Taiwan Strait, including the PHL-03 300 mm multiple-rocket launcher (MRL) (greater than 100 km range) and the longer-range AR-3 dual-caliber MRL (out to 220 km range).

### PLA Underground Facilities

China maintains a technologically advanced underground facility (UGF) program protecting all aspects of its military forces, including command and control, logistics, and missile and naval forces. Given China's no first use (NFU) nuclear policy, China has assumed it might have to absorb an initial nuclear blow while ensuring leadership and strategic assets survive and can respond.

China determined it needed to update and expand its military UGF program in the mid- to late-1980s. This modernization effort took on a renewed urgency following China's observation of U.S. and coalition air operations during the 1991 Gulf War and their use in the 1999 NATO ALLIED FORCE. A new emphasis on "winning high tech battles" in the future precipitated research into advanced tunneling and construction methods. These military campaigns convinced China it needed to build more survivable, deeply buried facilities, resulting in the widespread UGF construction effort we have detected throughout China for the last decade.

Denial and Deception

In historical and contemporary PLA texts, Chinese military theorists routinely emphasize the importance of secrecy and deception for both the protection of personnel and infrastructure and the concealment of sensitive military activities. In 2012 and 2013, the Chinese press featured the PLA using a variety of denial and deception (D&D) methods, including camouflage, decoys, and satellite avoidance activities during training events to protect PRC forces from enemy surveillance and targeting. Key D&D principles identified in official PLA monographs include:

- Conforming to what the enemy expects and creating false images that correspond to the target's psychological tendencies and expectations;
- Detailed pre-planning, centralized control, and operational integration to ensure strategic coherence at the political, diplomatic, and economic levels;
- Extensive, current, and sophisticated understanding of enemy psychology, predisposition, capabilities (particularly C4ISR), intentions, and location; and
- Operational flexibility, rapid response, and the ability and willingness to employ new D&D techniques and devices.

Contemporary PLA writings also indicate the Chinese view D&D as a critical enabler of psychological shock and force multiplication effects during a surprise attack, allowing the PLA to offset the advantages of a technologically superior enemy and to reinforce its military superiority against weaker opponents.

# 4

# RESOURCES FOR FORCE MODERNIZATION

## OVERVIEW

China has the fiscal strength and political will to support continued defense spending increases, which will support PLA modernization toward a more professional force. The PLA continues to decrease its reliance on foreign weapon acquisitions as China's defense-industrial and research bases mature. However, the PLA still looks to foreign assistance to fill some critical near-term capability gaps. China continues to leverage foreign investments, commercial joint ventures, academic exchanges, the experience of repatriated Chinese students and researchers, and State-sponsored industrial and technical espionage to increase the level of technologies and expertise available to support military research, development, and acquisition. China's long-term goal is to create a wholly indigenous defense industrial sector, augmented by a strong commercial sector, to meet the needs of PLA modernization and to compete as a top-tier supplier in the global arms market. China draws from diverse sources to support PLA modernization, including: domestic defense investments, indigenous defense industrial development, a growing research and development/science and technology base, dual-use technologies, and foreign technology acquisition.

## MILITARY EXPENDITURES TRENDS

On March 5, 2014, China announced a 9.3 percent inflation-adjusted increase in its annual military budget to $136 billion, continuing more than two decades of sustained annual defense spending increases. Analysis of data from 2005 through 2014 indicates China's officially-disclosed military budget grew at an average of 9.5 percent per year in inflation-adjusted terms over the period. China has the fiscal strength and political will to support defense spending growth at comparable levels for the foreseeable future.

**Estimating China's Actual Military Expenditures.** Using 2014 prices and exchange rates, the DoD estimates that China's total military-related spending for 2014 exceeds $165 billion U.S. dollars (USD). However, it is difficult to estimate actual PLA military expenses due to China's poor accounting transparency and incomplete transition from a command economy. China's published military budget omits several major categories of expenditure, such as procurement of foreign weapons and equipment, and research and development.

| 2014 Defense Budget Comparison (Adjusted for Inflation) | |
|---|---|
| | *Billion (USD)* |
| China (Official Budget) | $136.3 |
| Russia (National Defense Budget) | $76.3 |
| Japan | $47.6 |
| India | $38.2 |
| Republic of Korea | $33.4 |
| Taiwan | $10.3 |

*Comparison of China's official defense budget with those of other regional powers*

## DEVELOPMENTS AND TRENDS IN CHINA'S DEFENSE INDUSTRY

**Defense Sector Reform.** China's defense industry has undergone a dramatic transformation since the late-1990s, and its companies and research institutes continue to re-organize in an effort to improve weapon system research, development and production capabilities. China also continues to improve business practices, streamline bureaucracy, shorten developmental timelines, incorporate modern manufacturing processes, and improve quality control.

China is also emphasizing integration of defense and civilian sectors to leverage output from China's expanding science and technology base. Select defense firms operate research institutes with academic departments, some of which are capable of granting advanced degrees. These institutes serve to focus scientific research on cutting-edge military technologies and to groom the next generation of scientists and engineers who will support defense research, development, and production. These institutes also provide an access point to international resources and scientific research networks. Chinese practitioners and students at these defense institutes regularly attend conferences, present research findings, and publish scholarly articles.

The China Academy of Sciences (CAS) also plays a key role in facilitating research that supports advancements in military modernization. The CAS Institute of Mechanics is one example, with a focus on scientific innovation and high-tech integration in aerospace technology, environmental engineering, and energy resources. Specific areas of emphasis include nano-scale and micro-scale mechanics, high-temperature gas and supersonic flight technologies, and advanced manufacturing. In May 2012, the Institute announced successful acceptance testing of its new super-large JF12 hypersonic wind tunnel, reportedly the largest in the world, capable of replicating flying conditions

at mach 5 to 9. This project was one of eight detailed in China's National Mid- and Long-Term Scientific and Technological Development Outline PLA Navy (2006-2020). This facility and others like it sponsored by CAS support research and development efforts in China's civilian and military aerospace sector.

## MILITARY EQUIPMENT MODERNIZATION TRENDS

China's defense industry resource and investment prioritization and allocation favor missile and space systems, followed by maritime assets and aircraft, and lastly, ground force materiel. China is developing and producing increasingly advanced systems, augmented through selected investments into foreign designs and reverse engineering. However, China's defense industries are increasing the quality of output in all of these areas as well as increasing overall production capacities. Over the past decade, China has made dramatic improvements in all defense industrial production sectors and is comparable to other major weapon system producers like Russia and the European Union in some areas.

**Missile and Space Industry.** China's production of a range of ballistic, cruise, air-to-air, and surface-to-air missiles for the PLA and for export has likely been enhanced by upgrades to primary final assembly and rocket motor production facilities over the past few years. China's space launch vehicle industry is expanding to support commercial and rapid satellite launch services and the manned space program. The majority of China's missile programs, including its ballistic and cruise missile systems, are comparable to other international top-tier producers, while its surface-to-air missile systems lag behind global leaders. China's missile industry modernization efforts have positioned it well for the foreseeable future.

**Naval/Shipbuilding Industry.** Shipyard expansion and modernization have increased China's shipbuilding capacity and capability, generating benefits for all types of military projects, including submarines, surface combatants, naval aviation, and sealift assets. Collaboration between China's two largest State-owned shipbuilders, China State Shipbuilding Corporation (CSSC) and China Shipbuilding Industry Corporation (CSIC), in shared ship designs and construction information will likely increase shipbuilding efficiency. China continues to invest in foreign suppliers for some propulsion units, but is becoming increasingly self-reliant. China is the top ship-producing nation in the world and is pursuing a domestic aircraft carrier program. China is outfitting its latest classes of surface combatants with increasingly sophisticated anti-surface, -air, and –subsurface defensive and offensive capabilities. China is using more sophisticated ship design and construction program management techniques and software, and it is improving in most areas of the maritime sector.

**Armaments Industry.** There have been production capacity advances in almost every area of PLA Army systems including production of new tanks, armored personnel carriers, air defense artillery systems, and artillery pieces. However, China still relies on foreign acquisition to fill gaps in select critical technical capabilities, such as turbine aircraft engines. China is capable of producing ground weapon systems at or near world standards; however, quality deficiencies persist with some export equipment.

**Aviation Industry.** China's commercial and military aviation industries have advanced to produce indigenously improved versions of older aircraft; a developmental large transport aircraft; modern fourth- to fifth-generation fighters incorporating low observable technologies; and attack helicopters. China's commercial aircraft industry has invested in high-precision and technologically advanced machine tools and production processes, avionics, and other components that can also be used in the production of military aircraft. However, the Chinese aircraft industry remains reliant on foreign sourcing for dependable, proven high-performance aircraft engines. Infrastructure and experience for the production of large-body commercial and military aircraft are improving as a result of China's ongoing C919 commercial airliner and Y-20 large transport developmental programs.

**Foreign Technology Acquisition.** Key areas where China continues to supplement indigenous military modernization efforts through targeted foreign technologies include engines for aircraft, tanks, and naval vessels; solid state electronics and microprocessors, guidance and control systems, enabling technologies such as cutting-edge precision machine tools, advanced diagnostic and forensic equipment, and computer-assisted design, manufacturing, and engineering. China often pursues these foreign technologies for the purpose of reverse engineering or to supplement indigenous military modernization efforts.

China seeks some high-tech components and certain major end items, particularly from Russia, that it has difficulty producing domestically. China is pursuing advanced Russian defense equipment such as the SA-X-21b (S-400) SAM system, Su-35 fighter aircraft, and a new joint-design and production program for diesel-electric submarines based on the Russian PETERSBURG/LADA-class. Between 2011 and 2012, Russia agreed to sell China IL-76 transport aircraft and Mi-171 helicopters. Russia's concerns about intellectual property protections affect the types and quantities of advanced arms or associated production technologies it is willing to transfer to China, but resistance is waning as Russia looks to China to relieve the effects of Western sanctions imposed in response to Russia's recent actions in Ukraine. China also has signed significant purchase contracts with Ukraine in recent years, including contracts for assault hovercraft and aircraft engines.

**Science and Technology Development Goals through 2020.** China's National Medium- and Long-Term Program for Science and Technology Development (2006-2020), issued by the State Council in February 2006, seeks to transform China into an "innovation-oriented society by 2020." The plan defines China's science and technology focus in terms of "basic research," "leading-edge technologies," "key fields and priority subjects," and "major special items," all of which have military applications.

In October 2014, China's Ministry of Science and Technology and Ministry of Finance issued a joint statement announcing future reforms of China's science spending. The objectives of the reform are to combat widely reported corruption and waste of government funds for science and technology research. The reform plans to consolidate State research funding- where previously 40 agencies administered more than 100 science and technology programs and funds- into 5 new channels:

1. The National Natural Science Foundation (small-scale competitive grants);
2. National science and technology major projects;
3. Key national research and development programs;
4. Special funds to guide technological innovation; and
5. Special projects for developing human resources and infrastructure.

**Basic Research.** As part of a broad effort to expand basic research capabilities, China identified five areas that have military applications as major strategic needs or science research plans requiring active government involvement and funding:

- Material design and preparation;
- Manufacturing in extreme environmental conditions;
- Aeronautic and astronautic mechanics;
- Information technology development; and
- Nanotechnology research.

In nanotechnology, China has progressed from virtually no research or funding in 2002 to being a close second to the United States in total government investment.

**Leading-edge Technologies.** China is focusing on the following technologies for rapid development:

- Information Technology: Priorities include intelligent perception technologies, ad hoc networks, and virtual reality technologies;
- New Materials: Priorities include smart materials and structures, high-temperature superconducting technologies, and highly efficient energy materials technologies;
- Advanced Manufacturing: Priorities include extreme manufacturing technologies and intelligent service advanced machine tools;

- Advanced Energy Technologies: Priorities include hydrogen energy and fuel cell technologies, alternative fuels, and advanced vehicle technologies;
- Marine Technologies: Priorities include three-dimensional maritime environmental monitoring technologies, fast, multi-parameter ocean floor survey technologies, and deep-sea operations technologies; and
- Laser and Aerospace Technologies: Priorities include development of chemical and solid laser state technologies to field a weapon-grade system ultimately from ground-based and airborne platforms.

**Key Fields and Priority Subjects.** China has identified certain industries and technology groups with potential to provide technological breakthroughs, remove technical obstacles across industries, and improve international competitiveness. Specifically, China's defense industries are pursuing advanced manufacturing, information technology, and defense technologies. Examples include radar; counterspace capabilities; secure C4ISR; smart materials; and low-observable technologies.

**Major Special Items.** China has also identified 16 "major special items" for which it plans to develop or expand indigenous capabilities. These include core electronic components, high-end universal chips and operating system software, very large-scale integrated circuit manufacturing, next-generation broadband wireless mobile communications, high-grade numerically controlled machine tools, large aircraft, high-resolution satellites, and lunar exploration.

**Espionage Activities Supporting China's Military Modernization.** There continue to be instances of Chinese nationals located in the United States acting as procurement agents and intermediaries to obtain sensitive or export-restricted U.S. equipment and technologies with military applications. China uses its intelligence services and employs other illicit approaches that violate U.S. laws and export controls to obtain key national security and export-restricted technologies, controlled equipment, and other materials not readily obtainable through commercial means or academia.

- In October 2013, a Federal grand jury returned a seven-count indictment against Chinese national, Liu Yi, for unlawfully accessing and disclosing trade secrets from a U.S. technology company. Liu, a former employee, allegedly used a laptop provided by the company during his employment to access and download information related to technology the company was developing for possible use in U.S. nuclear submarines and fighter aircraft.
- In December 2013, Chinese national Zhang Mingsuan received 57 months in jail for violating the International Emergency Economic Powers Act by attempting to export thousands of pounds of high-grade carbon fiber for use by the

Chinese military. During a recorded conversation in 2012, Zhang claimed he urgently needed the fiber in connection with the scheduled test flight of a Chinese fighter plane.

- In July 2014, Chinese national Cai Bo pled guilty to violating the Arms Export Control Act and the International Traffic in Arms Regulations while attempting to export sensors primarily manufactured for the U.S. Department of Defense. Beginning in March 2012, Cai—employed by a Chinese technology company at the time—conspired with his cousin Chinese national Cai Wenhong to smuggle the sensors out of the United States for a Chinese customer.
- In August 2014, a Federal grand jury returned a five-count indictment of Chinese national Su Bin related to a computer hacking scheme involving the theft of trade secrets from U.S. defense contractors. The indictment alleges Su worked with unindicted co-conspirators in China to infiltrate U.S. computer systems and obtain information related to U.S. military programs such as the C-17, F-22, and F-35.

In addition, multiple U.S. criminal indictments and investigations since 2009 involved non-ethnic Chinese U.S. citizens and naturalized Chinese U.S. citizens or permanent resident aliens procuring and exporting controlled items to China. These included efforts to acquire and transfer sensitive or military-grade equipment such as radiation-hardened programmable semiconductors and computer circuits, restricted microwave amplifiers, high-grade carbon fiber, export-restricted technical data, and thermal imaging cameras.

### China's Arms Exports

From 2009 to 2013, China signed about $14 billion in arms export agreements for conventional weapons systems worldwide, ranging from general purpose materiel to major weapons systems. In 2014 and the coming years, China's arms exports will likely increase modestly as China's domestic defense industry improves. Chinese defense firms are marketing and selling arms throughout the world with the bulk of their sales to the Asia-Pacific and Sub-Saharan African regions.

- Pakistan remains China's primary customer for conventional weapons. China engages in both arms sales and defense industrial cooperation with Islamabad, including F-22P frigates with helicopters, K-8 jet trainers, F-7 fighter aircraft, early warning and control aircraft, main battle tank production, air-to-air missiles, and anti-ship cruise missiles. In June 2014, Pakistan started co-producing the first two of fifty Block 2 JF-17s, which is an upgraded version of the Block I JF-17.
- China is the largest supplier of arms to the Sub-Saharan Africa region, which was China's second highest sales region between 2009-2013 with about $4 billion in sales. Sub-Saharan African countries view China as a provider of low-cost weapons with generally fewer end-use monitoring conditions relative to other arms suppliers. China tends to be relatively flexible with regard to payment arrangements. China's top customers in this region are South Sudan, Sudan, and Ethiopia.

# 5

# FORCE MODERNIZATION FOR A TAIWAN CONTINGENCY

Security in the Taiwan Strait is largely a function of dynamic interactions between and among mainland China, Taiwan, and the United States. China's strategy toward Taiwan has been influenced by what it sees as positive developments in Taiwan's political situation and approach to engagement with China. However, China's overall strategy continues to incorporate elements of persuasion and coercion to deter or repress the development of political attitudes in Taiwan favoring independence. China and Taiwan have made progress in expanding cross-Strait trade/economic links and people-to-people contacts.

Alongside positive public statements about the Taiwan Strait situation from top leaders in China following the re-election of President Ma Ying-jeou in 2012, there have been no signs that China's military posture opposite Taiwan has changed significantly. The PLA has developed and deployed military capabilities to coerce Taiwan or to attempt an invasion, if necessary. These improvements pose major challenges to Taiwan's security, which has been based historically upon the PLA's inability to project power across the 100 nm Taiwan Strait, natural geographic advantages of island defense, Taiwan's armed forces' technological superiority, and the possibility of U.S. intervention.

## CHINA'S STRATEGY IN THE TAIWAN STRAIT

China appears prepared to defer the use of force, as long as it believes that unification over the long term remains possible and the costs of conflict outweigh the benefits. China argues that the credible threat to use force is essential to maintain the conditions for political progress and to prevent Taiwan from making moves toward *de jure* independence. China has refused for decades to renounce the use of force to resolve the Taiwan issue, despite simultaneously professing its desire for peaceful unification under the principle of "one country, two systems."

The circumstances under which the mainland has historically warned it would use force have evolved over time in response to the island's declarations of its political status, changes in PLA capabilities, and China's view of Taiwan's relations with other countries. These circumstances, or "red lines," have included:

- Formal declaration of Taiwan independence;
- Undefined moves toward Taiwan independence;
- Internal unrest on Taiwan;
- Taiwan's acquisition of nuclear weapons;

- Indefinite delays in the resumption of cross-Strait dialogue on unification;
- Foreign intervention in Taiwan's internal affairs; and,
- Foreign forces stationed on Taiwan.

Article 8 of the March 2005 "Anti-Secession Law" states that China may use "non-peaceful means" if "secessionist forces … cause the fact of Taiwan's secession from China"; if "major incidents entailing Taiwan's secession" occur; or, if "possibilities for peaceful reunification" are exhausted. The ambiguity of these "redlines" preserves China's flexibility.

## CHINA'S COURSES OF ACTION AGAINST TAIWAN

The PLA is capable of increasingly sophisticated military action against Taiwan. It is possible China would first pursue a measured approach characterized by signaling its readiness to use force, followed by a deliberate buildup of force to optimize the speed of engagement over strategic deception. Another option is that China would sacrifice overt, large-scale preparations in favor of surprise to force rapid military and/or political resolution before other countries could respond. If a quick resolution is not possible, China would seek to:

- Deter potential U.S. intervention;
- Failing that, delay intervention and seek victory in an asymmetric, limited, quick war; and,
- Fight to a standstill and pursue a political settlement after a protracted conflict.

**Maritime Quarantine or Blockade.** In addition to direct military engagement, PLA writings describe potential alternative solutions — air blockades, missile attacks, and mining to force capitulation. China could declare that ships en route to Taiwan must stop in mainland ports for inspection and/or transshipment prior to transiting to Taiwan ports. China could also attempt the equivalent of a blockade by declaring exercise or missile closure areas in approaches to ports, in effect closing port access and diverting merchant traffic. The PLA employed this method during the 1995-96 missile firings and live-fire exercises. There is a risk, however, that China would underestimate the degree to which any attempt to limit maritime traffic to and from Taiwan would trigger countervailing international pressure and military escalation.

**Limited Force or Coercive Options.** China might use a variety of disruptive, punitive, or lethal military actions in a limited campaign against Taiwan, likely in conjunction with overt and clandestine economic and political activities. Such a campaign could include computer network or limited kinetic attacks against Taiwan's political, military, and economic infrastructure to induce fear in Taiwan and degrade the populace's confidence in the Taiwan leadership. Similarly, PLA special operations forces could infiltrate Taiwan and conduct attacks against infrastructure or leadership targets.

**Air and Missile Campaign.** China could use missile attacks and precision strikes against air defense systems, including air bases, radar sites, missiles, space assets, and communications facilities to degrade Taiwan's defenses, neutralize Taiwan's leadership, or break the Taiwan people's resolve.

**Amphibious Invasion.** Publicly available Chinese writings describe different operational concepts for amphibious invasion. The most prominent of these, the Joint Island Landing Campaign, envisions a complex operation relying on coordinated, interlocking campaigns for logistics, air, and naval support, and EW. The objective would be to break through or circumvent shore defenses, establish and build a beachhead, transport personnel and materiel to designated landing sites in the north or south of Taiwan's western coastline, and launch attacks to seize and occupy key targets and/or the entire island.

The PLA is capable of accomplishing various amphibious operations short of a full-scale invasion of Taiwan. With few overt military preparations beyond routine training, China could launch an invasion of small Taiwan-held islands in the South China Sea such as Pratas or Itu Aba. A PLA invasion of a medium-sized, better defended offshore island such as Matsu or Jinmen is within China's capabilities. Such an invasion would demonstrate military capability and political resolve while achieving tangible territorial gain and simultaneously showing some measure of restraint. However, this kind of operation includes significant, if not prohibitive, political risk because it could galvanize pro-independence sentiment on Taiwan and generate international opposition.

Large-scale amphibious invasion is one of the most complicated and difficult military operations. Success depends upon air and sea superiority, rapid buildup and sustainment of supplies on shore, and uninterrupted support. An attempt to invade Taiwan would strain China's armed forces and invite international intervention. These stresses, combined with China's combat force attrition and the complexity of urban warfare and counterinsurgency (assuming a successful landing and breakout), make amphibious invasion of Taiwan a significant political and military risk. Taiwan's investments to harden infrastructure and strengthen defensive capabilities could also decrease China's ability to achieve its objectives. Moreover, China does not appear to be building the conventional amphibious lift required to support such a campaign.

## THE PLA'S CURRENT POSTURE FOR A TAIWAN CONFLICT

Preparation for a Taiwan conflict with the possibility of U.S. intervention continues to dominate China's military modernization program.

**Missile Forces.** The Second Artillery Force is prepared to conduct missile attacks and precision strikes against Taiwan's air defense systems, air bases, radar sites, missiles, space

assets, and C2 and communications facilities, in an attempt to degrade Taiwan's defenses, neutralize Taiwan's leadership, or break the public's will to fight.

**Air Forces.** The PLA Air Force has maintained a force posture that provides it with a variety of capabilities to leverage against Taiwan in a contingency. First, it has stationed a large number of advanced aircraft within an unrefueled range of Taiwan, providing them with a significant capability to conduct air superiority and ground attack operations against Taiwan. Second, a number of long-range air defense systems provide a strong layer of defense of China's mainland against a counterattack. Third, China's development of support aircraft provide it improved ISR to support PLAAF operations in a contingency.

**Navy Forces.** The PLA Navy is improving anti-air and anti-surface warfare capabilities, developing a credible at-sea nuclear deterrent, and introducing new platforms that are positioned to strike Taiwan in a cross-Strait conflict. The additional attack submarines, multi-mission surface combatants, and fourth-generation naval aircraft entering the force are designed to achieve sea superiority within the first island chain as well as deter and counter any potential third party intervention in a Taiwan conflict.

**Ground Forces.** Increasingly armed with more modern systems such as armed attack helicopters, the PLA Army is conducting joint training exercises that will prepare them for a Taiwan invasion scenario. The PLA Army often conducts training, including amphibious landing training, under realistic conditions, including all-weather and at night. Improved networks provide real-time data transmissions within and between units, enabling better C2 during operations. Additionally, the PLA Army's ongoing fielding of advanced air defense equipment is significantly enhancing the self-defense of key C2 elements and other critical assets assessed as likely tasked for potential use against Taiwan. As the number of these new systems grows in the PLA Army, the ability of an amphibious invasion force to defend cross-Strait amphibious lodgments successfully against counterattacks by both legacy and advanced weaponry will inevitably increase.

## TAIWAN'S DEFENSIVE CAPABILITIES

Taiwan has historically relied upon multiple military variables to deter PLA aggression: the PLA's inability to project sufficient power across the Taiwan Strait, the Taiwan military's technological superiority, and the inherent geographic advantages of island defense. China's increasingly modern weapons and platforms (more than 1,200 conventional ballistic missiles, an ASBM program, ships and submarines, combat aircraft, and improved C4ISR capabilities) have eroded or negated many of these factors.

Taiwan is taking important steps to build its war reserve stocks, grow its defense industrial base, improve joint operations and crisis

response capabilities, and strengthen its officer and noncommissioned officer (NCO) corps. These improvements partially address Taiwan's declining defensive advantages. Taiwan is following through with its transition to a volunteer military and reducing its active military end-strength from 275,000 to approximately 175,000 personnel to create a "small but smart and strong force." Under this plan, which is slated for full implementation in 2019, the cost savings from a smaller force will free up resources to increase volunteer salaries and benefits, although these savings will not be sufficient to cover the costs of volunteers. The transition has led to additional personnel costs needed to attract and retain personnel under the volunteer system, diverting funds from foreign and indigenous acquisition programs, as well as near-term training and readiness. In addition, Taiwan military spending has dropped to approximately 2 percent of GDP. Meanwhile, China's official defense budget has grown to roughly 10 times that of Taiwan's. Recognizing China's continued growth in military spending, Taiwan is working to integrate innovative and asymmetric measures into its defense planning in order to counter-balance China's growing capabilities.

U.S. policy toward Taiwan derives from its One-China Policy, based on the three Joint Communiqués and the Taiwan Relations Act (TRA). United States policy opposes any unilateral changes to the status quo in the Taiwan Strait by either side. The U.S. continues to support peaceful resolution of cross-Strait differences in a manner acceptable to the people on both sides.

Consistent with the TRA, the United States has helped to maintain peace, security, and stability in the Taiwan Strait by providing defense articles and services to enable Taiwan to maintain a sufficient self-defense capability. To this end, the United States has announced more than $12 billion in arms sales to Taiwan since 2010.

# 6

# U.S.-CHINA MILITARY-TO-MILITARY CONTACTS

## STRATEGY FOR ENGAGEMENT

The 2015 National Security Strategy emphasizes that the United States seeks to develop a constructive relationship with China that promotes security and prosperity in Asia and around the world. At the same time, the strategy acknowledges there will be areas of competition and underscores that the United States will manage this competition with China from a position of strength while seeking ways to reduce the risk of misunderstanding or miscalculation. The Department of Defense (DoD) strategy for military engagement with the PRC's Ministry of National Defense is part of this broader approach.

U.S.-China defense contacts and exchanges provide opportunities to explore and expand cooperation in areas of mutual interest and to manage competition constructively. In 2015, DoD's plan for military-to-military contacts with the PRC focuses on three interconnected lines of effort: building sustained and substantive dialogue through policy dialogues and senior leader engagements; building concrete, practical cooperation in areas of mutual interest; and enhancing risk reduction measures that diminish the potential for incidents or miscalculation.

The pace and scope of China's military modernization provide opportunities as well as challenges for military-to-military engagement. The PLA's growing military capabilities can facilitate deeper practical cooperation in areas ranging from humanitarian assistance to counter-piracy. However, as China's military develops and expands its reach, the risk of an accident or miscalculation also increases, which puts a premium on risk reduction efforts.

Pursuit of a constructive and productive relationship with China is an important part of the U.S. strategy to Rebalance to the Asia-Pacific region, which is designed to preserve and enhance stability in the international system. DoD seeks to strengthen the U.S.-China military-to-military relationship in ways that best serve the interests of the United States and our allies and partners. Sustaining the positive momentum in the military-to-military relationship supports U.S. objectives of ensuring China acts in a manner consistent with international rules and norms and that China serves as a source of stability and shared prosperity in Asia.

As the United States builds a stronger foundation for a military-to-military relationship with China, it must also continue to monitor China's evolving military strategy, doctrine, and force development, and encourage China to be more transparent about its military modernization program. In concert with its allies and partners, the United States will continue adapting its forces, posture, and operational concepts to maintain a stable and secure Asia-Pacific security environment.

## MILITARY-TO-MILITARY ENGAGEMENT IN 2014 – HIGHLIGHTS

The Department of Defense conducts all contacts with China in a manner consistent with the provisions of the National Defense Authorization Act (NDAA) for Fiscal Year 2000.

In 2014, the U.S. and China military-to-military relationship sustained positive momentum and made notable accomplishments. The two militaries established new dialogue channels and signed two historic Memorandums of Understanding (MOU) on confidence-building measures to improve transparency and reduce risk. The Department of Defense also continued to make progress with the PLA in developing the capacity to deliver international public goods, including humanitarian assistance and disaster relief, counter-piracy, search and rescue, and military medicine. China's hosting of the Western Pacific Naval Symposium, the PLA's first-time participation in the RIMPAC naval exercise, and our cooperation in other regional multilateral exercises have also increased cooperative capacity, improved transparency, and reinforced international norms.

Selected visits, exchanges, exercises, and arrangements are highlighted below. A complete list of 2014 engagements is provided at Appendix I.

**Confidence Building Measures:** In June 2013, Chinese President Xi Jinping proposed to President Obama that the two sides consider developing confidence-building measures that address the notification of major military activities and the safety of air and maritime encounters. DoD and the PRC Ministry of National Defense subsequently held more than 10 rounds of discussions resulting in two MOUs signed by then-Secretary of Defense Chuck Hagel and PRC Minister of National Defense Chang Wanquan. The two non-binding MOUs were announced at the summit meeting between President Obama and President Xi in November 2014 in Beijing.

The Notification of Major Military Activities MOU consists of the MOU itself and two annexes, one regarding strategy and policy announcements, and one on the observation of military exercises. The MOU calls for the establishment of a mechanism to inform when and how both sides exchange notifications, including holding annual meetings to assess progress, improve implementation, and expand notifications through future annexes added through mutual consent. The United States is making a priority of completing an annex for ballistic missile launch notifications.

The Rules of Behavior for Safety of Air and Maritime Encounters MOU consists of the framework itself and two annexes detailing a terms of reference and surface-to-surface encounters. A subsequent annex on air-to-air

encounters is to be completed following further consultations. The MOU affirms the large body of existing international law, standards, and guidance that relate to safe operations, such as the Law of the Sea, the Code for Unplanned Encounters at Sea (CUES), the Chicago Convention, and the International Regulations for Preventing Collisions at Sea (COLREGS).

The completion of the two MOUs reflected a shared objective of the two militaries to improve relations, reduce risk, and expand cooperation in areas of mutual interest while managing our differences through sustained and substantive engagements. These confidence-building mechanisms manage risk and improve reciprocal transparency, while invigorating existing multilateral and bilateral engagement mechanisms, such as the Military Maritime Consultative Agreement (MMCA) and the Defense Policy Coordination Talks (DPCT).

**High-Level Visits and Engagements:** High-level contacts are an important means to exchange views on the international security environment, to identify areas of common perspective, to manage differences, and to facilitate common approaches to shared challenges.

In February 2014, the Beijing Military Region Commander, Lieutenant General Zhang Shibo, and Shenyang Military Region Commander, General Wang Jiaocheng, hosted the U.S. Chief of Staff of the Army, General Raymond Odierno. In addition to meetings with senior PLA officials, General Odierno visited an engineer regiment in in Shenyang Military Region.

In April 2014, then-U.S. Secretary of Defense Chuck Hagel traveled to China, where he met with national civil and senior military officials in Beijing and led the first foreign delegation aboard China's aircraft carrier, the LIAONING, in Qingdao, China. Secretary Hagel met with senior leaders and engaged with soldiers and sailors of the PLA and the PLA Navy from all levels, including crewmen of the LIAONING and young soldiers in training at one of the PLA's non-commissioned officer academies under the General Armaments Department.

Later in April, the U.S. Chief of Naval Operations, Admiral Jonathan Greenert, and Pacific Fleet Commander, Admiral Harry Harris Jr., met with PLA Navy Commander, Admiral Wu Shengli, on the sidelines of the Western Pacific Naval Symposium in Qingdao, China. During the Symposium, participant countries endorsed the Code for Unplanned Encounters at Sea (CUES), improving operational maritime communications in the region.

In May, Chairman of the Joint Chiefs of Staff, General Martin Dempsey, hosted Chinese Chief of the General Staff, General Fang Fenghui, on a counterpart visit to the United States, building on General Dempsey's 2013 visit to China. General Fang visited San Diego

where he visited the U.S. Third Fleet, received a tour of an aircraft carrier (the USS RONALD REAGAN) and a littoral combat ship (the USS CORONADO), and met with Commander, U.S. Pacific Command, Admiral Samuel Locklear. General Fang then travelled to Washington, D.C. where he met with General Dempsey and other senior U.S. officials and visited the National Defense University. Finally, General Fang travelled to U.S. Army Forces Command in Fort Bragg, North Carolina.

In July, Chief of Naval Operations, Admiral Jonathan Greenert, travelled to China where he met with Commander of the PLA Navy, Admiral Wu Shengli, and leaders of the State Oceanic Administration. He also toured several PLA Navy ships and held an "all-hands" meeting with crewmembers of the Chinese aircraft carrier LIAONING.

In September, U.S. Pacific Air Forces Commander, General Herbert Carlisle, hosted Chinese Commander of the Nanjing Military Regional Air Force Command, General Huang Guoxian, at Joint Base Pearl Harbor-Hickam, Hawaii. General Huang also travelled to Elmendorf Air Force Base, Alaska.

In November, Chinese Deputy Chief of the General Staff, Admiral Sun Jianguo, visited the United States. Admiral Sun travelled to U.S. Pacific Command and Alaska Command before visiting the Pentagon to meet with senior DoD officials, including Deputy Secretary of Defense Robert Work.

Also in November, U.S. Pacific Commander, Admiral Samuel Locklear, and Chinese Assistant to the Chief of the General Staff ,Lieutenant General Gao Jin, met during the U.S. Pacific Command (USPACOM) Chiefs of Defense Conference in Brunei, marking China's first time attending this event.

**Recurrent Exchanges:** Recurring institutionalized events form the backbone of U.S.-China defense policy discussions each year. They serve as a regularized mechanism for dialogue.

In January 2014, then-Deputy Secretary of State William Burns; Deputy Assistant Secretary of Defense David Helvey; USPACOM J-5 Major General Michael Dana; and Deputy Director for Asia of the Joint Staff, Brigadier General David Stilwell, visited Beijing for the first Interim Strategic Security Dialogue and met with Chinese Deputy Chief of the General Staff, Lieutenant General Wang Guanzhong. The Dialogue covered issues ranging from North Korea to tensions in the East and South China Seas as well as space, nuclear, and cyber.

In July 2014, then Deputy Secretary of State William Burns and Under Secretary of Defense for Policy Christine Wormuth led the U.S. delegation to the fourth Strategic Security Dialogue in Beijing and met with Executive Vice Foreign Minister Zhang Yesui and Deputy Chief of the General Staff, General Wang Guanzhong. Admiral Locklear and Brigadier General David Stilwell also

participated. Additionally, Admiral Locklear met with Chief of General Staff Fang Fenghui. The two sides engaged in candid, in-depth, and constructive discussion on strategic security issues focused on space, nuclear, and cyber, and undertook to work together to establish a stable and cooperative strategic security relationship.

In October 2014, Under Secretary of Defense for Policy Christine Wormuth hosted Chinese Deputy Chief of the General Staff Wang Guanzhong in Washington for the 15th Defense Consultative Talks (DCTs). Wang also met with Deputy Secretary of Defense Robert Work and Vice Chairman of the Joint Chiefs of Staff, Admiral James Winnefeld. The DCTs are the highest-level annual defense dialogue between the United States and China. The two sides noted the importance of a sustained and substantive military relationship as a component of overall U.S.-China ties and highlighted military-to-military engagement as a mechanism to foster greater understanding and reduce the potential for misperception or miscalculation.

Later in October, Deputy Director for Asia of the Joint Staff, Brigadier General David Stilwell, and Deputy Director of the Strategic Planning Department of the General Staff Department, Major General Wang Weiguo, held the first Joint Staff Strategy Talks in Washington, D.C.

**Functional and Academic Exchanges:** Reciprocal exchanges between functional officers, rising leaders, and institutions of professional military education build new areas of cooperation and develop a generation leaders on both sides who are knowledgeable and adept at handling this increasingly complex and vital relationship. Increasing contacts between mid-level officers is an important objective for both militaries as they seek to build familiarity and mutual understanding between future leaders.

In February 2014, U.S. Pacific Command mid-level officers travelled to China for an exchange with their PRC counterparts. Then, in November, mid-level PLA officers travelled to Carlisle, Pennsylvania for an exchange with Army War College students, the first U.S. exchange with Chinese majors and lieutenant colonels.

PLA general officers visited the United States as part of delegation of students in the strategic-level "Dragons" course at the PLA National Defense University (NDU). As in previous years, U.S. National Defense University CAPSTONE fellows travelled to China, offering an opportunity for newly selected U.S. general and flag officers to increase understanding of China and the Pacific.

**Ship Visits and Exercises:** Ship visits and exercises promote trust between the two sides and build joint capacity to provide international public goods like including

search and rescue, disaster relief, and counter-piracy.

In January 2014, PLA soldiers participated in the Humanitarian Assistance and Disaster Relief portions of the U.S and Thai-led COBRA GOLD exercise in Thailand for the first time.

From June-August 2014, the Chinese PLA Navy participated in the RIMPAC multinational naval exercise in Hawaii for the first time, sending four ships; the destroyer HAIKOU, the frigate YUEYANG, the supply ship QIANDAOHU, and the hospital ship PEACE ARK. The PEACE ARK participated in an HA/DR drill and military medical exercise. The HAIKOU and YUEYANG participated in counter-piracy drills, while a dive salvage team participated in a search and rescue scenario. At the conclusion of RIMPAC, the HAIKOU, YUEYANG, and QIANDAOHU participated in a communications drill to practice CUES communications prior to conducting a port call in San Diego, California.

In addition to the four PLA Navy ships invited to participate at RIMPAC, the PLA Navy positioned a Type 815 DONGDIAO-class intelligence collection vessel in the U.S. EEZ around Hawaii, presumably to collect intelligence on the exercise.

In August 2014, the USS BLUE RIDGE, the 7th Fleet's command ship, visited Qingdao, conducted a drill with PLAN frigate YANCHENG to practice using CUES, and conducted a search and rescue table top exercise.

In December 2014, the UNITED STATES and China held another successful counter-piracy exercise in the Gulf of Aden, developing greater capacity to cooperate in delivering international public goods.

## PLANNING FOR MILITARY-TO-MILITARY ENGAGEMENTS IN 2015

A list of planned engagements for 2015 is provided in Appendix I.

## SPECIAL TOPIC: SPACE LIFT CAPABILITIES AND LAUNCH TRENDS

**SPACE LIFT:** China boasts the most dynamic space program in the world today, supported by a robust capacity for space-lift. China's space-lift infrastructure, including space-launch centers and space-launch vehicles (SLV), affords China tremendous flexibility in current as well as future space mission planning. China currently operates eight specialized SLVs with lift capacities ranging from light to medium-heavy lift and the capability to deploy satellites at altitudes ranging from low earth orbit (LEO) to geosynchronous orbit (GEO) in support of its national goals and objectives.

- *Long March-2C and -2D*: The LM-2C and LM-2D SLVs provide China light-lift capability into LEO, including sun synchronous orbits (SSO) favored by intelligence, surveillance, and reconnaissance (ISR) satellites.
- *Long March-4B and -4C*: The LM-4B and LM-4C provide China a medium-lift capability into LEO, including SSO. These are the largest SLVs China regularly employs on LEO missions.
- *Long March-2F*: The LM-2F provides China a heavy-lift capability into LEO. China has only employed the LM-2F for launches associated with its manned space program, including the launch of its Shenzhou and Tiangong spacecraft.
- *Long March-3A, -3B, and -3C*: The LM-3-series SLVs provide China a capability to launch medium, intermediate, and heavy satellites on missions into GEO. Two (LM-3C) or four (LM-3B) modular strap-on boosters may be added to a common core, as necessary.

Three launch centers, located at high and low latitudes and accompanied by mostly unobstructed launch corridors, afford China ease of access to a full range of orbital inclinations.

- *Jiuquan Satellite Launch Center (JSLC)*: Located in the desert of northwest Gansu Province, the JSLC is the only launch complex currently supporting China's manned space program.
- *Taiyuan Satellite Launch Center (TSLC)*: Located in northern Shanxi Province, the TSLC may support launches into various LEO orbits.
- *Xichang Satellite Launch Center (XSLC)*: Located in southwest Sichuan province, the XSLC is the only Chinese launch complex currently supporting missions to GEO.

China recently completed construction of its fourth and largest spaceport on Hainan Island, located off China's southern coast. Named Wenchang Satellite Launch Center, it will launch China's newly developed LM-5 SLV, a heavy-lift SLV that will more than double China's current lift capacity on LEO and GEO missions. The new SLV and launch center are essential to China's national goals of

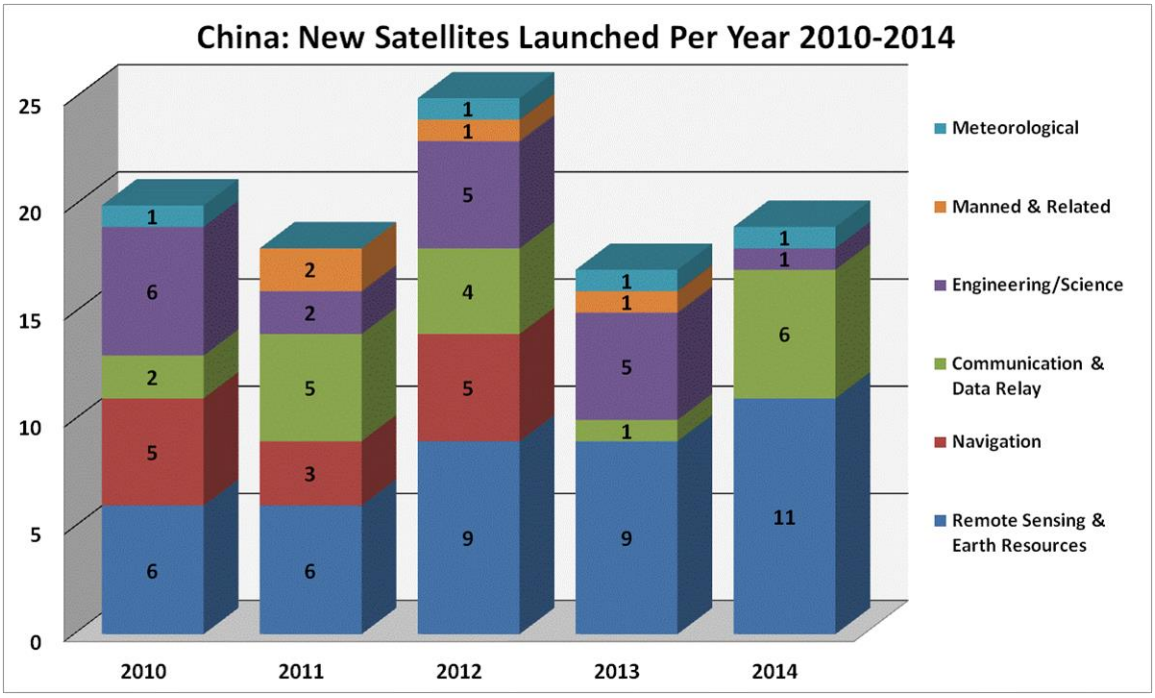
constructing a space station by 2022 and engaging in manned lunar exploration. The first flight of the LM-5 could occur as early as 2015.

**SPACE LAUNCH TRENDS:** Over the last five years, the number of Chinese space launches and satellites placed on orbit has remained relatively consistent, with China typically launching 15-20 SLVs, and placing 17-25 satellites on orbit each year (See Figure 1). Two noteworthy trends in China's space launches since 2010 have been the increase in remote sensing/earth resource satellites and the decline in launches of navigation satellites.

> Since 2010, the number of Chinese remote sensing and earth resources satellites launched as a percentage of total launches has increased. Satellites in this category accounted for more than one half of the satellites China launched during the last two years, suggesting China places a great deal of priority on launch of its remote sensing satellites.

> China launched 13 Beidou navigation satellites between 2010 and 2012, but did not launch any in 2013 or 2014. Although this may seem unusual, this drop-off of navigation satellite launches was expected. By the end of 2012, China had completed launches of the "regional phase" of its Beidou-2 satellite navigation project and reportedly began testing of the system in 2013. According to China's Satellite Navigation Office, China will resume launching navigation satellites for its worldwide satellite navigation constellation in 2015 and hopes to complete it as early as 2017.

Figure 1:



## SPECIAL TOPIC: CHINA'S DEVELOPMENT AND TESTING OF MISSILE DEFENSE

China is developing its own missile defense capability, going beyond the long-range SAMs that it has acquired from foreign suppliers that provide only a limited capability against ballistic missiles. China continues to develop a missile defense umbrella consisting of a kinetic energy intercept capability at exo-atmospheric altitudes, as well as intercepts of ballistic missiles and other aerospace vehicles within the upper atmosphere. China has tested a ground-based, midcourse interceptor, with the first test occurring in January 2010. Shortly after the test, China claimed that the test was defensive in nature and not directed at any country. China's next test of the ground-based interceptor came in January 2013. It too, was successful, prompting a Second Artillery Force Engineering Institute professor to claim that "the success of this missile defense test means that China has already successfully resolved the issues of upper atmosphere target identification, tracking, and terminal guidance issues and that its mid-course missile defense technology is at the forefront of world technology." Meanwhile, other Chinese commentators have noted that China remains far behind the United States, with a number of issues still needing to be addressed. These include resisting electronic attack and the capacity to respond to multiple warheads. Finally, if China is to deploy an effective BMD system, it will need to be supported by a space-based early warning system, currently missing from China's BMD infrastructure.

## SPECIAL TOPIC: CHINA'S RECLAMATION IN THE SOUTH CHINA SEA

In 2014, China engaged in an extensive land reclamation effort at five of its outposts in the Spratly Islands. As of late December 2014, China had reclaimed about 500 acres of land as part of this effort. At four reclamation sites, China transitioned from land reclamation operations to infrastructure development and delivered scores of heavy construction equipment to all five reclamation sites. Although it is unclear what will ultimately be built on these expanded outposts, they could include harbors, communications and surveillance systems, logistics support, and at least one airfield.

At reclamation sites in the infrastructure phase of development, China excavated deep channels and built new berthing areas to allow access for larger ships to the outposts. The ultimate purpose of the expansion projects remains unclear and the Chinese Government has stated these projects are mainly for improving the living and working conditions of those stationed on the islands. However, most analysts outside China believe that China is attempting to change facts on the ground by improving its defense infrastructure in the South China Sea. No Chinese-occupied outpost in the Spratly Islands has an airfield or secure docking, unlike other claimant nations.

Taiwan began a modest land reclamation effort at Itu Aba Island by April 2014 and to date has reclaimed at least approximately five acres of land near the island's airstrip. According to regional press reporting, Taiwan is building a $100-million port next to the airstrip that is designed to accommodate 3,000-ton naval frigates and coast guard cutters.

# **APPENDIX I:** MILITARY-TO-MILITARY EXCHANGES

| U.S.-CHINA MILITARY-TO-MILITARY CONTACTS FOR 2014 | |
|---|---|
| **HIGH-LEVEL VISITS TO CHINA** | ***Month (2014)*** |
| U.S. Army Chief of Staff to China | February |
| U.S. Secretary of Defense to China | April |
| U.S. Chief of Naval Operations to China | July |
| **HIGH-LEVEL VISITS TO UNITED STATES** | |
| PRC Chief of the General Staff to the United States | May |
| PRC Nanjing Military Region Commander to the United States | September |
| PRC Deputy Chief of the General Staff to the United States | October |
| **HIGH-LEVEL MULTILATERAL ENGAGEMENTS** | |
| Western Pacific Naval Symposium in China | April |
| U.S. Pacific Command Chiefs of Defense Conference in Brunei | November |
| **RECURRENT EXCHANGES** | |
| Interim Strategic Security Dialogue | January |
| Military Maritime Consultative Agreement Working Group in the United States | March |
| Strategic Security Dialogue | July |
| Confidence Building Measures Working Group | Multiple |
| USS BLUE RIDGE Visit to China | August |
| PLA Navy Ship Visit to San Diego | August |
| Defense Consultative Talks in the United States | October |
| Joint Staff Strategy Talks in the United States | October |
| Defense Policy Coordination Talks in China | December |
| **ACADEMIC EXCHANGES** | |
| PLA Academy of Military Science to U.S. Army War College | March |
| PLA participation in U.S. Military Academy Sandhurst Competition | April |
| PLA Cadets to U.S. Military Academy for Foreign Academy Exchange Program | April |
| U.S. Air War College delegation to China | April |
| National Defense University CAPSTONE to China | May |
| U.S. National War College delegation to China | May |
| PLA Air Force Command College delegation to United States | May |

| | |
|---|---|
| PRC National Defense University "Dragons" to United States | October |
| Mid-Level PLA officers to U.S. Army War College | November |
| **FUNCTIONAL EXCHANGES** | |
| PLA delegation attends legal issues study group in the United States | January |
| U.S. Pacific Command Mid-Level Officers Exchange in China | February |
| PLA Military Medical Delegation to the United States | March |
| PLA Human Resources Delegation to the United States | May |
| Pacific Armies Management Seminar in Bangladesh | September |
| Archives Exchange in China | September |
| PLA Auditing delegation to the United States | September |
| Army Peacekeeping Workshop in the United States | September |
| **JOINT AND MULTILATERAL EXERCISES** | |
| COBRA GOLD in Thailand | February |
| KOMODO in Indonesia | March |
| KHAAN QUEST in Mongolia | June |
| RIMPAC in the United States | June |
| FORTUNE GUARD Proliferation Security Initiative Exercise | August |
| KOWARI in Australia | October |
| Counter-Piracy Exercise in the Gulf of Aden | December |

| U.S.-CHINA MILITARY-TO-MILITARY EXCHANGES PLANNED FOR 2015 |
|---|
| **HIGH-LEVEL VISITS TO CHINA** |
| U.S. Senior Defense or Military Leader to China (TBD) |
| U.S. Pacific Commander Delegation to China |
| **HIGH-LEVEL VISITS TO UNITED STATES** |
| PRC Central Military Commission Vice Chairman to the United States (TBD) |
| PRC Military Region Commander to the United States (TBD) |
| **INSTITUTIONALIZED EXCHANGES** |
| Defense Consultative Talks |
| Asia-Pacific Security Dialogue |
| Defense Policy Coordination Talks |
| Joint Staff Strategy Talks |
| MMCA Plenary and Working Groups |
| Army-to-Army Dialogue |
| Disaster Management Exchange |
| Mid-Level Officer Exchange |
| Military Medicine Exchange |
| PLA Archive Delegation |
| Maritime Legal Issues Dialogue |
| **ACADEMIC EXCHANGES** |
| PRC National Defense University (NDU) "Dragons" delegation to the United States |
| PLA Air Force Class Delegation to United States Air War College |
| U.S. NDU "Capstone" delegation to China |
| U.S. NDU President visit to PRC NDU |
| U.S. NDU and Chinese NDU Strategic Studies Dialogue |
| **FUNCTIONAL EXCHANGES** |
| PLA Navy Ship Visits to the United States |
| U.S. Navy Ship Visits to China |
| U.S. Navy-PLA Navy Prospective Commanding Officer Exchange in the United States and China |
| Gulf of Aden Counter-piracy Exercise |
| Peacekeeping Exchange in the United States and China |
| PLA General Logistics Department Exploratory Exchange in the United States |
| U.S.-China Medical Operations with PEACE ARK Crew in a Third Country (TBD) |

## BILATERAL OR MULTILATERAL MILITARY EXERCISES INVOLVING THE PLA 2008-2014

| Bilateral and Multilateral Exercises Since 2008 | | | |
|---|---|---|---|
| **Year** | **Exercise Name** | **Type of Exercise** | **Participants** |
| 2008 | Hand-in-Hand 2008 | Counterterrorism | India |
| | Strike 2008 | Counterterrorism | Thailand |
| 2009 | Aman (Peace) 2009 | Maritime | Hosted by Pakistan (38 countries participated) |
| | Cooperation 2009 | Counterterrorism | Singapore |
| | Country-Gate Sharp Sword 2009 | Counterterrorism | Russia |
| | Peace Angel 2009 | Medical | Gabon |
| | Peace Keeping Mission 2009 | Peacekeeping Operations | Mongolia |
| | Peace Mission 2009 | Counterterrorism | Russia |
| | Peace Shield 2009 | Counter-Piracy | Russia |
| | *Unnamed* | Maritime | Singapore |
| 2010 | Blue Strike/Blue Assault 2010 | Counterterrorism | Thailand |
| | Cooperation 2010 | Counterterrorism | Singapore |
| | Friendship 2010 | Counterterrorism | Pakistan |
| | Friendship Action 2010 | Ground (Mountain Warfare) | Romania |
| | Peace Angel 2010 | Medical | Peru |
| | Peace Mission 2010 | Counterterrorism | Russia, Kazakhstan, Kyrgyzstan, Tajikistan |
| | Strike 2010 | Counterterrorism | Thailand |
| | *Unnamed* | Search and Rescue | Australia |
| | *Unnamed* | Maritime | New Zealand |
| | *Unnamed* | Counter-Piracy | South Korea |
| | *Unnamed* | Search and Rescue | Taiwan |
| | *Unnamed* | Air | Turkey |
| | *Unnamed* | Ground | Turkey |
| | *Unnamed* | Search and Rescue | Vietnam |
| 2011 | *Unnamed* | Joint Border Patrol | Kazakhstan |
| | Shaheen 1 | Air Exercise | Pakistan |
| | Tian Shan-2 2011 | Counterterrorism | Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Uzbekistan |
| | Aman (Peace) 2011 | Maritime | Hosted by Pakistan (39 countries participated) |
| | *Unnamed* | Maritime (Counter-Piracy) | Tanzania |
| | *Unnamed* | Maritime (Counter-Piracy) | Pakistan |
| | Sharp Knife-2011 | Special Operations/Counterterrorism | Indonesia |
| | *Unnamed* | Maritime | Vietnam |
| | *Unnamed* | Airborne | Belarus |
| | Khan Quest-11 | Peacekeeping Operations (observer status) | Mongolia |

| | | | |
|---|---|---|---|
| 2011 | Cooperation-2011 | Special Operations (Urban Warfare) | Venezuela |
| | Friendship-IV | Ground (Low Intensity Conflict) | Pakistan |
| | Cooperation Spirit 2011 | Humanitarian Aid/Disaster Relief | Australia |
| 2012 | Naval Cooperation 2012 | Maritime | Russia |
| | *Unnamed* | Counter-Piracy | France |
| | Blue Assault 2012 | Maritime (Amphibious Assault) | Thailand |
| | Peace Mission 2012 | Counterterrorism | Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Uzbekistan |
| | Sharp Knife 2012 | Counterterrorism | Indonesia |
| | *Unnamed* | Maritime (Search and Rescue) | Vietnam |
| | *Unnamed* | Counter-piracy | United States |
| | Cooperation Spirit 2012 | HA/DR | Australia, New Zealand |
| 2013 | -*Unnamed* 2013 | Counterterrorism; | Pakistan |
| | -ADMM+ Exercise in Brunei 2013 | Maritime (Search and Rescue); HA/DR | ASEAN |
| | -Peace Mission 2013 | Counterterrorism | Russia |
| | -Frontier Defense Joint Determination 2013 | Counterterrorism | Kyrgyzstan |
| | -Sharp Knife 2013 | Counterterrorism | Indonesia |
| | -Hand in Hand 2013 | Counterterrorism | India |
| | -Strike 2013 | Counterterrorism | Thailand |
| 2014 | -Peace Mission 2014 | Counterterrorism | Russia |
| | -Sharp Knife 2014 | Counterterrorism | Indonesia |
| | -Hand in Hand 2014 | Counterterrorism | India |
| | -Komodo | Naval Diplomacy | Hosted by Indonesia |
| | -RIMPAC | Multilateral Naval Exercises | Hosted by the United States (22 countries participated) |
| | -Maritime Cooperation 2014 | Maritime | Russia |
| | -Unnamed | Counter-Piracy | United States |
| | -Unnamed | Maritime (Search and Rescue) & Communications | United States |
| | -Group Sail | Maritime (Search and Rescue); Communications; Counter Piracy | United States, Singapore, Brunei |
| | -Cobra Gold | HA/DR | United States, Thailand |
| | -Unnamed | Communications | United States |
| | -Unnamed | Counterterrorism | Russia |
| | -Border Defense Cooperation 2014 | Counterterrorism | Russia |
| | -Cooperation 2014 | Infantry Exercise | Singapore |

## **APPENDIX II:** CHINA AND TAIWAN FORCES DATA

| Taiwan Strait Military Balance, Ground Forces | | | |
|---|---|---|---|
| | **China** | | **Taiwan** |
| | ***Total*** | ***Taiwan Strait Area*** | ***Total*** |
| ***Personnel (Active)*** | 1.25 million | 400,000 | 130,000 |
| ***Group Armies*** | 18 | 8 | 3 |
| ***Infantry Divisions*** | 12 | 3 | 0 |
| ***Infantry Brigades*** | 23 | 6 | 8 |
| ***Mechanized Infantry Divisions*** | 7 | 3 | 0 |
| ***Mechanized Infantry Brigades*** | 25 | 7 | 3 |
| ***Armor Divisions*** | 1 | 0 | 0 |
| ***Armor Brigades*** | 17 | 8 | 4 |
| ***Army Aviation Brigades and Regiments*** | 11 | 6 | 3 |
| ***Artillery Brigades*** | 22 | 10 | 5 |
| ***Airborne Divisions*** | 3 | 3 | 0 |
| ***Amphibious Divisions*** | 2 | 2 | 0 |
| ***Amphibious Brigades*** | 3 | 3 | 3 |
| ***Tanks*** | 6,947 | 2,758 | 1,100 |
| ***Artillery Pieces*** | 7,953 | 3,891 | 1,600 |

**Note:** People's Liberation Army (PLA) active Army units are organized into Group Armies. Infantry, armor, artillery, and army aviation units are organized into a combination of divisions and brigades deployed throughout the PLA's seven military regions (MR). The ground forces of China also include the two marine brigades under the Navy and the 15th Airborne Army of the Air Force. A significant portion of these assets are deployed in the Taiwan Strait area, specifically the Nanjing, Guangzhou, and Jinan MRs. Taiwan has seven Defense Commands, three of which have Field Armies. Each Army contains an Artillery Command roughly equivalent to a brigade plus.

| Taiwan Strait Military Balance, Naval Forces | | | |
|---|---|---|---|
| | China | | Taiwan |
| | ***Total*** | ***East and South Sea Fleets*** | ***Total*** |
| ***Aircraft Carriers*** | 1 | 0 | 0 |
| ***Destroyers*** | 21 | 14 | 4 |
| ***Frigates*** | 52 | 42 | 22 |
| ***Corvettes*** | 15 | 11 | 1 |
| ***Tank Landing Ships/ Amphibious Transport Dock*** | 29 | 26 | 12 |
| ***Medium Landing Ships*** | 28 | 21 | 4 |
| ***Diesel Attack Submarines*** | 53 | 34 | 4 |
| ***Nuclear Attack Submarines*** | 5 | 2 | 0 |
| ***Coastal Patrol (Missile)*** | 86 | 68 | 45 |
| **Note:** The PLA Navy has the largest force of principal combatants, submarines, and amphibious warfare ships in Asia. In the event of a major Taiwan conflict, the East and South Sea Fleets would be expected to participate in direct action against the Taiwan Navy. The North Sea Fleet would be responsible primarily for protecting Beijing and the northern coast, but could provide mission-critical assets to support other fleets. | | | |

| Taiwan Strait Military Balance, Air Forces | | | |
|---|---|---|---|
| **China** | | | **Taiwan** |
| ***Aircraft*** | ***Total*** | ***Within range of Taiwan*** | ***Total*** |
| ***Fighters*** | 1,700 | 130 | 388 |
| ***Bombers/Attack*** | 400 | 200 | 22 |
| ***Transport*** | 475 | 150 | 21 |
| ***Special Mission Aircraft*** | 115 | 75 | 10 |

***Note:*** The PLA Air Force and Navy have approximately 2,100 operational combat aircraft. These consist of air defense and multi-role fighters, ground attack aircraft, fighter-bombers, and bombers. An additional 1,450 older fighters, bombers, and trainers are employed for training and research and development. The two air arms also possess approximately 475 transports and more than 100 surveillance and reconnaissance aircraft with intelligence, surface search, and airborne early warning capabilities. We expect the PLA Air Force would supplement its military transports with civilian aircraft in a combat scenario. The majority of PLA Air Force and PLA Navy aircraft are based in the eastern half of the country. Currently, 330 aircraft could conduct combat operations against Taiwan without refueling. However, this number could be significantly increased through any combination of aircraft forward deployment, decreased ordnance loads, or altered mission profiles.




**CHINA: Group Armies (GA) Primary Missions**

**Shenyang MR**
16 GA – Defensive, Offensive CT
39 GA – RRU, Offensive MF
40 GA – Defensive, Offensive CT

**Beijing MR**
65 GA – Defensive
38 GA – RRU, Offensive MF
27 GA – Defensive

**Jinan MR**
26 GA – Offensive CT, Defensive
20 GA – Offensive CT, Defensive
54 GA – Offensive MF, Amphibious

**Nanjing MR**
1 GA – Amphibious, Offensive CT
12 GA – Amphibious, Offensive CT
31 GA – Amphibious, Offensive CT

**Guangzhou MR**
15 Airborne – RRU, Offensive MF
41 GA – Offensive CT, Amphibious
42 GA – Amphibious

**Chengdu MR**
13 GA – Defensive, Offensive CT
14 GA – Defensive, Offensive CT

**Lanzhou MR**
47 GA – Defensive, Offensive CT
21 GA – Offensive MF, Defensive

MR – Military Region
MF – Mobile Force
RRU – Rapid Reaction Unit
CT – Complex Terrain (mountain, urban, jungle, etc.)


Russia
Lake Baikal
Mongolia
Lanzhou
Shenyang MRAF HQ
3x Fighter Division
1x Ground Attack Division
Shenyang
PLA Air Force HQ
2x Transport Division
Beijing MRAF HQ
3x Fighter Division
Beijing
Jinan MRAF HQ
2x Fighter Division
1x Ground Attack Division
North Korea
South Korea
Japan
Lanzhou MRAF HQ
2x Fighter Division
1x Bomber Division
China
Jinan
North Sea Fleet HQ
1x Fighter Division
1x Fighter Bomber Division
Nanjing MRAF HQ
3x Fighter Division
1x Ground Attack Division
1x Bomber Division
Chengdu
Chengdu MRAF HQ
2x Fighter Division
1x Transport Division
Nanjing
East Sea Fleet HQ
1x Fighter Division
1x Fighter Bomber Division
Guangzhou
East China Sea
Taiwan
Guangzhou MRAF HQ
4x Fighter Division
1x Bomber Division
Burma
Vietnam
Laos
South Sea Fleet HQ
2x Fighter Division
Thailand
Philippines
South China Sea
China
Capital
Military Region Air Force HQ
PLA Navy Fleet Air Force HQ
Fighter/Ground Attack Division
Navy Fighter/Fighter Bomber Division
Bomber Division
Transport Division
Military Region
NAMES AND BOUNDARY REPRESENTATION ARE NOT NECESSARILY AUTHORITATIVE
0 500
Kilometers
0 500
Miles


1st Group Army
Unit ID
1st Group Army
Air Defense Brigade
Amphibious Mechanized Division
Armor Brigade
Artillery Division
Motorized Infantry Brigade
12th Group Army
Unit ID
12th Group Army
Air Defense Brigade
Armor Brigade
Artillery Brigade
Mechanized Infantry Brigade
Motorized Infantry Brigade
31st Group Army
Unit ID
31st Group Army
Air Defense Brigade
Armor Brigade
Artillery Brigade
Motorized Infantry Brigade
Motorized Infantry Division
Missiles
Missile Base
Missile Unit
Naval
Unit ID
East Sea Fleet
Composite Flotilla
Destroyer Flotilla
Frigate Flotilla
Landing Ship Flotilla
Submarine Flotilla
Air
Unit ID
Nanjing MRAF
Bomber Division
Fighter Division
SAM Brigade
JINAN
SOUTH KOREA
CHINA
NANJING
GUANGZHOU
TAIWAN
JAPAN
NAMES AND BOUNDARY REPRESENTATION ARE NOT NECESSARILY AUTHORITATIVE


41st Group Army
Unit ID
Group Army HQ
Armor Brigade
Mechanized Infantry Division
Motorized Infantry Division
UI Artillery Brigade
Air Defense Brigade
42nd Group Army
Unit ID
Group Army HQ
Armor Brigade
Amphibious Mechanized Infantry Division
Motorized Infantry Division
Artillery Division
Air Defense Brigade
Marines
Unit ID
Marine Brigade
15 Airborne Corps HQ
Airborne Corps HQ
Missiles
Missile Base
Missile Unit
Naval
Unit ID
South Sea Fleet HQ
Operational Support Flotilla
Submarine Base Yalong
Composite Flotilla
Destroyer Flotilla
Landing Ship Flotilla
Submarine Flotilla
Air
Unit ID
Air Force HQ
AF Command Post
LANZHOU
JINAN
NANJING
CHENGDU
CHINA
GUANGZHOU
East China Sea
Taiwan Strait
TAIWAN
Macau (China)
Hong Kong (SAR)
VIETNAM
South China Sea
Gulf of Tonkin
Hainan
PHILIPPINES
THAILAND
LAOS
Scale 1:7,800,000
Miles
Nautical Miles
Projection: Lambert Conformal Conic; Datum: WGS 1984; Source: Edit source data info
NAMES AND BOUNDARY REPRESENTATION ARE NOT NECESSARILY AUTHORITATIVE

# **APPENDIX III:** ADDITIONAL MAPS AND CHARTS

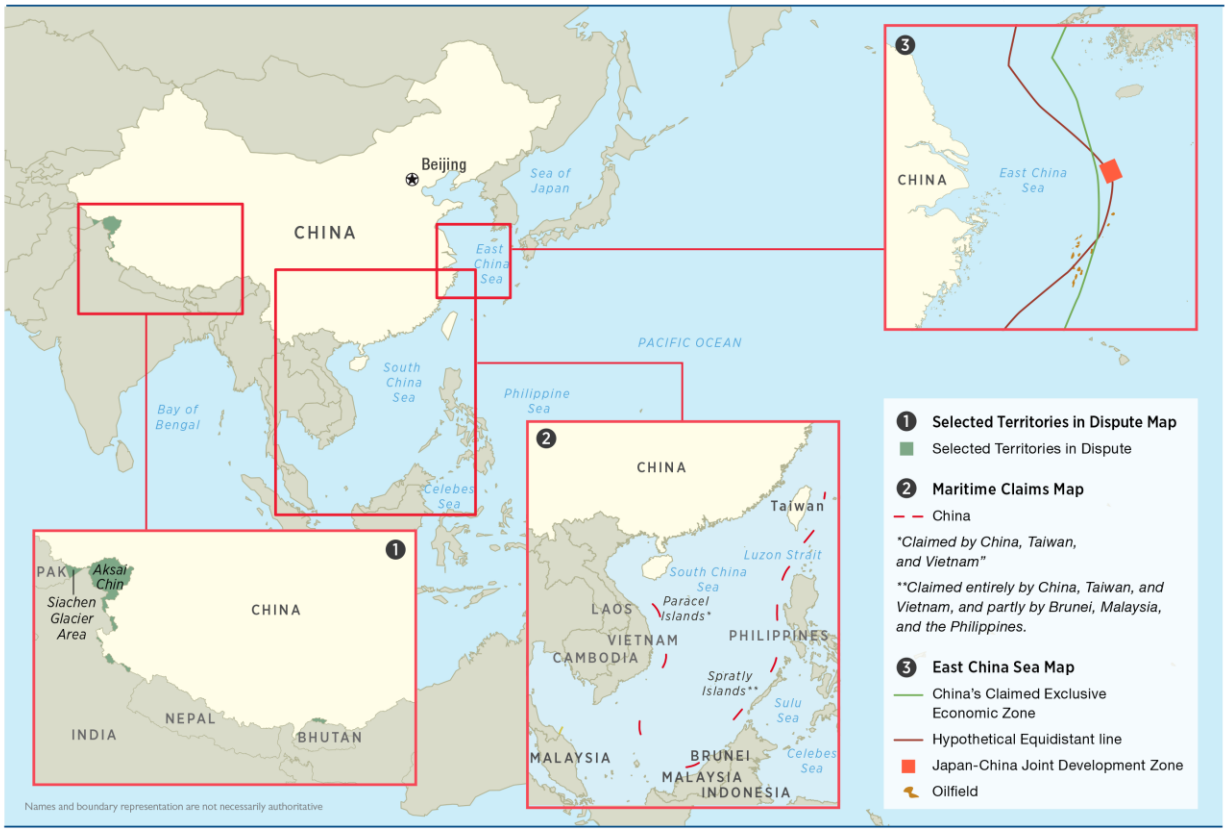



**Figure 1. China's Claims.**

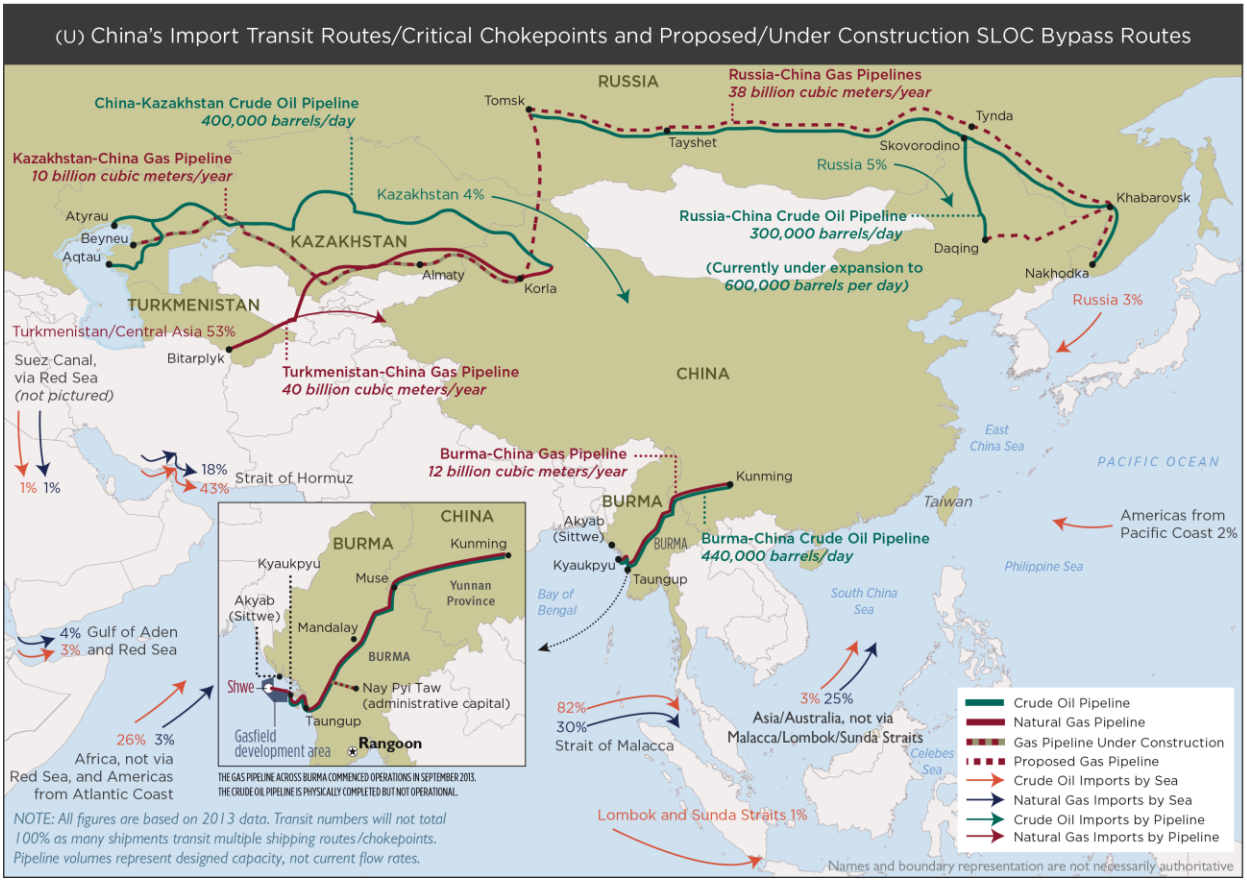



**Figure 2. China's Import Transit Routes.**

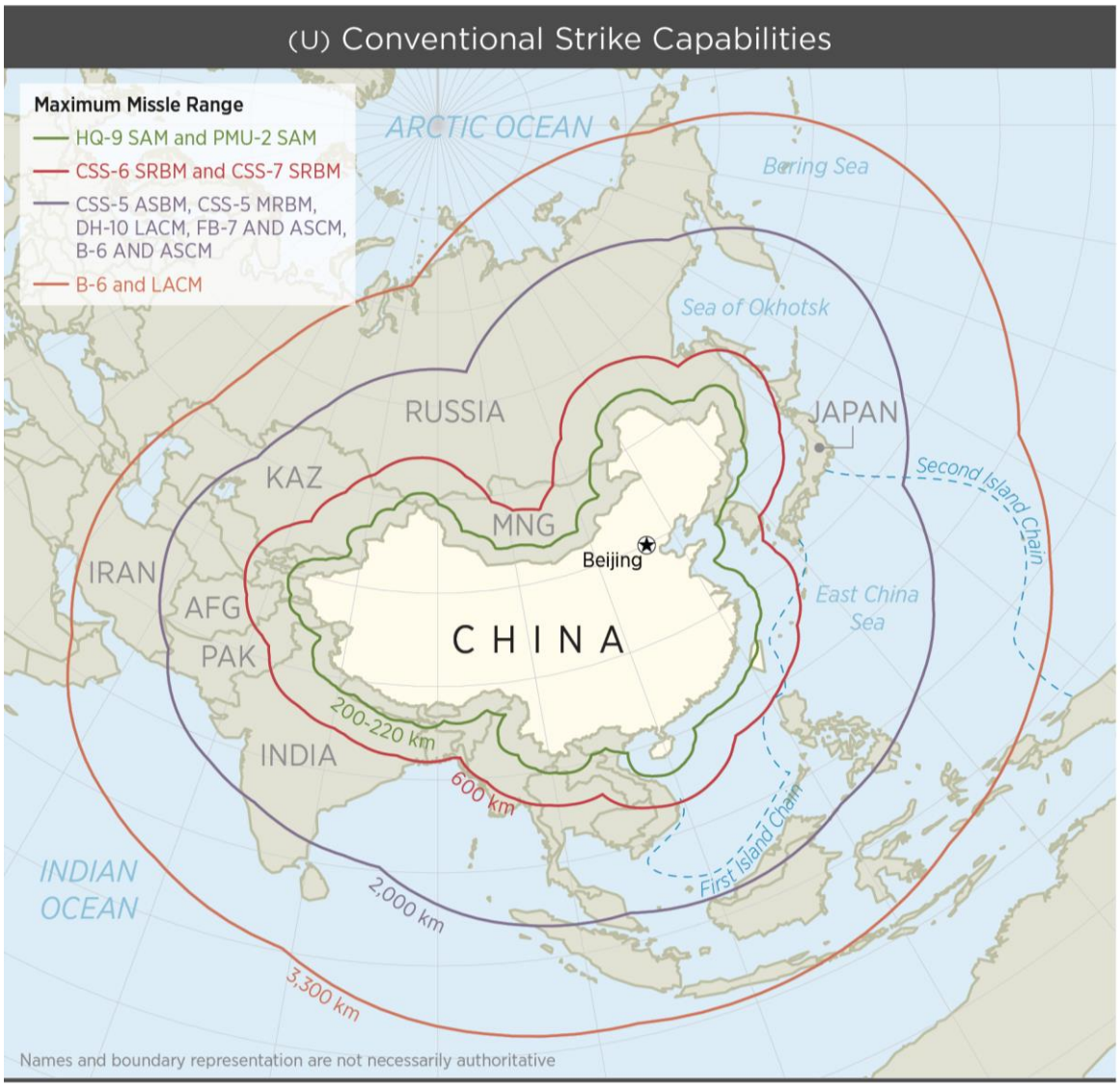



**Figure 3. Conventional Strike Capabilities.**

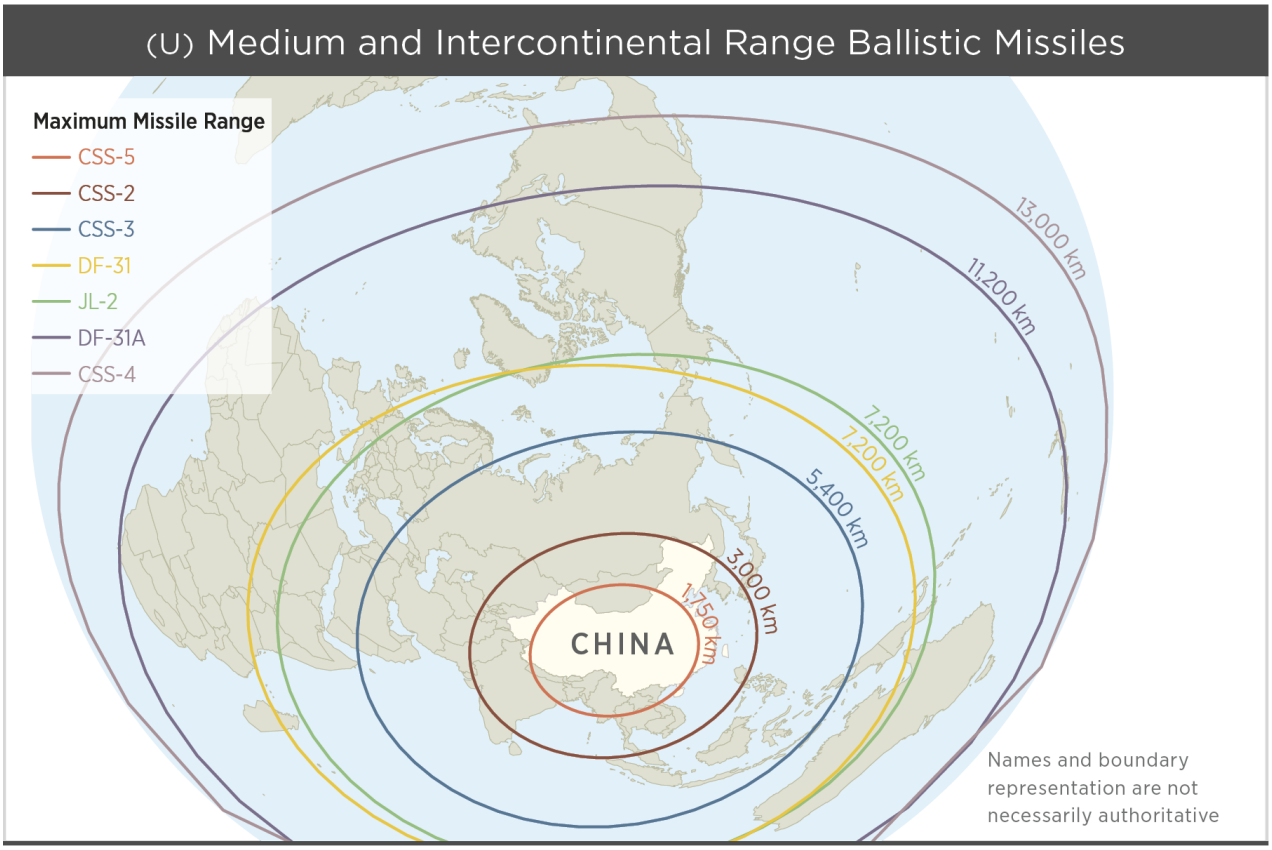



**Figure 4. Medium and Intercontinental Range Ballistic Missiles.**

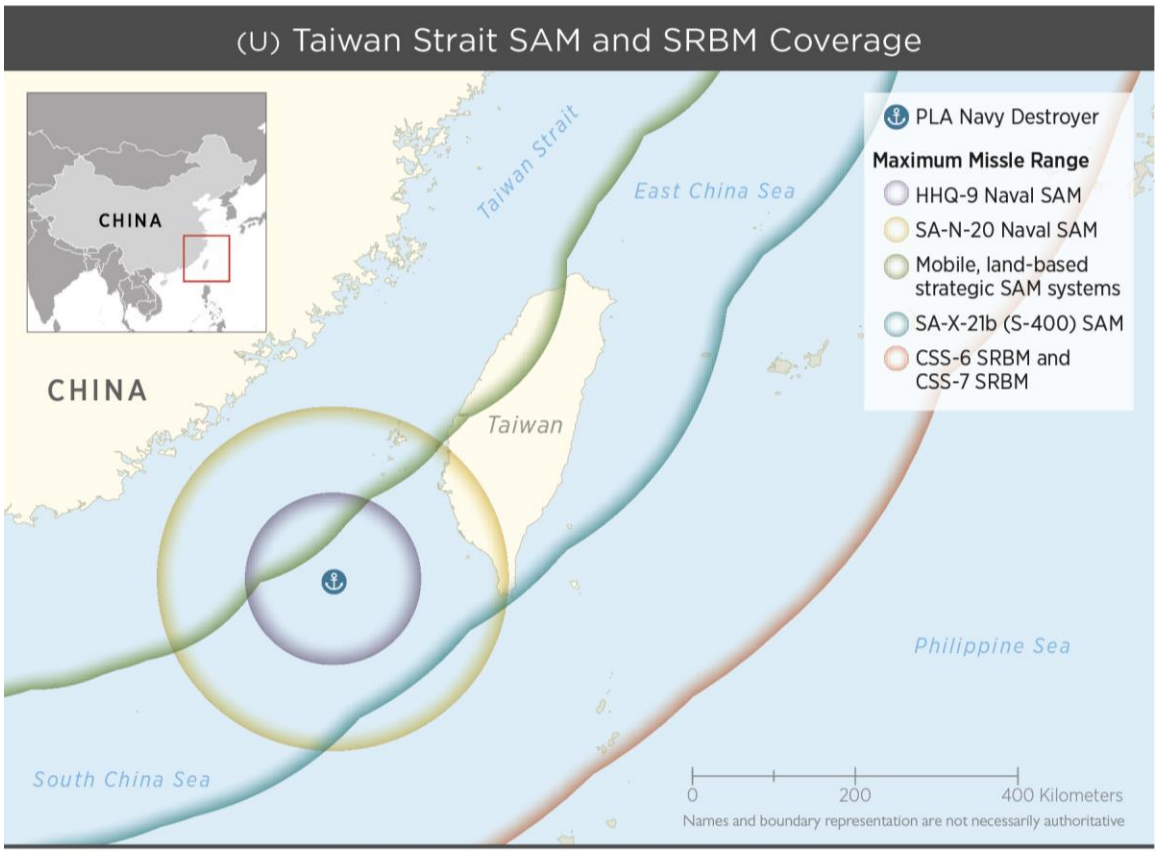



**Figure 5. Taiwan Strait SAM and SRBM Coverage.**