ANNUAL REPORT TO CONGRESS

Military and Security Developments Involving the People's Republic of China 2011

Office of the Secretary of Defense

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Military and Security Developments Involving the People's Republic of China
2011

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."

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EXECUTIVE SUMMARY

China's rise as a major international actor is likely to stand out as a defining feature of the strategic landscape of the early 21st century. Sustained economic development has raised the standard of living for China's citizens and elevated China's international profile. This development, coupled with an expanding science and technology base, has also facilitated a comprehensive and ongoing military modernization program. The United States welcomes a strong, prosperous, and successful China that reinforces international rules and norms and enhances security and peace both regionally and globally.

China is steadily assuming new roles and responsibilities in the international community. In 2004, Chinese President Hu Jintao articulated new guidance for the People's Liberation Army (PLA), including missions extending beyond China's immediate territorial interests. This catalyzed China's growing involvement in international peacekeeping efforts, counter-piracy operations, humanitarian assistance and disaster relief, and the evacuation of Chinese citizens from overseas trouble spots. China's 2010 Defense White Paper asserts that China's "future and destiny have never been more closely connected with those of the international community." Nonetheless, China's modernized military could be put to use in ways that increase China's ability to gain diplomatic advantage or resolve disputes in its favor.

Although the PLA is contending with a growing array of missions, Taiwan remains its "main strategic direction." China continued modernizing its military in 2010, with a focus on Taiwan contingencies, even as cross-Strait relations improved. The PLA seeks the capability to deter Taiwan independence and influence Taiwan to settle the dispute on Beijing's terms. In pursuit of this objective, Beijing is developing capabilities intended to deter, delay, or deny possible U.S. support for the island in the event of conflict. The balance of cross-Strait military forces and capabilities continues to shift in the mainland's favor.

Over the past decade, China's military has benefitted from robust investment in modern hardware and technology. Many modern systems have reached maturity and others will become operational in the next few years. Following this period of ambitious acquisition, the decade from 2011 through 2020 will prove critical to the PLA as it attempts to integrate many new and complex platforms, and to adopt modern operational concepts, including joint operations and network-centric warfare.

China has made modest, but incremental, improvements in the transparency of its military and security affairs. However, there remains uncertainty about how China will use its growing capabilities.

The United States recognizes and welcomes PRC contributions that support a safe and secure global environment. China's steady integration into the global economy creates new incentives for partnership and cooperation, particularly in the maritime domain. Although China's expanding military capabilities can facilitate cooperation in pursuit of shared objectives, they can also increase the risk of misunderstanding and miscalculation. Strengthening our military-to-military relationship is a critical part of our strategy to shape China's choices as we seek to capitalize on opportunities for cooperation while mitigating risks. To support this strategy, the United States must continue monitoring PRC force development and strategy. In concert with our friends and Allies, the United States will also continue adapting our forces, posture, and operational concepts to maintain a stable and secure East Asian environment.

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Glossary of Acronyms

AAV: Amphibious Assault Vehicle

AEW&C: Airborne Early Warning and Control

APCSS: Asia Pacific Center for Security Studies

ASAT: Anti-Satellite

ASBM: Anti-Ship Ballistic Missile

ASCM: Anti-Ship Cruise Missile

bcm: billion cubic meters

b/d: barrels per day

C4ISR: Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance

CCP: Chinese Communist Party

CMC: Central Military Commission

CNO: Computer Network Operations

COMSAT: Communications Satellite

CONUS: Continental United States

DCT: Defense Consultative Talks

DDG: Guided-Missile Destroyer

DPCT: Defense Policy Coordination Talks

DSS: Defense Security Service

DSTL: Developing Sciences and Technologies List

EEZ: Exclusive Economic Zone

EU: European Union

FAO: Foreign Affairs Office

FFG: Guided-Missile Frigate

GDP: Gross Domestic Product

GPS: Global Positioning System

HA/DR: Humanitarian Assistance/Disaster Relief

ICBM: Intercontinental-Range Ballistic Missile

IJO: Integrated Joint Operations

LACM: Land Attack Cruise Missile

MIRV: Multiple Independently Targeted Re-entry Vehicles

MMCA: Military Maritime Consultative Agreement

MND: Ministry of National Defense

MR: Military Region

MRBM: Medium-Range Ballistic Missile

MRL: Multiple Rocket Launcher

NCO: Non-Commissioned Officer

NDU: National Defense University

NFU: No First Use

OMTE: Outline of Military Training and Evaluation

OTH: Over-the-Horizon

PLA: People's Liberation Army

PLAAF: People's Liberation Army Air Force

PRC: People's Republic of China

R&D: Research and Development

S&ED: Strategic and Economic Dialogue

SAM: Surface-to-Air Missile

SCO: Shanghai Cooperation Organization

SLBM: Submarine-Launched Ballistic Missile

SLOC: Sea Lines of Communication

SRBM: Short-Range Ballistic Missile

SS: Diesel-Electric Attack Submarine

SSBN: Nuclear-Powered Ballistic Missile Submarine

SSN: Nuclear-Powered Attack Submarine

UAV: Unmanned Aerial Vehicle

UCAV: Unmanned Combat Aerial Vehicle

UN: United Nations

UNCLOS: UN Convention on the Law of the Sea

USCG: United States Coast Guard

USMC: United States Marine Corps

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CHAPTER ONE: ANNUAL UPDATE

"In the next five years, our economy and society will develop faster, boosting comprehensive national power. The developments will provide an even more stable material base to our defense and military buildup."

– PRC Defense Minster Liang Guanglie

Several significant developments in China over the past year relate to the questions Congress posed in Section 1246 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84).

CHINA'S CHALLENGES AND OPPORTUNITIES IN 2010

The government of China remained focused on maintaining economic development and enhancing China's security interests in 2010. The Chinese Communist Party (CCP) has built its legitimacy on the promise of economic growth, stability, and national unity. To ensure its position, the CCP closely monitors potential sources of domestic unrest, from unemployment and rising income disparities to pro-democracy movements and ethnic tensions. Additionally, Beijing is seeking to balance a more confident assertion of its growing interests in the international community with a desire to avoid generating opposition and countervailing responses from regional and major powers. An example of this could be seen in Beijing's recalibrated rhetorical approach to regional territorial disputes such as the South China Sea following the June 2010 Association of Southeast Asian Nations Regional Forum (ARF).

The 11th Five Year Plan concluded in 2010 and was marked by new milestones in PLA force development and technology acquisition. Motivated by expanding economic and security interests, the PLA is now venturing into the global maritime domain, a sphere long dominated by the U.S. Navy. Relations with Taiwan have continued to improve, but the PLA shows no sign of slowing its efforts to develop plans and capabilities for a cross-Strait contingency.

Much of the PLA's success over the next decade will be determined by how effectively it integrates emerging capabilities and platforms into the force. By most accounts, the PLA is on track to achieve its goal of building a modern, regionally-focused military by 2020.

In tandem with the PLA's improved capacities for regional military operations, PRC officials in recent years have emphasized China's sovereignty and territorial interests with greater frequency. Citing a violation of these "core interests," the PLA suspended military-to-military relations with the United States in January 2010, following U.S. approval of arms sales to Taiwan.

DEVELOPMENTS IN CHINA'S NATIONAL SECURITY LEADERSHIP

Vice President Xi Jinping became a vice chairman of the CCP Central Military Commission (CMC) at the 5th Plenum of the 17th Central Committee in October 2010. Based on historical precedent, this move could be the penultimate step to Xi becoming the General Secretary of the CCP and Chairman of the Central Military Commission (CMC). During the leadership transition process that is expected to unfold around the 18th Party Congress in the fall of 2012, it is not clear if President Hu Jintao will relinquish

the Party General Secretary and CMC Chairman positions, or if he will follow the precedent set by Jiang Zemin in 2002 and retain the CMC Chairmanship for a number of months, or even years, to facilitate the power transition.

DEVELOPMENTS IN THE SECURITY SITUATION IN THE TAIWAN STRAIT

Since the election in Taiwan of President Ma Ying-jeou in March 2008, Beijing and Taipei have made significant progress in improving cross-Strait relations. Both Beijing and Taipei have emphasized expanding economic and cultural ties as a means of reducing tension and sustaining the current positive cross-Strait atmosphere.

Beijing and Taipei signed the Economic Cooperation Framework Agreement (ECFA) in 2010. Beijing has at times demonstrated flexibility on the issue of Taiwan's participation in international forums, but has also continued to pressure players in the international community to restrict this participation.

Despite the warming of cross-Strait ties, China continued its military modernization in 2010, including specific efforts to provide a credible range of military options in a Taiwan contingency. In the current decade to 2020, the PLA is likely to steadily expand its military options for Taiwan, including those to deter, delay, or deny third party intervention.

DEVELOPMENTS IN THE SIZE, LOCATION, AND CAPABILITIES OF PRC MILITARY FORCES

China's long-term, comprehensive military modernization is improving the PLA's capacity to conduct high-intensity, regional military operations, including "anti-access and area denial" (A2AD) operations. The terms "anti-access and area denial" refer to capabilities that could be employed to deter or counter adversary forces from deploying to, or operating within, a defined space. Consistent with a near-term focus on preparing for Taiwan Strait contingencies, China continues to base many of its most advanced systems in the military regions (MRs) opposite Taiwan. Although these capabilities could be employed for a variety of regional crisis or conflict scenarios, China has made less progress on capabilities that extend global reach or power projection. Outside of peacetime counter-piracy missions, for example, China's Navy has little operational experience beyond regional waters. Although the PLA's new roles and missions in the international domain reflect China's expanding set of interests, regional contingencies continue to dominate resources and planning.

Ballistic and Cruise Missiles. China has prioritized land-based ballistic and cruise missile programs. 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 PLA is acquiring large numbers of highly accurate cruise missiles, many of which have ranges in excess of 185 km. This includes the domestically-produced, ground-launched DH-10 land-attack cruise missile (LACM); the domestically produced ground- and ship-launched YJ-62 anti-ship cruise missile (ASCM); the Russian SS-N-22/SUNBURN supersonic ASCM, which is fitted on China's SOVREMENNY-class DDGs acquired from Russia; and, the Russian SS-N-27B/SIZZLER supersonic ASCM on China's Russian-built, KILO-class diesel-electric attack submarines.
- By December 2010, the PLA had deployed between 1,000 and 1,200 short-range ballistic missiles (SRBM) to units opposite Taiwan. To improve the lethality of this force, the PLA is introducing variants of missiles with improved ranges, accuracies, and payloads.

- China is developing an anti-ship ballistic missile (ASBM) based on a variant of the CSS-5 medium-range ballistic missile (MRBM). Known as the DF-21D, this missile is intended to provide the PLA the capability to attack large ships, including aircraft carriers, in the western Pacific Ocean. The DF-21D has a range exceeding 1,500 km and is armed with a maneuverable warhead.
- China is modernizing its nuclear forces by adding more survivable delivery systems. In recent years, the road mobile, solid propellant CSS-10 Mod 1 and CSS-10 Mod 2 (DF-31 and DF-31A) intercontinental-range ballistic missiles (ICBMs) have entered service. The CSS-10 Mod 2, with a range in excess of 11,200 km, can reach most locations within the continental United States.
- China may also be developing a new road-mobile ICBM, possibly capable of carrying a multiple independently targetable re-entry vehicle (MIRV).

Naval Forces. Since the 1990s, the PLA Navy has rapidly transformed from a large fleet of low-capability, single-mission platforms, to a leaner force equipped with more modern, multi-mission platforms. In contrast to the fleet just a decade ago, many PLA Navy combatants are equipped with advanced air-defense systems and modern ASCMs, with ranges in excess of 185 km. These capabilities not only increase the lethality of PLA Navy platforms, particularly in the area of anti-surface warfare (ASuW), but also enable them to operate beyond the range of land-based air defenses.

The PLA Navy possesses some 75 principal surface combatants, more than 60 submarines, 55 medium and large amphibious ships, and roughly 85 missile-equipped small combatants. The PLA has now completed construction of a major naval base at Yulin, on the southernmost tip of Hainan Island. The base is large enough to accommodate a mix of attack and ballistic missile submarines and advanced surface combatants, including aircraft carriers. Submarine tunnel facilities at the base could also enable deployments from this facility with reduced risk of detection.

- China's aircraft carrier research and development program includes renovation of the ex-VARYAG, which could begin sea trials in 2011, although without aircraft. It will likely serve initially as a training and evaluation platform, and eventually offer a limited operational capability. China could begin construction of a fully indigenous carrier in 2011, which could achieve operational capability after 2015. China likely will build multiple aircraft carriers with support ships over the next decade.
- China currently has a land-based training program for carrier pilots; however, it will still take several additional years for China to achieve a minimal level of combat capability on an aircraft carrier.
- The PLA Navy is improving its over-the-horizon (OTH) targeting capability with sky wave and surface wave OTH radars. In combination with early-warning aircraft, unmanned aerial vehicles (UAVs), and other surveillance and reconnaissance equipment, the sky wave OTH radar allows the PRC to carry out surveillance and reconnaissance over the western Pacific. The OTH radars can be used in conjunction with reconnaissance satellites to locate targets at great distances from the PRC, thereby supporting long-range precision strikes, including employment of ASBMs.
- China continues to produce a new class of nuclear-powered ballistic missile submarine (SSBN). JIN-class (Type 094) SSBNs will eventually carry the JL-2 submarine-launched ballistic missile with an estimated range of some 7,400 km. The JIN and the JL-2 will give the PLA Navy its first credible sea-based nuclear capability. Although DoD initially

forecast the JL-2 would reach IOC by 2010, the program has faced repeated delays.

- China has expanded its force of nuclear-powered attack submarines (SSN). Two second-generation SHANG-class (Type 093) SSNs are already in service and as many as five third-generation Type 095 SSNs will be added in the coming years. When complete, the Type 095 will incorporate better quieting technology, improving its capability to conduct a range of missions from surveillance to the interdiction of surface vessels with torpedoes and ASCMs.
- The current mainstay modern diesel powered attack submarines (SS) in the PLA Navy's submarine force are the 13 SONG-class (Type 039) units. Each can carry the YJ-82 ASCM. The follow-on to the SONG is the YUAN-class SS; as many as four of which are already in service. The YUAN-class SS might also include an air-independent power system. The SONG, YUAN, SHANG and the still-to-be-deployed Type 095 all will be capable of launching the long-range CH-SS-NX-13 ASCM, once the missile completes development and testing.
- China has deployed some 60 of its new HOUBEI-class (Type 022) wave-piercing catamaran hull missile patrol boats. Each boat can carry up to eight YJ-83 ASCMs. These ships have increased the PLA Navy's littoral warfare capabilities.
- The PLA Navy has acquired a new generation of domestically produced surface combatants. These include at least two LUYANG II-class (Type 052C) DDGs fitted with the indigenous HHQ-9 long-range surface-to-air missile (SAM) with additional hulls under construction; two LUZHOU-class (Type 051C) DDGs equipped with the Russian SA-N-20 long-range SAM; and as many as eight JIANGKAI II-class (Type 054A) guided-missile frigates (FFG) fitted with the medium-range HHQ-16 vertically launched naval SAM. These ships significantly improve the PLA Navy's area air defense capability, which will be critical as the PLA Navy expands its operations into "distant seas," beyond the range of shore-based air defense.

Air and Air Defense Forces. China bases 490 combat aircraft within unrefueled operational range of Taiwan and has the airfield capacity to expand that number by hundreds. Newer and more advanced aircraft make up a growing percentage of the inventory.

- The January 2011 flight test of China's next generation fighter prototype, the J-20, highlights China's ambition to produce a fighter aircraft that incorporates stealth attributes, advanced avionics, and super-cruise capable engines over the next several years.
- China is upgrading its B-6 bomber fleet (originally adapted from the Soviet Tu-16) with a new, longer-range variant that will be armed with a new long-range cruise missile.
- The PLA Air Force has continued expanding its inventory of long-range, advanced SAM systems and now possesses one of the largest such forces in the world. Over the past five years, China has acquired multiple SA-20 PMU2 battalions, the most advanced SAM system Russia exports. It has also introduced the indigenously designed HQ-9.
- China's aviation industry is developing several types of airborne early warning and control system (AWACS) aircraft. These include the KJ-200, based on the Y-8 airframe, for AWACS as well as intelligence collection and maritime surveillance, and the KJ-2000, based on a modified Russian IL-76 airframe.

Ground Forces. The PLA has about 1.25 million ground force personnel,

approximately 400,000 of whom are based in the three military regions (MRs) opposite Taiwan. China continues to gradually modernize its large ground force. Much of the observed upgrade activity has occurred in units with the potential to be involved in a Taiwan contingency. Examples of ground unit modernization include the Type 99 third-generation main battle tank, a new-generation amphibious assault vehicle, and a series of multiple rocket launch systems.

In October 2010, the PLA conducted its first Group Army-level exercise, which it called "MISSION ACTION (SHIMING XINGDONG)." The primary participants from the Beijing, Lanzhou, and Chengdu Military Regions practiced maneuver, ground-air coordination, and long-distance mobilization via military and commercial assets as they transited between MRs. Given that these MRs are located along China's land borders, the exercise scenario was likely based on border conflict scenarios. In addition to providing large-scale mobility and joint experience, the exercise allowed PLA command staff to test their ability to plan and execute a large joint campaign while practicing communication between command elements across dispersed forces. This skill is critical to responding to crises along China's periphery.

DEVELOPMENTS IN CHINA'S SPACE AND CYBER CAPABILITIES

Space and Counterspace Capabilities. In 2010, China conducted a national record 15 space launches. It also expanded its space-based intelligence, surveillance, reconnaissance, navigation, meteorological, and communications satellite constellations. In parallel, China is developing a multi-dimensional program to improve its capabilities to limit or prevent the use of space-based assets by adversaries during times of crisis or conflict.

- During 2010, Beijing launched five BeiDou navigation satellites. China plans to complete a regional network by 2012 and a global network by 2020.
- China launched nine new remote sensing satellites in 2010, which can perform both civil and military applications.
- In 2010, Beijing also launched two communications satellites (one military and one civil), a meteorological satellite, two experimental small satellites, and its second lunar mission during the year.
- China continues to develop the Long March V (LM-V) rocket, which is intended to lift heavy payloads into space. LM-V will more than double the size of the Low Earth Orbit and Geosynchronous Orbit payloads China is capable of placing into orbit. To support these rockets, China began constructing the Wenchang Satellite Launch Center in 2008. Located on Hainan Island, this launch facility is expected to be complete by 2012, with the initial LM-V launch scheduled for 2014.

Cyberwarfare Capabilities. In 2010, numerous computer systems around the world, including those owned by the U.S. Government, were the target of intrusions, some of which appear to have originated within the PRC. These intrusions were focused on exfiltrating information. Although this alone is a serious concern, the accesses and skills required for these intrusions are similar to those necessary to conduct computer network attacks. China's 2010 Defense White Paper notes China's own concern over foreign cyberwarfare efforts and highlighted the importance of cyber-security in China's national defense.

Cyberwarfare capabilities could serve PRC military operations in three key areas. First and foremost, they allow data collection through exfiltration. 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 capabilities for cyberwarfare is consistent with authoritative PLA military writings. Two military doctrinal writings, *Science of Strategy*, and *Science of Campaigns* identify information warfare (IW) as integral to achieving information superiority and an effective means for countering a stronger foe. Although neither document identifies the specific criteria for employing computer network attack against an adversary, both advocate developing capabilities to compete in this medium.

The Science of Strategy and *Science of Campaigns* detail the effectiveness of IW and computer network operations in conflicts and advocate targeting adversary command and control and logistics networks to impact their ability to operate during the early stages of conflict. As the *Science of Strategy* explains, "In the information war, the command and control system is the heart of information collection, control, and application on the battlefield. It is also the nerve center of the entire battlefield."

In parallel with its military preparations, China has increased diplomatic engagement and advocacy in multilateral and international forums where cyber issues are discussed and debated. Beijing's agenda is frequently in line with the Russian Federation's efforts to promote more international control over cyber activities. China has not yet agreed with the U.S. position that existing mechanisms, such as International Humanitarian Law and the Law of Armed Conflict, apply in cyberspace. China's thinking in this area is evolving as it becomes more engaged.

DEVELOPMENTS IN CHINA'S DEFENSE TECHNOLOGY ACQUISITION

China relies on foreign technology, acquisition of key dual-use components, and focused indigenous research and development (R&D) to advance military modernization. The PRC also utilizes a large, well-organized network of enterprises, defense factories, affiliated research institutes, and computer network operations to facilitate the collection of sensitive information and export-controlled technology, as well as basic research and science that supports U.S. defense system modernization.

Many of the organizations comprising China's military-industrial complex have both military and civilian research and development functions. This network of government-affiliated companies and research institutes often enables the PLA to access sensitive and dual-use technologies or knowledgeable experts under the guise of civilian research and development. The enterprises and institutes accomplish this through technology conferences and symposia; legitimate contracts and joint commercial ventures; partnerships with foreign firms; and joint development of specific technologies.

In the case of key national security technologies, controlled equipment, and other materials not readily obtainable through commercial means or academia, the PRC has utilized its intelligence services and employed other illicit approaches that violate U.S. laws and export controls.

- In August 2010, Noshir Gowadia was convicted of providing the PRC with classified U.S. defense technology. Gowadia assisted the PRC in developing a low-signature cruise missile exhaust system capable of rendering a cruise missile resistant to detection by infrared missiles.
- In September 2010, Chi Tong Kuok was convicted for conspiracy to illegally export U.S. military encryption technology and smuggle it to Macau and Hong Kong. The relevant technology included encryption, communications equipment, and Global Positioning System (GPS) equipment used by U.S. and NATO forces.

CHALLENGES TO TAIWAN'S DETERRENT FORCES

There were no armed incidents in the vicinity of the Taiwan Strait in 2010 and the overall situation remained stable. However, the PRC's military modernization and the deployment of advanced capabilities opposite the island have not eased, and the balance of military force continues to shift in Beijing's favor.

Taiwan President Ma Ying-jeou's defense reforms designed to streamline and professionalize the military continue, but budget shortfalls and escalating costs will lengthen the time necessary for implementation.

Taiwan plans to cut its military force to 215,000 troops and transition to an all-volunteer military by 2015, but recruitment and cost challenges may require a reevaluation of the scope or implementation schedule. It will also reorganize several support commands and looks to civilianize its key defense research and development facilities to improve efficiency and productivity.

Consistent with the provisions of the Taiwan Relations Act, Public Law 96-8 (1979), the United States continues to make available defense articles and defense services to enable Taiwan to maintain a sufficient self-defense capability. Toward this end, in January 2010, the Obama Administration announced its intent to sell to Taiwan $6.4 billion in defensive arms and equipment, including UH-60 utility helicopters; PATRIOT PAC-3 air and missile defense systems; HARPOON training missiles; Multifunctional Information Distribution Systems technical support for Taiwan's Syun An command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) system; and OSPREY-class minehunting ships.

CHINA'S FOREIGN MILITARY ENGAGEMENT

China's military engages with foreign militaries to build relationships, improve functional capabilities, and shape foreign perceptions of China. PLA engagement activities support China's military modernization goals through acquisition of advanced weapons systems; increased operational experience both within and beyond Asia; and access to foreign military practices, operational doctrine, and training methods.

- China continues to conduct counter-piracy operations in the Gulf of Aden. PLA Navy ships have remained in the Gulf of Aden since January 2009. In July 2011 the PLA Navy deployed its ninth escort formation. Outside of foreign "goodwill cruises," this represents the PLA Navy's only series of operational deployments beyond the immediate western Pacific region.
- China's Ministry of National Defense (MND) announced that by December 2010, it had comprehensively expanded foreign military relations through establishment of military relations with over 150 countries, including attaché offices in 112 countries. 102 countries have military attaché offices in China. The PLA continues sending over 170 military delegations overseas every year and receiving over 200 foreign military delegations as part of high-level strategic consultations and professional and technical exchanges.
- In April 2010, China introduced its "August First" aerial demonstration team to the international media and discussed the PLA Air Force's intention for the team to perform in foreign countries.

Combined Exercises. PLA participation in bilateral and multilateral exercises is increasing. The PLA derives political benefit through increased influence and enhanced ties

with partner states and organizations. Such exercises provide the PLA opportunities to improve capabilities and gain operational insights by observing tactics, command decision-making, and equipment used by more advanced militaries.

- During the recently completed 11th Five-Year Plan, the PLA held 32 joint exercise and training events with foreign militaries. These activities covered issues such as counter-terrorism, maritime drills, ground forces training, peacekeeping, and search and rescue.
- In July, PLA and Brazilian special operations forces conducted FRIENDSHIP-2010, a joint counter-terrorism exercise, which included live fire exercises supported by fighter/bombers, transport aircraft, and attack and transport helicopters.
- China and Peru conducted "PEACE ANGEL 2010," a humanitarian medical rescue exercise in November.
- In early November, the PLA conducted FRIENDSHIP ACTION-2010 with Albanian forces. This marked the PLA's third exercise with foreign troops within China and the first with a European military.
- The PLA Air Force participated in two major international events in 2010; a bilateral air exercise with Turkey and subsequently, PEACE MISSION 2010, which was conducted under the auspices of the Shanghai Cooperation Organization. This latter exercise involved launching air operations from PRC bases to fly missions over Kazakhstan.

Peacekeeping and Humanitarian Assistance/ Disaster Relief Operations. China's participation in UN peacekeeping operations increased six-fold during the six-year period from January 2004 to January 2010. China is now the leading contributor of peacekeeping personnel among the five permanent members of the UN Security Council. China's contributions have included engineering, logistics, medical troops, civilian police, and observers. In January 2004, China had 359 peacekeepers deployed to eight UN peacekeeping missions, with no single contingent larger than 70 troops. As of January 2010, China had 2,131 peacekeepers supporting 10 UN missions, with five separate contingents larger than 200 troops.

- In September 2010, China co-hosted its first UN peacekeeping senior commanders training course at the PRC MND Peacekeeping Center.
- China has maintained a force of 125 riot police in Haiti, in support of the UN stabilization force. After Haiti suffered a devastating earthquake in January 2010, these riot police provided escorts to the PRC medical team Beijing dispatched to the country for humanitarian support.

China's civilian and military leaders have identified humanitarian assistance and disaster relief as an area for China to cooperate with foreign partners and advance PRC interests.

- As of early 2011, China had pledged 250 million U.S. dollars to Pakistan for flood relief. This pledge of aid, which came after international criticism of China's initial response, constituted China's largest-ever humanitarian aid package to a foreign nation. Beijing dispatched two of its international search-and-rescue teams to aid Pakistan, and the PLA sent a medical team. In another first for China, the PLA deployed four military helicopters out of China to support the relief effort.
- In July 2010, China's Ministry of National Defense announced that the PLA had participated in at least 20 international humanitarian rescue missions since 2002, and that its international rescue team had joined six international rescue missions since its creation in 2001.

CHAPTER TWO: UNDERSTANDING CHINA'S STRATEGY

OVERVIEW

China's leaders characterize the initial two decades of the 21st century as a "strategic window of opportunity." They assess that during this period, both domestic and international conditions will be conducive to expanding China's "comprehensive national power" (*zonghe guoli*—综合国力), a term that encapsulates all elements of state power including economic capacity, military might, and diplomacy. Speaking in December 2010, PRC Defense Minister Liang Guanglie asserted that "making the country prosperous and making the armed forces strong are two major cornerstones for realizing the great rejuvenation of the Chinese nation." China's leaders anticipate that a successful expansion of comprehensive national power will serve China's overriding strategic objectives, which include perpetuating 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.

In the near term, the PRC regards stable relations with the U.S. and China's neighbors as essential to stability and critical to maximizing this window of opportunity. At the same time, China's growing economic and military confidence and capabilities occasionally manifest in more assertive rhetoric and behavior when Beijing perceives threats to its national interests or feels compelled to respond to public expectations.

The PRC is particularly concerned that regional actors might counterbalance China's rise through military development and coalitions. China publicly states that its rise is "peaceful" and that it harbors no "hegemonic" designs or aspirations for territorial expansion. However, China's lack of transparency surrounding these growing capabilities has increased concerns in the region about China's intentions.

UNDERSTANDING CHINESE STRATEGY

China uses white papers, speeches, and articles as the principal mechanisms to publicly communicate policy and strategy. Published on March 31, 2011, China's Defense White Paper for 2010 summarizes four national defense "goals" as:

- safeguarding national sovereignty, security and interests of national development;
- maintaining social harmony and stability;
- accelerating the modernization of national defense and the armed forces; and,
- maintaining world peace and stability.

The Defense White Paper for 2010 notes that China continues to implement the military strategy of "Active Defense" and is enhancing "national strategic capabilities" while maintaining China's "no first use" policy on nuclear weapons. China's stated defense strategy is focused on fostering a security environment conducive to China's comprehensive development.

While addressing many of the themes presented in previous PRC Defense White Papers, the latest version conveys some important differences. The new document expresses confidence that the China's position relative to other major powers has improved substantially. Relations with the United States are portrayed with a degree of concern, while the current state of cross-Strait relations is presented in a favorable light. The latest version highlights the PLA's growing focus on military operations other than war, but

overall, the document presents only incremental new insights into the PLA's structure, doctrine and capabilities. Overall, the transparency of China's military and security affairs has improved gradually in recent years, highlighted by its publication of Defense White Papers, establishment of a MND spokesperson, the launch of an official MND website, wider media coverage of military issues, and growing availability of books and professional journals on military and security topics.

Military Decision Making Structures and Processes in China

The PLA is the armed instrument of the Chinese Communist Party (CCP) and organizationally, is subordinate to the Party apparatus. Career military officers are CCP 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 CCP committees, also led by the political officers and commanders.

The PLA's highest decision-making body, the Central Military Commission (CMC), is technically a department of the CCP Central Committee, but is staffed primarily by military officers. The Chairman is a civilian, usually the General Secretary of the CCP and the President. Other members include the commanders of the service arms and the four general headquarters departments, and a number of Vice Chairmen.

Vice President Xi Jinping, the anticipated successor to PRC President Hu Jintao, is one of three Vice Chairmen and the only other civilian on the CMC. China's Ministry of National Defense is a relatively small office specializing in military-related tasks that are the responsibility of the civilian government rather than the armed forces, including foreign military relations, mobilization, recruitment, and civil support to military operations. The Minister of Defense is a uniformed military officer and CMC member.

The PLA currently has less representation in key party decision-making bodies than in the mid-1990s or even the mid-2000s. With the passing of China's revolutionary generation, fewer national leaders hail from a military background. However, PLA leaders are increasingly inclined to voice their thoughts and opinions on international affairs in the public domain.

The Chinese High Command

The PRC Military Structure

China's Upcoming Military Leadership Transition

China's civilian and military leadership are expected to undergo extensive changes during the 18th Party Congress, likely to be held in the fall of 2012. Vice President Xi Jinping was appointed Vice Chairman of the Central Military Commission (CMC) in October 2010. It is unclear whether Hu will follow in the footsteps of his predecessor Jiang Zemin and remain CMC chairman for some period of time after relinquishing his other leadership roles.

The uniformed CMC membership is also expected to experience a major transition during the 18th Party Congress. Seven of the ten uniformed CMC members will almost certainly retire based on age limits. In December 2010, Defense Minister Liang highlighted the PLA's shift towards a "more rational" force structure as the Navy, Air Force, and Second Artillery Corps take on a larger and more prominent place in the PLA.

The three uniformed members expected to retain their CMC posts beyond 2012 are:

General Chang Wanquan, Director of the General Armament Department (GAD), is the only ground forces officer eligible by age to serve an additional term. A former commander of the Shenyang Military Region (MR) and chief of staff of the Beijing MR, General Chang spent most of his career in operations and training posts in the Lanzhou MR. He also served as director of the campaign teaching and research office at the National Defense University in the late 1990s. In his current post as GAD director, Chang oversees foreign weapon procurement and domestic production, military testing, and the space and satellite programs. Two current senior CMC members, Chief of the General Staff Chen Bingde and director of the General Political Department Li Jinai, are also former GAD chiefs, underscoring the emphasis the Party has placed on these elements of the PLA's modernization program.

Admiral Wu Shengli, the Commander of the PLA Navy, has presided over a substantial increase in the Navy's international engagement, including its ongoing counter-piracy deployment to the Gulf of Aden. A former destroyer captain in China's East Sea Fleet and later commandant of the Dalian Naval Vessels Academy who rose to become commander of the South Sea Fleet, Wu also served as a deputy chief of the general staff in the mid-2000s. He is the second naval officer to serve on the CMC since the Navy, Air Force and 2nd Artillery Corps commanders were added to its membership in 2004.

General Xu Qiliang, the Commander of the PLA Air Force is a former pilot who served much of his career in the Nanjing MR opposite Taiwan. He rose to Chief of Staff of the Beijing MR Air Force and then Commander of the Shenyang MR Air Force. Along with Wu Shengli, his promotion to Commander of his service followed a tour as a Deputy Chief of the General Staff in the mid-2000s.

CHINA'S STRATEGIC PRIORITIES

Since China launched its "reform and opening," in 1978, the essential elements of China's strategy have remained relatively constant. Rather than challenge the existing global order, China has adopted a pragmatic approach to international relations and economic development that seeks to strengthen the economy, modernize the military, and solidify the CCP's hold on power. This approach reflects Beijing's assumption that great power status over the long-term is best achieved by avoiding confrontation in the near-term. China's leaders routinely emphasize the goal of reaching critical economic and military benchmarks by 2020 and eventually becoming a world-class economic and military power by 2050.

China's leaders appear to make decisions based on an array of interrelated and sometimes competing strategic priorities, which include perpetuating 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. Although evolving security challenges and growing capabilities have prompted adjustments over the past three decades, the overarching strategic vision has remained largely intact.

During 2010, China continued on a path toward its long-term strategic objectives. Despite domestic concerns over inflation, growing income disparities, and a possible housing bubble, to date China's economy appears to have weathered the global economic turmoil with relative success. In 2010, the PRC economy surpassed that of Japan to become the world's second largest. Although PRC leaders remain concerned over a number of economic challenges, many analysts have suggested that China's economic performance in recent years has endowed Beijing with greater confidence in its economic model and in its relative strength.

Militarily, China's sustained modernization program is paying visible dividends. During 2010, China made strides toward fielding an operational anti-ship ballistic missile, continued work on its aircraft carrier program, and finalized the prototype of its first stealth aircraft. Despite continued gaps in some key areas, large quantities of antiquated hardware, and a lack of operational experience, the PLA is steadily closing the technological gap with modern armed forces.

China's leaders speak about their strategic priorities in terms of what they call China's "core interests." In a December 2010 exposition on China's foreign policy, State Councilor Dai Bingguo enumerated China's core interests as:

- The state system, political system, and political stability of China; that is the leadership of the CCP, the socialist system, and the path of socialism with Chinese characteristics.
- The sovereignty and security, territorial integrity, and national unity of China.
- The basic guarantee for the sustained development of the economy and society of China.

The PRC leadership is also focused on the many potential problems that could complicate or derail China's growth trajectory or its strategy of "peaceful development." These include the following:

- Economics: Continued economic development remains the bedrock of social stability and underwrites China's military power. A wide range of economic factors could disrupt this trajectory, including the rapid contraction of a potentially overheated economy. China's leaders have already scaled back GDP targets for 2011-2015 to mitigate risk of overheating and to manage expectations. Other potential economic risks for China include shifting global trade patterns, resource constraints, or attempts to challenge access to resources.

- Nationalism: Communist Party leaders and military officials continue to exploit nationalism to bolster the legitimacy of the Party and deflect domestic criticism. However, this approach is inherently risk-laden, as these forces could easily turn against the state or complicate China's policy process. Nationalistic appeals for a more muscular PRC posture, particularly during times of crisis, effectively constrain more moderate, pragmatic elites in China's foreign policy establishment. Alternatively, PRC elites may point to nationalism as a justification for their own inflexibility in dialogues with foreign interlocutors.
- Growing Expectations: China's development has translated into greater expectations both at home and abroad for involvement in the international arena. Other nations have called on Beijing to shoulder a greater role in solving international problems, to a point at which some Chinese leaders worry about taking on more than they can handle. At the same time, the domestic perception of China's growing status is producing popular demands for a more assertive pursuit of China's international interests.
- Regional Balancing: China's growing economic, diplomatic and military presence and influence in Asia and globally is raising concerns among many countries about China's ultimate aims – and the threats this could present to them. These regional concerns could catalyze regional or global balancing efforts.
- Domestic Political Pressures: Regime survival shapes the strategic outlook of China's leaders and drives decision making. The Communist Party continues to face long-term popular demands for improved government responsiveness, transparency and accountability. If unmet, these factors weaken CCP legitimacy.
- Demographic Pressures: Demographic stresses will increase in the future, creating a structural constraint on China's ability to sustain high economic growth rates as well as a social challenge for the CCP.
- 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.
- Cross-Strait Dynamics: Despite a reduction in tensions following the March 2008 election of Taiwan President Ma Ying-jeou, the possibility of a military conflict with Taiwan, including U.S. military intervention, remains a pressing, long-term focus for the PLA. In the absence of a peaceful cross-Strait resolution or long-term non-aggression pact, the Taiwan mission will likely continue to dominate PLA modernization and operational planning.

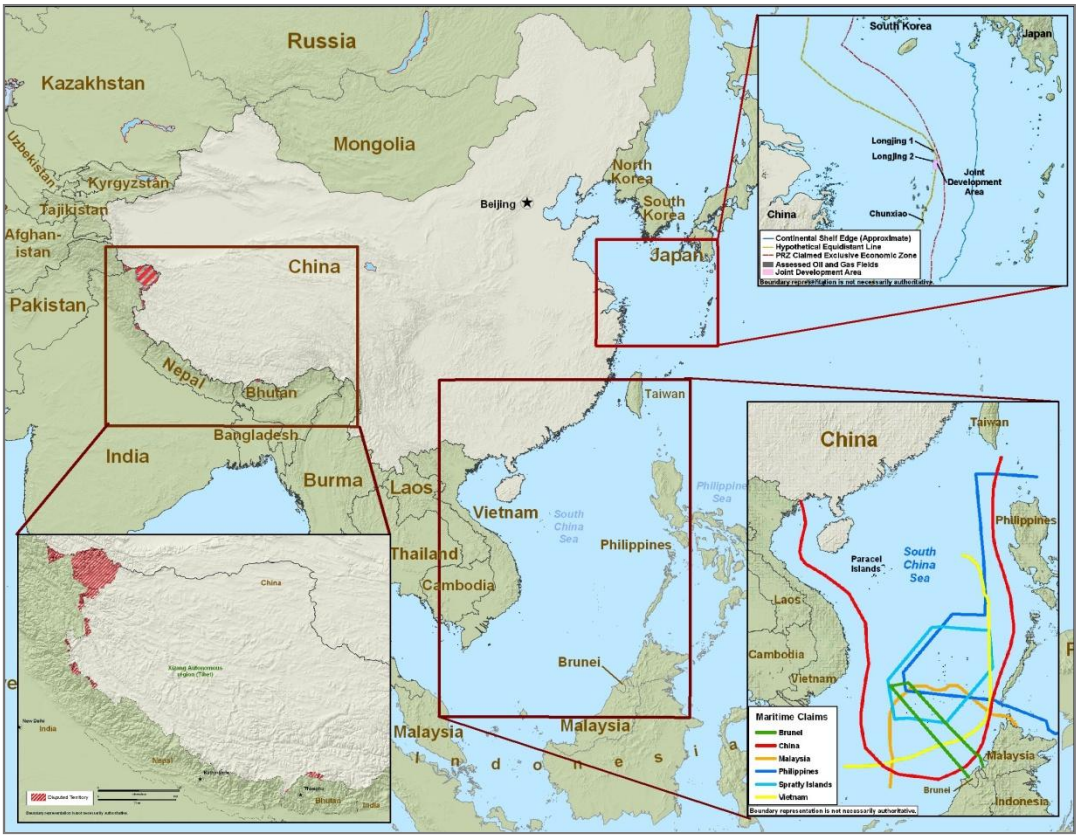
China's Territorial Disputes

China faces extensive territorial disputes along its land and maritime periphery. Next to the status of Taiwan, these disputes play a central role in PLA planning. Although China has generally adopted a less confrontational posture towards its regional disputes since the late 1990s (China has settled eleven land disputes with six of its neighbors since 1998), some regional actors fear China's growing military and economic weight is beginning to produce a more assertive posture, particularly in the maritime domain.

In addition to a longstanding and contentious border dispute with India, China has maritime boundary disputes with Japan over the East China Sea and throughout the South China Sea with Vietnam, Malaysia, the Philippines, Brunei, and Taiwan. These have sparked occasional armed conflict, including a 1962 border conflict with India and a 1979 ground invasion of Vietnam. In the South China Sea, China fought Vietnamese forces in the Paracel Islands in 1974 and near Fiery Cross Reef in 1988. In 1995, China occupied Mischief Reef, also in the Spratly Islands, amid protest from the Philippines. In 2002, Beijing and ASEAN brokered a Declaration on Conduct in the South China Sea. While non-binding, the declaration was followed by a period of relative stability.

China's broad claim to potentially all of the South China Sea remains a source of regional contention. Beginning in the 1930s and 1940s, the Republic of China began publishing regional maps with a dashed line around the perimeter of South China Sea. After taking power in 1949, the CCP maintained this claim. Both the PRC and Taiwan continue to base their South China Sea claims on that broad delineation. China increasingly regards the South China Sea as a vital commercial and security corridor for East and Southeast Asia.

In recent years, some of China's neighbors have questioned Beijing's long-term commitment to peacefully and cooperatively resolve the remainder of its disputes. PLA Navy assets have repeatedly circumnavigated the South China Sea since 2005, and civilian enforcement ships, sometimes supported by the PLA Navy, have occasionally harassed foreign vessels. Underscoring the volatility of these various disputes, a PRC-flagged fishing boat collided with Japanese Coast Guard vessels near the disputed Senkaku Islands in the East China Sea, triggering a highly charged political standoff between Tokyo and Beijing in September 2010.



China's Disputed Territories. *This map is an approximate presentation of PRC and other regional claims. China has remained ambiguous on the extent and legal justification for these regional claims. Three of China's major ongoing territorial disputes are based on claims along its shared border with India and Bhutan, the South China Sea, and with Japan in the East China Sea.*

THE NEW HISTORIC MISSIONS

In 2004, Hu Jintao articulated a mission statement for the armed forces titled, the "Historic Missions of the Armed Forces in the New Period of the New Century" (*xin shiji xin jieduan wojun lishi shiming—*). These "new historic missions" focus primarily on adjustments in the PRC leadership's assessment of the international security environment and the expanding definition of national security. These missions were further codified in a 2007 amendment to the CCP Constitution. The missions, as currently defined, include:

- Provide an important guarantee of strength for the party to consolidate its ruling position.
- Provide a strong security guarantee for safeguarding the period of strategic opportunity for national development.
- Provide a powerful strategic support for safeguarding national interests.
- Play an important role in safeguarding world peace and promoting common development.

According to official writings, the driving factors behind the articulation of these missions were: changes in China's security situation, challenges and priorities regarding China's national development, and a desire to realign the tasks of the PLA with the CCP's objectives. Politburo member and CMC Vice Chairman Xu Caihou in 2005 asserted "the historic missions embody the new requirements imposed on the military by the Party's historic tasks, accommodate new

changes in our national development strategy, and conform to the new trends in global military development."

In a point reiterated in the latest PRC Defense White Paper, economic development remains a central task and the PLA is expected to support China's economic interests and security. This poses new challenges for a military that, until recently had virtually no operational experience outside of its region.

President Hu Jintao's strategic guidance to the military reflects this view, calling on the PLA to play a broader role in securing China's strategic interests, including those beyond its territorial boundaries. In a March 2009 speech to military delegates to China's National People's Congress, President Hu urged the military to concentrate on "building core military capabilities," but also "the ability to carry out military operations other than war" (*fei zhanzheng junshi xingdong*—非战争军事行动). Hu maintained, "with the prerequisite of satisfactorily completing all missions—taking preparation for military struggle as the lead—the armed forces must participate actively in and support national economic construction and public welfare."

China's 2010 Defense White Paper highlights the PLA's evolving roles and missions, noting that:

> *They organize preparations for military operations other than war (MOOTW) in a scientific way, work out pre-designed strategic programs against non-traditional security threats, reinforce the building of specialized forces for emergency response, and enhance capabilities in counter-terrorism and stability maintenance, emergency rescue, and the protection of security.*

Authoritative PRC media describe these "military operations other than war" as including: counter-terrorism, maintaining social stability, disaster relief and rescue, and international peacekeeping operations. China's leaders have mentioned other "non-war military" activities including protecting sea lanes, cyber warfare, security of space-based assets, conducting military diplomacy, and preparing for unexpected conditions and events.

- The PLA Navy's ongoing deployment to conduct counter-piracy escort missions in the Gulf of Aden is one example of China's pursuit of its new historic missions.
- Another example was the 2010 voyage of China's first large hospital ship, which made stops in Asia and Africa. The ship is able to support combat operations, but PRC official press reporting stresses the humanitarian aspects of the ship's mission.
- Most recently, the PLA employed lift assets to assist in the evacuation of PRC citizens from Libya. This marked the PLA's first noncombatant evacuation operation (NEO).

DEBATES ON FUTURE STRATEGY

China's current strategy remains one of managing the external environment to ensure conditions are conducive to China's economic development and military modernization. This approach serves the paramount goal of preserving the survival and leadership of the CCP. Although this strategy appears to enjoy widespread acceptance among Beijing's foreign and security policy establishment, military and academic writings reveal differences of opinion concerning the means of achieving China's broad national objectives.

Although the view is increasingly articulated that the time has come for China to discuss more candidly and pursue its national interests, the prevailing voices within China's leadership have supported 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 PRC interests are best served by focusing on internal development and stability while steering clear of direct confrontation or antagonism with major powers. In December 2010, State Councilor Dai Bingguo specifically cited Deng's guidance, insisting China adhered to a "path of peaceful development" and would not seek expansion or hegemony. He asserted that the "bide and hide" rhetoric was not a "smokescreen" employed while China builds its strength, but rather an admonition to be patient and not stand out.

Some PRC scholars question whether Deng's policy approach will continue to win support as China's interests and power expand. China's perceived security interests have changed considerably since Deng's era to include a heavy reliance on maritime commerce. 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 and assertive PRC role on the world stage have suggested that China would be better served by a firm stance in the face of U.S. or other regional pressure.

There has also been an active debate among military and civilian theorists in China concerning future capabilities the PLA should develop to advance China's interests beyond traditional requirements. Some senior officers and civilian theorists advocate an expansion of the PLA's power projection capabilities to facilitate missions well beyond Taiwan and regional disputes. Publicly, PRC officials contend that increasing the scope of China's maritime capabilities is intended to build capacity for international peacekeeping, humanitarian assistance, disaster relief, and protection of sea lanes.

China Debates its National Security Strategy in 2010

Throughout 2010, a line of commentary in Western and Chinese media and academic circles, suggested that China has grown stronger relative to the United States, particularly as a result of the global financial crisis. Some commentators asserted that a more powerful China should more proactively pursue its national interests. While this increasingly public debate indicates the CCP is allowing discussion of competing strategic priorities, there is little indication that its senior leaders are abandoning Deng Xiaoping's foreign policy legacy in the near term.

The tension between managing China's image and advancing China's interests was revealed on several occasions in 2010. This included discussions of how Beijing should respond to South China Sea tensions and U.S.-South Korea joint exercises in the Yellow Sea. Much of the resulting commentary hailed perceptions that Beijing had taken a stronger stand on these issues in line with its growing international weight. Some commentators argued that China needed to take a still stronger stand or asserted that on the contrary, Beijing lacked sufficient power to sustain a more assertive position, despite a relative U.S. decline.

An increasingly public debate in China regarding the exercise of national power reflects the fact that both assertive and accommodating behaviors come with a set of costs for Beijing. Many in China feel that the steady expansion of comprehensive national power entitles China to greater respect and deference. However, during the current "strategic window of opportunity," the Chinese leadership remains wary of undermining their long-term objectives.

By autumn 2010, commentary on security relations with the United States had moderated, probably due to efforts to smooth the way for President Hu Jintao's planned early 2011 visit to the United States. The official communiqué of the 5th Plenum of the 17th CCP Central Committee held from October 15-18, 2010: "stressed that our country is still in the important strategic opportunity period." We judge this to be a re-affirmation of Deng's strategy of carefully preserving a stable environment for China's development as opposed to a call for Beijing to take a more assertive stance.

Military and Security Aspects of Beijing's Regional Energy Strategy

China's engagement, investment, and foreign construction related to energy continue to grow. Beijing has constructed or invested in energy projects in more than 50 countries, spanning nearly every continent. This ambitious investment in energy assets is driven primarily by two factors. First, Beijing is increasingly dependent upon imported energy to sustain its economy. A net oil exporter until 1993, China still lacks trust in international energy markets. Second, energy projects present a viable option for investing China's vast foreign currency holdings.

In addition to ensuring reliable energy sources, Beijing 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, Beijing still seeks to maintain a supply chain less susceptible to external disruption.

In 2009, China imported approximately 56 percent of its oil and conservative estimates project that China will import almost two-thirds of its oil by 2015 and three-quarters by 2030. Beijing looks primarily to the Persian Gulf, Central Asia, and Africa to satisfy its growing demand for oil. Imported oil contributes to approximately 10% of China's total energy consumption.

A second goal of Beijing'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 2010, over 80 percent of China's oil imports transited the South China Sea and Strait of Malacca. A crude oil pipeline from Kazakhstan to China illustrates efforts to increase overland supply. In January 2011, a 300,000 b/d spur pipeline from Siberia to Daqing began delivering crude to China. China also commenced construction on a pipeline designed to transport crude oil and natural gas from Kyuakpya, Burma, to Kunming, China, bypassing the Strait of Malacca.

China's Top Crude Oil Suppliers 2009

Country	Volume	%
Saudi Arabia	843	21
Angola	646	16
Iran	465	11
Russia	307	8
Sudan	245	6
Oman	234	6
Iraq	144	4
Kuwait	142	3
Libya	127	3
Kazakhstan	121	3
Other	818	19
TOTAL	4,092	

Volumes are in 1,000 barrels per day
Figures have been rounded

China's import transit routes/critical chokepoints and proposed/under construction SLOC bypass routes.

Given China's growing energy demand, new pipelines will only slightly alleviate China's maritime dependency in either the Strait of Malacca or the Strait of Hormuz. The sheer volume of oil and liquefied natural gas imports to China from the Middle East will make strategic SLOCs increasingly important to Beijing.

In 2009 a pipeline that will deliver up to 40 billion cubic meters (bcm) of natural gas per year from Turkmenistan to China via Kazakhstan and Uzbekistan commenced operation. Another natural gas pipeline designed to deliver 14 bcm per year from Burma is in the initial stages of construction and estimated for completion in 2013. Additionally Beijing is negotiating with Moscow for two pipelines that could supply China with up to 69 bcm of gas.

CHINA'S MILITARY STRATEGY

PLA theorists have developed a framework for doctrine-driven reform with the long-term goal of building a force capable of fighting and winning "local wars under conditions of informatization." Drawing upon foreign military experiences, particularly U.S.-led campaigns up to and including Operation ENDURING FREEDOM and Operation IRAQI FREEDOM, Soviet and Russian military theory, and the PLA's own combat history, China is transforming across the whole of its armed forces.

China relies on a body of overall principles and guidance known as the "National Military Strategic Guidelines for the New Period" (*xin shiqi guojia junshi zhanlüe fangzhen*—新期国家军事战略方針) to plan and manage the development and use of the armed forces. This is the closest equivalent in China of the U.S. "National Military Strategy."

The current operational component of China's National Military Strategic Guidelines for the New Period is known as "Active Defense" (*jiji fangyu*—积极防御). Active Defense is the highest-level strategic guidance for all PLA activities and applies to all services. Tenets of Active Defense include the following:

- "Overall, our military strategy is defensive. We attack only after being attacked. But our operations are offensive."
- "Space or time will not limit our counter-offensive."
- "We will not put boundaries on the limits of our offenses."
- "We will wait for the time and conditions that favor our forces when we do initiate offensive operations."
- "We will focus on the opposing force's weaknesses."

Academic research suggests that the current guidelines most likely date to 1993, reflecting the impact of the 1991 Persian Gulf War and the collapse of the Soviet Union on PRC military-strategic thinking. The guidelines were revised in 2002 and 2004, likely reflecting China's perceptions of its evolving security environment and the changing character of modern warfare.

In practice, this strategic evolution has prompted a major shift toward investments in asymmetric, network-centric warfare and A2AD capabilities that are intended to deny elements of the modern battle space to potential enemies. According to the 2008 Defense White Paper, these guidelines emphasize fighting and winning local wars under conditions of informatization and building toward integrated joint operations, with a stress on asymmetric warfare to "make the best use of our strong points to attack the enemy's weak points."

Citing the need to ensure "close coordination between military struggle and political, diplomatic, economic, cultural, and legal endeavors," the guidelines also emphasize the importance of integrating multiple instruments of state power to ensure deterrence and prevent conflict.

Naval Warfare. During the mid 1980s, the CMC approved a specific naval component of "Active Defense" called "Offshore Defense" (*jinhai fangyu*—近海防御), which is sometimes translated more literally as, "Near Seas Defense." Offshore Defense is an overarching strategic concept that directs the PLA Navy to prepare for three essential missions including:

- keeping the enemy within limits and resisting invasion from the sea;
- protecting the nation's territorial sovereignty; and,
- safeguarding the motherland's unity and maritime rights.

The so-called "near seas," which remain a primary focus for the Navy, include the

Yellow Sea, East China Sea, and South China Sea. Increasingly, the PLA is taking on missions that reflect China's expanding commercial and diplomatic interests beyond the near seas, into the "far seas" which include the Philippine Sea and beyond. PLA Navy doctrine for maritime operations focuses on six offensive and defensive campaigns: blockade, anti-sea lines of communication, maritime-land attack, anti-ship, maritime transportation protection, and naval base defense.

Senior civilian officials and PLA officers have argued that China's economic and political power is contingent upon access to, and use of the sea, and that a strong Navy is required to safeguard such access. Despite an increasingly public discussion concerning missions farther from China, the Navy appears primarily focused on contingencies within the "first and second island chains" (see map), with emphasis on a potential conflict with U.S. forces over Taiwan or a territorial dispute.

The First and Second Island Chains. *PRC military theorists refer to two "island "chains" along China's maritime perimeter. The First Island Chain includes Taiwan and the Ryuku Islands, the Second Island Chain extends from Japan to Guam.*

Ground Warfare. Under "Active Defense," ground forces are tasked with defending China's borders, ensuring domestic stability, and exercising regional power projection. PLA ground forces are transitioning from a static defensive force allocated across seven internal MRs, oriented for positional, mobile, urban, and mountain offensive campaigns; coastal defense campaigns; and landing campaigns, to a more offensive and maneuver-oriented force organized and equipped for operations along China's periphery.

The 2010 Defense White Paper asserts that the ground force has:

> *emphasized the development of new types of combat forces, optimized its organization and structure, strengthened military training in conditions of informatization, accelerated the digitized upgrading and retrofitting of main battle weaponry, organically deployed new types of weapon platforms, and significantly boosted its capabilities in long-distance maneuvers and integrated assaults.*

The ground forces appear to be leading the PLA's effort to experiment with *ad hoc*, multi-service, joint tactical formations to execute integrated joint operations.

Air Warfare. The PLA Air Force continues its conversion from a force for limited territorial defense to a more flexible and agile force able to operate off-shore in both offensive and defensive roles, using the U.S. and Russian air forces as models. Mission focus areas include: strike, air and missile defense, early warning and reconnaissance, and strategic mobility. The PLA Air Force also has a leading role in China's planning for anti-access and area denial operations.

The PLA's new missions are also driving discussions about the future of the PLA Air Force, where a general consensus has emerged that protecting China's global interests requires an increase in the Air Force's long-range transportation and logistics capabilities. In September 2010, the PLA Air Force conducted an unprecedented deployment of Su-27 fighter aircraft to Turkey to participate in joint air exercises with the Turkish Air Force. China has also been investing in stealth technology, as evidenced by the appearance of its first stealth aircraft prototype in January 2011. However, as with the Navy, it is likely that the Air Force's primary focus for the coming decade will remain on building the capabilities required to pose a credible military threat to Taiwan and U.S. forces in East Asia, deter Taiwan independence, or influence Taiwan to settle the dispute on Beijing's terms.

Space Warfare. PLA strategists regard the ability to utilize space and deny adversaries access to space as central to enabling modern, informatized 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. Publicly, Beijing attempts to dispel any skepticism over its military intentions for space. In 2009, the commander of the PLA Air Force, General Xu Qiliang, publically retracted his earlier assertion that the militarization of space was a "historic inevitability" after President Hu Jintao swiftly contradicted him.

The PLA is acquiring a range of technologies to improve China's space and counterspace capabilities. A PLA analysis of U.S. and Coalition military operations reinforced the importance of operations in space to enable informatized warfare, claiming that "space is the commanding point for the information battlefield."

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 initial targets of attack to "blind and deafen the enemy." The same PLA analysis of U.S. and

Offense as Defense

PRC military strategists characterize "Active Defense" as inherently defensive, suggesting that China strikes only "after the enemy has struck." Taken alone, this statement, which was reiterated in China's 2010 Defense White Paper, seems clear. However, more detailed Chinese writings leave the actual significance far more ambiguous. In particular, it remains unclear what actions taken by an adversary might cross the threshold of an initial strike.

The *Science of Military Strategy*, which is published by the PLA's Academy of Military Science, asserts that the definition of an enemy strike is not limited to conventional, kinetic military operations. Rather, an enemy "strike" may also be defined in political terms. Thus:

> *Striking only after the enemy has struck does not mean waiting for the enemy's strike passively… It doesn't mean to give up the "advantageous chances" in campaign or tactical operations, for the "first shot" on the plane of politics must be differentiated from the "first shot" on that of tactics.*
>
> [This section continues] *if any country or organization violates the other country's sovereignty and territorial integrity, the other side will have the right to 'fire the first shot' on the plane of tactics.*

If China loosely defines a "strike" to encompass some political action, this significantly alters the purportedly "defensive" nature of this strategic construct. This implies that PLA forces might be employed preemptively in the name of defense.

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."

Integrated Network Electronic Warfare.

PRC military writings highlight the seizure of electromagnetic dominance in the early phases of a campaign as among the foremost tasks to ensure battlefield success. PLA theorists have coined the term "integrated network electronic warfare" (*wangdian yitizhan*—网电一体战) to describe the use of electronic warfare, computer network operations, and kinetic strikes to disrupt battlefield information systems that support an adversary's warfighting and power projection capabilities. PLA writings identify "integrated network electronic warfare" as one of the basic forms of "integrated joint operations," suggesting the centrality of seizing and dominating the electromagnetic spectrum in PLA campaign theory.

SECRECY AND DECEPTION

PRC military writings point to a working definition of strategic deception as "[luring] the other side into developing misperceptions… and [establishing for oneself] a strategically advantageous position by producing various kinds of false phenomena in an organized and planned manner with the smallest cost in manpower and materials." In addition to information operations and conventional camouflage, concealment, and denial, the PLA draws from China's historical experience and the traditional role that stratagem and deception have played in Chinese statecraft.

There is an inherent tension in Chinese strategic culture today, pitting a deep-seated tendency to conceal military capabilities and force development against a partial acceptance that excessive secrecy inflames regional and global anxiety about China's rising power. For over a decade PRC leaders have identified the so called "China threat theory" as a serious hazard to the country's international standing and reputation, threatening the development of a persistent alignment of regional and global

powers in opposition to China. In addition, extreme secrecy is increasingly difficult to reconcile with China's role in the integrated global economy, which depends upon transparency and the free flow of information for success.

There is perhaps another source of tension between the emerging reality of Chinese military power and China's tradition of secrecy, and that is the fact that many of China's new military capabilities are difficult or impossible to hide. Examples of such capabilities include advanced aircraft, long range missiles, and modern naval assets. Furthermore, missiles, space-based, and counterspace systems must be tested and exercised before being operationally deployed with confidence. The PLA's growing inventory of these new assets and the ranges at which they operate effectively prevents their concealment.

"Three Warfares"

The Chinese concept of "three warfares" (*san zhong zhanfa*—) refers specifically to psychological warfare, media warfare, and legal warfare. It reflects China's desire to effectively exploit these force enablers in the run up to and during hostilities. During military training and exercises, PLA troops employ the "three warfares" to undermine the spirit and ideological commitment of the adversary. In essence, it is a non-military tool used to advance or catalyze a military objective.

- **Psychological Warfare** seeks to undermine an enemy's ability to conduct combat operations through operations aimed at deterring, shocking, and demoralizing enemy military personnel and supporting civilian populations.

- **Media Warfare** is aimed at influencing domestic and international public opinion to build support for China's military actions and dissuade an adversary from pursuing actions contrary to China's interests.

- **Legal Warfare** uses international and domestic law to claim the legal high ground or assert Chinese interests. It can be employed to hamstring an adversary's operational freedom and shape the operational space. Legal warfare is also intended to build international support and manage possible political repercussions of China's military actions. China has attempted to employ legal warfare in the maritime domain and in international airspace in pursuit of a security buffer zone.

In 2003, the CCP Central Committee and the CMC endorsed the "three warfares" concept, reflecting China's recognition that as a global actor, it will benefit from learning to effectively utilize the tools of public opinion, messaging, and influence. China likely hopes to employ these three concepts in unison, particularly during the early stages of a crisis, as they have a tendency to bolster one another.

CHAPTER THREE: FORCE MODERNIZATION GOALS AND TRENDS

OVERVIEW

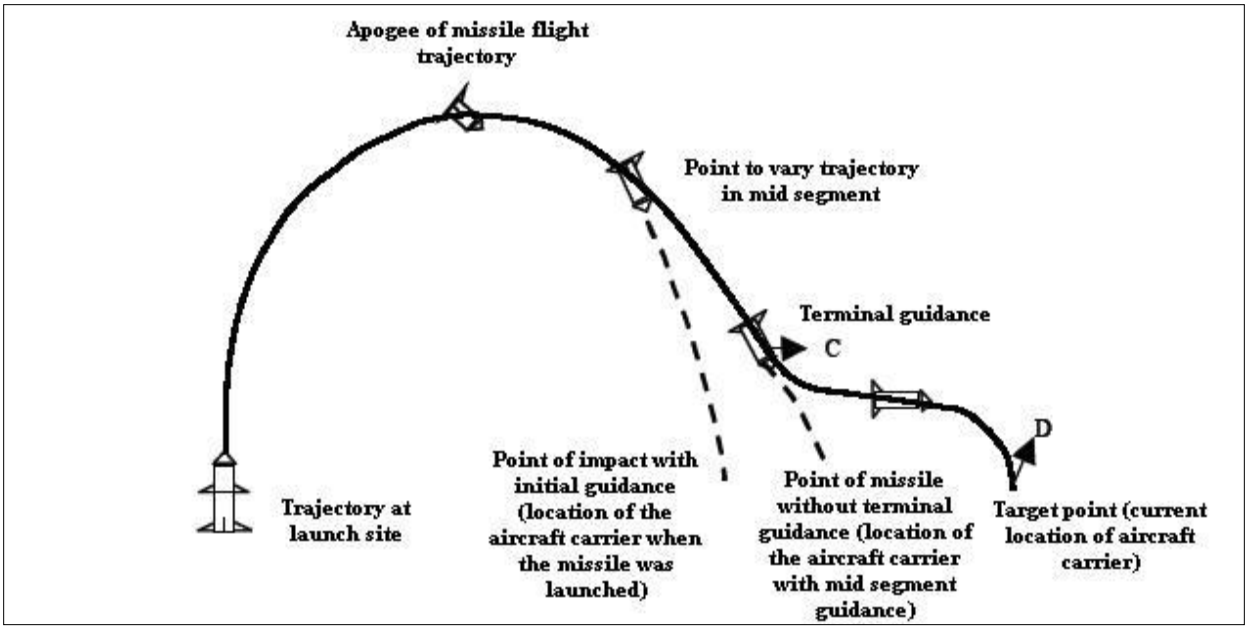
Since the early 1990s PRC leaders have sustained an ambitious and broad-based military modernization program intended to transform the PLA into a modern force. Although the PLA currently retains a large number of legacy platforms and weapons, the percentage of modern equipment in the force is growing rapidly. China has closed important technological gaps and achieved some capabilities that are on par with or exceed global standards. Motivated by a growing set of economic and security interests, China's leaders have given the PLA a new and more externally focused direction, as evidenced by China's growing naval presence on the global maritime domain.

For the PLA, this modernization effort remains a work in progress. The first decade of the 21st century can be characterized as a period of ambitious PLA acquisition and development. Although this trend will continue in the years ahead, the more dominant theme of the 2010-2020 decade is likely to be training and integration. Senior PRC leaders recognize that this period will prove critical to meeting the PLA's modernization objectives, and they have demanded that the military engage in more realistic training and organizational reform.

Throughout the PLA's modernization drive, Taiwan contingency planning has largely dominated the agenda. Even though cross-Strait tensions have subsided since 2008, Taiwan remains a critical mission, and the PLA continues building capabilities aimed not only at Taiwan, but also to deter, delay or deny possible U.S. or allied intervention in a cross-Strait conflict. At the same time, a diminished sense of urgency over Taiwan has enabled the PLA to devote attention to an expanding set of regional and global missions. This includes a focus on "safeguarding China's expanding national interests" and protecting "sovereignty" as outlined in the New Historic Missions, described in the previous chapter

By the latter half of the current decade, China will likely be able to project and sustain a modest-sized force, perhaps several battalions of ground forces or a naval flotilla of up to a dozen ships, in low-intensity operations far from China. This evolution will lay the foundation for a force able to accomplish a broader set of regional and global objectives. However, it is unlikely that China will be able to project and sustain large forces in high-intensity combat operations far from China prior to 2020.

Despite significant improvements, the PLA continues to face deficiencies in inter-service cooperation and actual experience in joint exercises and combat operations. Recognizing these shortcomings, China's leaders continue to stress asymmetric strategies to leverage China's advantages while exploiting the perceived vulnerabilities of potential opponents. The PLA has also embarked on human capital reform, intended to attract and retain talented personnel.



Missile Flight Trajectory with Terminal Guidance. *This graphic of an anti-ship ballistic missile's use of mid-course and terminal guidance to strike an aircraft carrier appeared in a 2006 article from the Second Artillery Engineering College.*

ANTI-ACCESS/AREA DENIAL CAPABILITY DEVELOPMENTS

As part of its planning for a regional contingency, China is developing measures to deter or counter third-party intervention, including by the United States. Although many of these capabilities were developed with a focus on Taiwan, they have broad applications and implications extending beyond a Taiwan scenario. China's approach to this challenge, which it refers to as "counter-intervention," is manifested in a sustained effort to develop the capability to attack, at long ranges, military forces that might deploy or operate within the western Pacific. The U.S. Department of Defense characterizes these as "anti-access" and "area denial" capabilities. China is pursuing a variety of air, sea, undersea, space, counterspace, information warfare systems, and operational concepts to achieve this capability, moving toward an array of overlapping, multilayered offensive capabilities extending from China's coast into the western Pacific.

An essential element of China's emerging A2AD regime is the ability to control and dominate the information spectrum in all dimensions of the modern battlespace. PLA authors often cite the need in modern warfare to control information, sometimes termed "information blockade" or "information dominance," and gain an information advantage in the early phases of a campaign to achieve air and sea superiority. China is improving information and operational security to protect its own information structures, and is also developing electronic and information warfare capabilities, including denial and deception, to defeat those of its adversaries. China's "information blockade" likely envisions employment of military and non-military instruments of state power across the battlespace, including in cyberspace and outer space. China's investments in advanced electronic warfare systems, counterspace weapons, and computer network operations, combined with more traditional forms of control historically associated with the PLA and CCP systems, such as propaganda, deception, and denial through opacity, reflect the emphasis and

priority China's leaders place on building capability for information advantage.

In more traditional domains, China's A2AD focus appears oriented toward restricting or controlling access to the land, sea, and air spaces along China's periphery, including the western Pacific. For example, China's current and projected force structure improvements will provide the PLA with systems that can engage adversary surface ships up to 1,850 km from the PRC coast. These include:

- Anti-Ship Ballistic Missiles: Medium Range Ballistic Missiles (MRBMs) designed to target forces at sea, combined with overhead and over-the-horizon targeting systems to locate and track moving ships.
- Conventional and nuclear-powered attack submarines: KILO, SONG, YUAN, and SHANG-class attack submarines capable of firing advanced ASCMs.
- Surface combatants: LUZHOU, LUYANG I/II, SOVREMENNY-II-class guided missile destroyers with advanced long-range anti-air and anti-ship missiles.
- Maritime Strike Aircraft: FB-7 and FB-7A, B-6G, and the SU-30 MK2, armed with ASCMs to engage surface combatants.

Similarly, current and projected systems such as the J-20 stealth fighter and longer-range conventional ballistic missiles could improve the PLA's ability to strike regional air bases, logistical facilities, and other ground-based infrastructure. PRC 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. China is fielding an array of conventionally armed ballistic missiles, modern aircraft, UAVs, ground- and air-launched land-attack cruise missiles, special operations forces, and cyber-warfare capabilities to hold targets at risk throughout the region.

Building Capacity for Conventional Precision Strike

Short-Range Ballistic Missiles (< 1,000 km). As of December 2010, the PLA had somewhere between 1,000-1,200 SRBMs. The total number of SRBMs represents little to no change over the past year. However, the PLA continues to field advanced variants with improved ranges and more sophisticated payloads that are gradually replacing earlier generations that do not possess true "precision strike" capability.

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

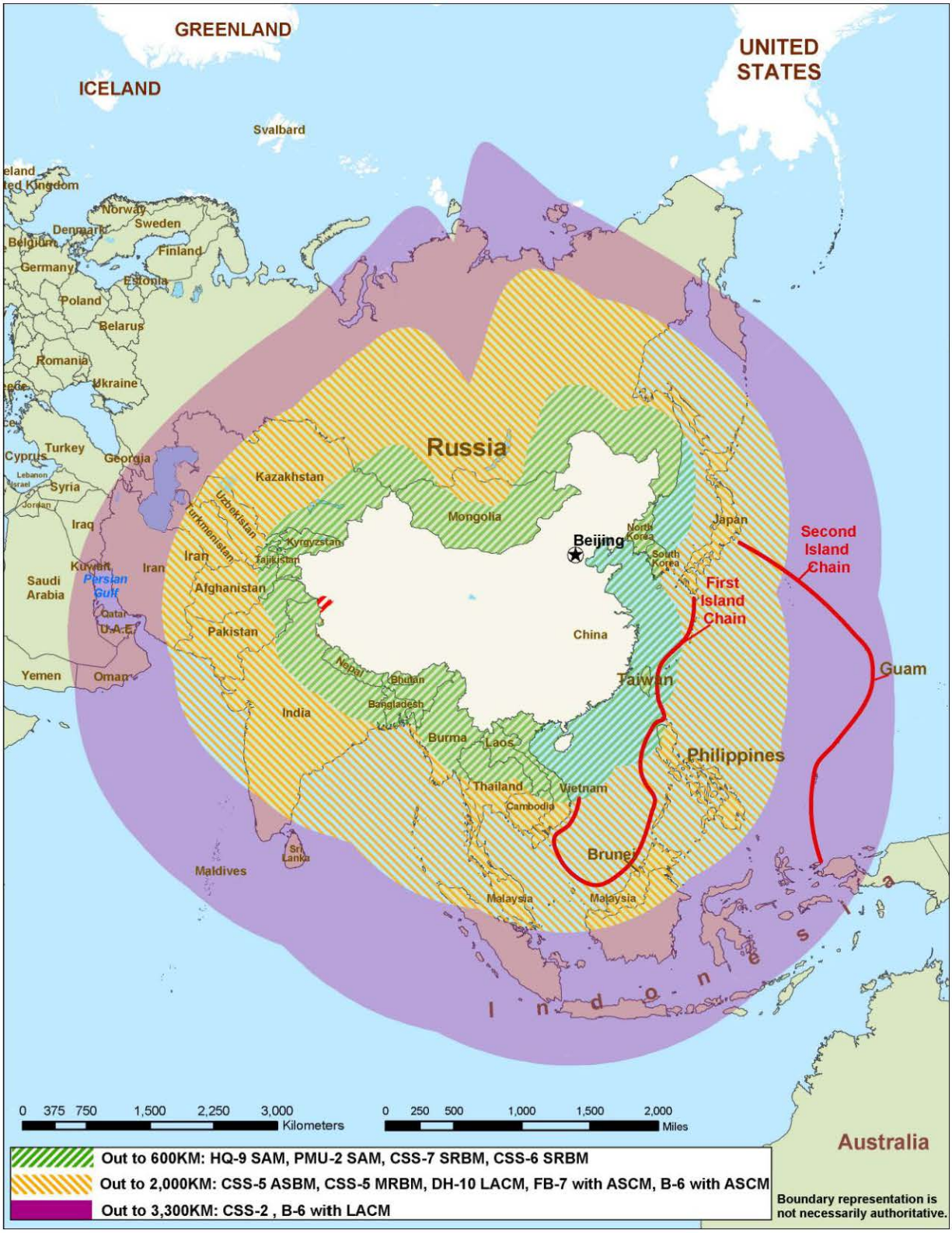
Land-Attack Cruise Missiles. The PLA continues to field air- and ground-launched LACMs, such as the YJ-63, KD-88, and DH-10 systems for stand-off, precision strikes.

Ground Attack Munitions. The PLA Air Force has a small number of tactical air-to-surface missiles as well as precision-guided munitions including all-weather, satellite-guided bombs, anti-radiation missiles, and laser-guided bombs.

Anti-Ship Cruise Missiles. The PLA Navy has or is acquiring nearly a dozen ASCM variants, ranging from the 1950s-era CSS-N-2 to the modern Russian-made SS-N-22 and SS-N-27B. The pace of ASCM research, development, and production within China has accelerated over the past decade.

Anti-Radiation Weapons. The PLA imported Israeli-made HARPY unmanned combat aerial vehicles (UCAVs) during the 1990s and Russian-made anti-radiation missiles. China continues development of an indigenous version of the Russian Kh-31P (AS-17) known as the YJ-91 and is starting to integrate this system into its fighter-bomber force.

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) (100+ km range) and the WS-2 400 mm MRL (200 km range).



Conventional Anti-Access Capabilities. *The PLA's conventional forces are currently capable of striking targets well beyond China's immediate periphery. Not included are ranges for naval surface- and sub-surface-based weapons, whose employment at distances from China would be determined by doctrine and the scenario in which they are employed.*

The air and air defense component of China's regional strategy includes long-range, advanced SAMs, such as the Russian SA-10 and SA-20 PMU1/PMU2, as well as the indigenous HQ-9. Beijing will also use Russian-built and domestically produced fourth-generation aircraft (e.g., Su-27/F-11 and Su-30 variants) as well as the indigenous F-10 to compete for local air dominance. The PLA Navy would employ Russian Su-30MK2 fighters, armed with AS-17/Kh-31A anti-ship missiles, B-6G bombers, and FB-7 fighter-bombers for maritime interdiction. Additionally, acquisition and development of longer-range UAVs and UCAVs will expand China's options for long-range reconnaissance and strike.

In January 2011, initial images of China's 5th generation J-20 stealth fighter were posted on the Internet. Although the appearance of this prototype underscores the level of PRC investment in advanced defense systems, the Defense Department does not expect the J-20 to achieve an effective operational capability prior to 2018. China faces several hurdles as it moves toward J-20 production, including the mastery of high performance jet engine production.

BALLISTIC MISSILE DEFENSE

China's existing long-range advanced SAM inventory offers limited capability against ballistic missiles, but advertises a capability against cruise missiles. The SA-10 was originally designed to counter low-flying cruise missiles, a capability enhanced in the later model SA-20 systems. The SA-20 PMU2, the most advanced SAM Russia offers for export, also has the advertised capability to engage ballistic missiles with ranges of 1000km and speeds of 2,800 m/s.

China's HQ-9 long-range SAM system is also advertised (through its export variant FD-2000) to protect against low-altitude cruise missiles and 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 (>80 km), as well as intercepts of ballistic missiles and other aerospace vehicles within the upper atmosphere. In January 2010, China successfully intercepted a ballistic missile at mid-course, using a ground-based missile.

EXTENDED OPERATIONAL REACH

In addition to preparing for a Taiwan contingency, the PLA has been developing new platforms and capabilities that will extend its operational reach to address other concerns within the East and South China Seas, and possibly to the Indian Ocean and beyond the second island chain in the western Pacific.

In describing the modernization tasks for each of the service arms, China's Defense White Papers in 2008 and 2010 emphasized mobility and operations at greater distances from China's mainland. The main avenues for the PLA to realize these capabilities are through its naval, ballistic missile, and air forces.

The PLA Navy: The PLA Navy is at the forefront of efforts to extend operational reach beyond China's regional waters. China's 2010 Defense White paper asserts that "recent emergency rescue and disaster relief operations, counter-terrorism exercises, and… training [demonstrate]… a notable improvement in the PLA's capabilities of equipment support in long-distance and trans-regional maneuvers, escort operations in distant waters, and complex battlefield environments."

The PLA Navy has demonstrated the capability to conduct limited deployments of modern surface platforms outside the second island chain, including nine separate deployments to the Gulf of Aden to support sustained counter-piracy operations from 2009 through mid 2011. The PLA Navy also has acquired new classes of ships to support

conventional military operations as well as humanitarian assistance and disaster relief missions, including the Type 071 amphibious transport dock and the hospital ship, which the Chinese call the "Peace Ark."

The PLA Navy's investment in platforms such as nuclear-powered submarines and its first aircraft carrier suggest China is seeking to support additional military missions beyond a Taiwan contingency.

China has invested in several civilian port projects throughout Asia and along the Indian Ocean. Although such investments may improve peacetime logistical support options for the PLA Navy, not to mention enhancing PRC soft power in the region, they are not a substitute for military bases. Without overseas military bases, China will be constrained in its ability to project and sustain power beyond the immediate region. A decision in Beijing to abandon its longstanding and self-imposed policy against overseas basing would signal that China seeks a greater blue water combat capability.

Second Artillery Corps: As detailed elsewhere in this report, China's ballistic missile force is acquiring conventional medium-range and intermediate-range ballistic missiles, extending the distance from which it can threaten other countries with conventional precision or near-precision strikes.

The PLA Air Force: The PLA Air Force is developing longer-range versions of the B-6/BADGER bomber that, when equipped with a long-range land-attack cruise missile, will enable strikes as far as the second island chain. The J-20 will eventually give the PLA Air Force a platform capable of long range, penetrating strikes into complex air defense environments.

During the Shanghai Cooperation Organization's Peace Mission exercise in September 2010, PLA Air Force B-6s conducted long-range bombing missions in Kazakhstan while operating out of Urumqi in western China. The PLA Air Force reached another milestone in out-of-area operations in 2010 by deploying Su-27 fighter aircraft to Turkey for joint exercises. Although the PLA Air Force has encountered some difficulty in expanding its fleet of long-range heavy transport aircraft, it marked a new milestone in February 2011, when it employed four IL-76 long-haul transport aircraft to assist with evacuating Chinese citizens from Libya. This mission marked the PLA Air Force's first overseas deployment to evacuate PRC citizens.

PLA Ground Force. Although the PLA's large ground force has not experienced the same dramatic modernization as other branches of the PLA, it has steadily improved capabilities in certain areas. Much, but not all, of this effort has focused on units garrisoned nearest Taiwan. For example, a new amphibious assault vehicle has entered service in key units, improving the PLA's capability to conduct amphibious attacks. Throughout the PLA, small numbers of modern main battle tanks, armored vehicles, self-propelled artillery, and air defense weapons have entered service in selected units. Concurrent with this modernization, PLA ground force training has begun to emphasize combined arms operations and long-range mobility.

STRATEGIC CAPABILITIES

China has made steady progress in recent years to develop offensive nuclear, space, and cyber warfare capabilities—the only aspects of China's armed forces that are currently global in nature. In the case of cyber and space weapons, however, there is little evidence that China's military and civilian leaders have fully thought through the global and systemic effects that would be associated with the employment of these strategic capabilities. Additionally, China is both qualitatively and quantitatively improving its strategic missile forces.

Nuclear Forces. China's nuclear arsenal currently consists of approximately 55-65 intercontinental ballistic missiles (ICBMs), including the silo-based CSS-4 (DF-5); the solid-fueled, road-mobile CSS-10 Mods 1 and 2 (DF-31 and DF-31A); and the more limited range CSS-3 (DF-3). This force is complemented by liquid-fueled CSS-2 intermediate-range ballistic missiles and road-mobile, solid-fueled CSS-5 (DF-21D) MRBMs for regional deterrence missions. The operational status of China's single XIA-class ballistic missile submarine (SSBN) and medium-range JL-1 submarine-launched ballistic missiles (SLBM) remain questionable.

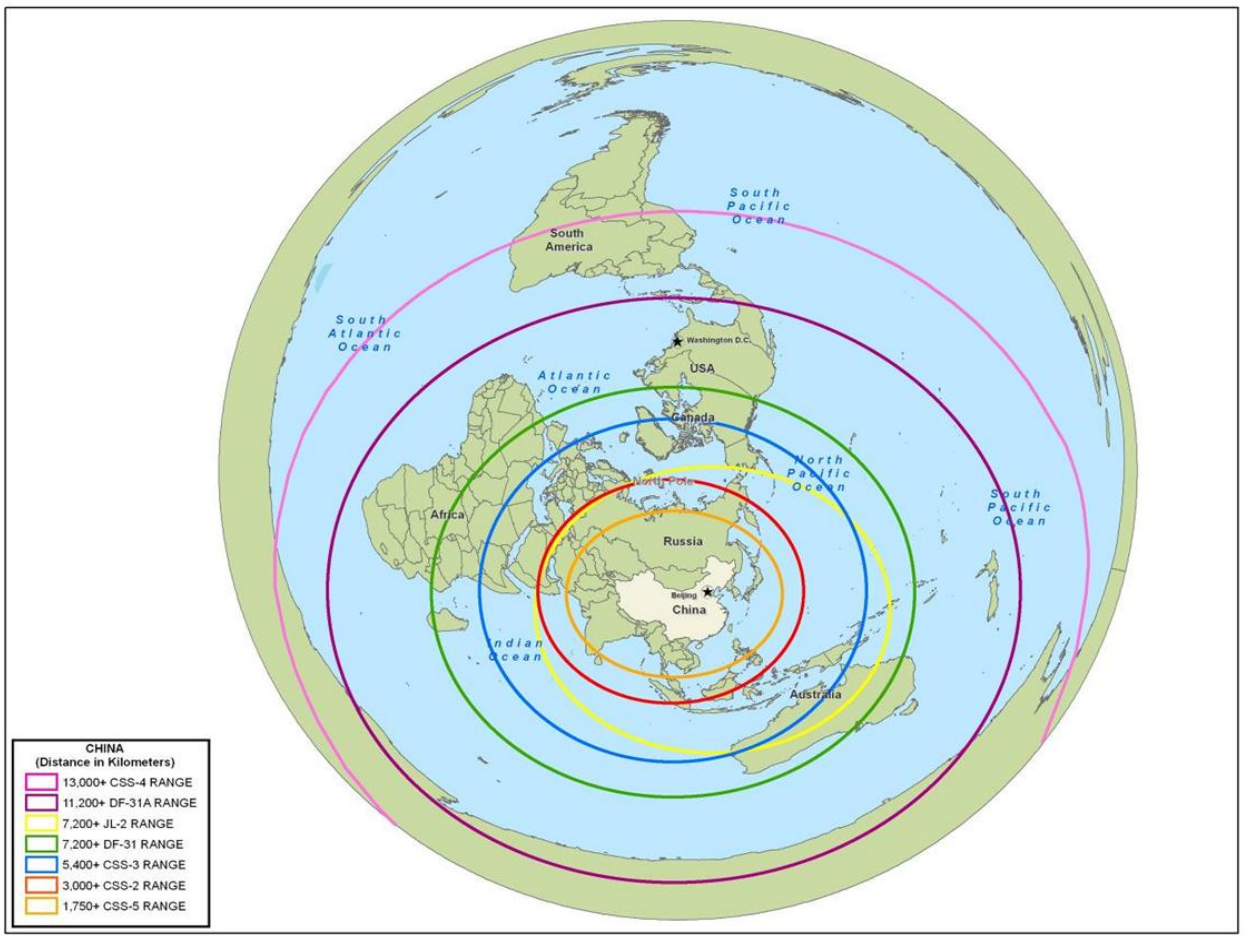
By 2015, China's nuclear forces will include additional CSS-10 Mod 2s and enhanced CSS-4s. The first of the new JIN-class (Type 094) SSBN appears ready, but the associated JL-2 SLBM has faced a number of problems and will likely continue flight tests. The date when the JIN-class SSBN/JL-2 SLBM combination will be fully operational is uncertain.

China is also currently working on a range of technologies to attempt to counter U.S. and other countries' ballistic missile defense systems, including maneuvering re-entry vehicles, MIRVs, decoys, chaff, jamming, thermal shielding, and anti-satellite (ASAT) weapons. PRC official media also cites numerous Second Artillery Corps 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 enhance its strategic strike capabilities.

The introduction of more mobile systems will create new command and control challenges for China's leadership, which now confronts a different set of variables related to deployment and release authorities. For example, the PLA has only a limited capacity to communicate with submarines at sea, and the PLA Navy has no experience in managing a SSBN fleet that performs strategic patrols with live nuclear warheads mated to missiles. Land-based mobile missiles may face similar command and control challenges in wartime, although probably not as extreme as with submarines.

Beijing's official policy towards the role of nuclear weapons continues to focus on maintaining a nuclear force structure able to survive an attack, and respond with sufficient strength to inflict unacceptable damage on the enemy. The new generation of mobile missiles, maneuvering and MIRV warheads, 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 intelligence, surveillance, and reconnaissance; precision strike; and missile defense capabilities.

Beijing 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, including whether strikes on what China considers its own territory, demonstration strikes, or high altitude bursts would constitute a first use. Moreover, 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 "no first use" doctrine.



Medium and Intercontinental Range Ballistic Missiles. *China is capable of targeting its nuclear forces throughout the region and most of the world, including the continental United States. Newer systems, such as the DF-31, DF¬31A, and JL-2, will give China a more survivable nuclear force.*

Beijing will likely continue to invest considerable resources to maintain a limited nuclear force, also referred to by some PRC writers as "sufficient and effective," to ensure the PLA can deliver a damaging retaliatory nuclear strike.

Space and Counterspace. China's space activities and capabilities, including ASAT programs, have significant implications for anti-access/area denial efforts in Taiwan Strait contingencies and beyond.

Reconnaissance: China is deploying imagery, reconnaissance, and Earth resource systems with military utility. Examples include the Yaogan satellites, the Haiyang-1B, and the Huanjing disaster/environmental monitoring satellite constellation. China is planning eight satellites in the Huanjing program that are capable of visible, infrared, multi-spectral, and synthetic aperture radar imaging. In the next decade, even as Beijing fields a larger and more capable array of reconnaissance satellites, it probably will continue to employ commercial satellite imagery to supplement its coverage. China currently accesses high-resolution, commercial electro-optical and synthetic aperture radar imagery from all of the major providers including Spot Image (Europe), Infoterra (Europe), MDA (Canada), Antrix (India), GeoEye (United States), and Digital Globe (United States).

Manned Space: China's most recent manned mission, Shenzhou-7, concluded in September 2008. Shenzhou-7 included China's first spacewalk as well as the launch and rendezvous with an autonomous microsatellite. China will continue its manned space program, including both manned and unmanned docking, with the

goals of establishing a permanently manned space station by 2020 and landing a human on the moon by 2030.

Position, Navigation, and Timing (PNT): Since the 1990s, China has used the U.S. Global Positioning System (GPS) for a wide variety of military, civil, and commercial applications. Building on this foundation, China is pursuing several avenues to reduce its dependence on GPS and become a major supplier of PNT services and user equipment. Currently, the PRC is increasing its use of Russia's GLONASS, deploying its own BeiDou-2 (Compass) system as well as a second independent satellite system called CAPS, while augmenting these overhead systems with a variety of ground-based signals.

The experimental BeiDou-1 system consisted of just three satellites, providing both civil and military services to China. China is replacing BeiDou-1 with the much larger BeiDou-2 constellation, intended to eventually provide a worldwide PNT service, independent of foreign control. By 2012, the BeiDou 2 constellation is expected to provide regional services with approximately 10 satellites. The PRC plans to complete the BeiDou-2 system by 2020, with 35 a satellite constellation offering global coverage.

Communications: China uses communications satellites for both regional and international telecommunications in support of civil and military users, including satellite television, Internet, and telephony. China also maintains a single data-relay satellite launched in mid-2008, the TianLian-1. China has recently entered the world market by exporting satellites and infrastructure to Venezuela and Nigeria. Although the satellite built and launched for Nigeria failed, China continues to market its services worldwide, to customers such as Pakistan, Bolivia, Laos, and Vietnam.

PLA Underground Facilities

Since the early 1950s, the PLA has employed underground facilities (UGFs) to protect and conceal its vital assets. China's strategic missile force, the Second Artillery Corps (SAC), has developed and utilized UGFs since deploying its oldest liquid-fueled missile systems and continues to utilize them to protect and conceal their newest and most modern solid-fueled mobile missiles. As early as the mid 1990's Chinese media vaguely acknowledged the existence of UGFs that support the SAC. Since December 2009, several PRC and foreign media reports offered additional insight into this obscure tunnel network, which reportedly stretches for over 5,000 km.

Given China's nuclear policy of "no first use" and until recently its limited ballistic missile early warning capability, Beijing had assumed it might have to absorb an initial nuclear blow prior to engaging in "nuclear counterattack." Nuclear survivability was particularly critical given China's relatively small number of nuclear weapons and the development by potential adversaries of modern, precision munitions. In recent years, advanced construction design has allowed militaries to go deeper underground to complicate adversarial targeting.

Although secrecy and ambiguity remain China's predominant approach in the nuclear realm, occasional disclosure of information on some missile-related UGFs is consistent with an effort to send strategic signals on the credibility of its limited nuclear arsenal. These public disclosures include images of tunnels, modern network-based security and control centers, and advanced camouflage measures. Categories of military facilities which make good candidates for UGFs include: command posts; communications sites; storage for important weapons and equipment; and protection for personnel.

ASAT Weapons: In January 2007, China successfully tested a direct-ascent ASAT weapon against a PRC weather satellite, demonstrating its ability to attack satellites in low-Earth orbit. China continues to develop and refine this system, which is one component of a multi-dimensional program to limit or prevent the use of space-based assets by potential adversaries during times of crisis or conflict.

In addition to the direct-ascent ASAT program, China is developing other kinetic and directed-energy (e.g., lasers, high-powered microwave, and particle beam weapons) technologies for ASAT missions. Foreign and indigenous systems give China the capability to jam common satellite communications bands and GPS receivers. China's nuclear arsenal has long provided Beijing with an inherent ASAT capability, although a nuclear explosion in space would also damage China's own space assets, along with those of whomever it was trying to target.

Citing the requirements of its manned and lunar space programs, China is improving its ability to track and identify satellites—a prerequisite for effective, precise counterspace operations.

Information Warfare. PRC military thinkers have written extensively on information warfare, reflecting a strong conceptual understanding of its methodology and potential utility. For example, a November 2006 Liberation Army Daily commentary outlines:

> *[The] mechanism to get the upper hand of the enemy in a war under conditions of informatization finds prominent expression in whether or not we are capable of using various means to obtain information and of ensuring the effective circulation of information; whether or not we are capable of making full use of the permeability, sharable property, and connection of information to realize the organic merging of materials, energy, and information to form a combined fighting strength; [and,] whether or not we are capable of applying effective means to weaken the enemy side's information superiority and lower the operational efficiency of enemy information equipment.*

The PLA is investing in electronic countermeasures, defenses against electronic attack (e.g., electronic and infrared decoys, angle reflectors, and false target generators), and computer network operations (CNO). China's CNO concepts include computer network attack, computer network exploitation, and computer network defense. The PLA has established information warfare units to develop viruses to attack enemy computer systems and networks, as well as tactics and measures to protect friendly computer systems and networks. These units include elements of the militia, creating a linkage between PLA network operators and China's civilian information technology professionals. Under the rubric of Integrated Network Electronic Warfare, the PLA seeks to employ both computer network operations and electronic warfare to deny an adversary access to information essential to conduct combat operations.

POWER PROJECTION BEYOND TAIWAN

China continues to invest in military programs designed to improve extended-range operations. Current trends in China's military capabilities could provide China with a force capable of conducting a range of military operations in Asia well beyond Taiwan.

China's political leaders have also charged the PLA with developing capabilities for military operations other than war such as peacekeeping, disaster relief, and counter-terrorism operations. These capabilities hold the potential to make positive contributions in the delivery of international public goods, but also increase Beijing's options for military

coercion to gain diplomatic advantage, advance interests, or resolve disputes in its favor.

Analysis of China's weapons development and deployment patterns suggests Beijing is already looking at contingencies beyond Taiwan as it builds its force. For example, new missile units outfitted with conventional, theater-range missiles at various locations in China could be used in a variety of non-Taiwan contingencies. Given the fact that Taiwan can be reached by land-based aviation, China's aircraft carrier program would offer very limited value in a Taiwan scenario and would require additional naval resources for protection. However, it would enable China to extend its naval air capabilities elsewhere. Airborne Early Warning and Control (AEW&C) and aerial-refueling programs would also facilitate extended air operations. Advanced destroyers and submarines could protect and advance China's maritime interests up to and beyond the second island chain. China's expeditionary forces (three airborne divisions, two amphibious infantry divisions, two marine brigades, and about seven special operations groups) are improving with the introduction of new equipment, better unit-level tactics, and greater coordination of joint operations. Over the long-term, improvements in China's C4ISR, including space-based and over-the-horizon sensors, could enable Beijing to identify, track, and target military activities deep into the western Pacific Ocean.

China's increasing focus on humanitarian assistance and disaster relief (HA/DR) missions will require a unique set of technological developments, including large ships and strategic airlift, to support these missions. Of course, many of these HA/DR capabilities would also enhance the PLA ability to support military operations along and beyond China's borders.

India. China deepened its ties with India through increased trade and high-level dialogues in 2010, though border tensions remained an irritant in the bilateral relationship. Bilateral trade in 2010 reached nearly $60 billion. The two neighbors have held several rounds of dialogue over disputed territorial claims. Sino-Indian defense ties were institutionalized in 2007 with the establishment of an Annual Defense Dialogue. Though India cancelled high-level military exchanges following China's denial of a visa to a senior Indian general in 2010, both sides agreed to resume exchanges in April 2011. During his December 2010 trip to New Delhi, Premier Wen Jiabao attempted to smooth over differences following a year of uneasy relations, but he did not address serious irritants. A high degree of mistrust continues to strain the bilateral relationship. To strengthen its deterrent posture relative to India, the PLA has replaced liquid-fueled, nuclear-capable CSS-2 IRBMs with more advanced and survivable solid-fueled CSS-5 MRBM systems. China is also investing in road development along the Sino-Indian border. Although this construction is primarily aimed at facilitating economic development in western China, improved roads could also support PLA border defense operations. India is also improving infrastructure along its northeastern border. New Delhi remains concerned by China's close military relationship with Pakistan and Beijing's growing footprint in the Indian Ocean, Central Asia, and Africa.

Russia. Beijing continues to view Moscow as a useful international partner. Despite awareness that some Russian interests are not consistent with those of China, Moscow and Beijing share many overlapping interests, and China benefits greatly from a more stable and peaceful northern border. Sino-Russia bilateral cooperation continues on a range of international issues, especially in Central Asia where the two jointly manage the Shanghai Cooperation Organization (SCO).

Despite this cooperation, Russia has concerns about China's rise, while PLA strategists continue to regard Russia as a potential long-term security challenge. China shifted its

strategic orientation to the south and east following the collapse of the Soviet Union, but Beijing retains significant force structure in the Lanzhou, Beijing, and Shenyang Military Regions, in addition to its conventional and strategic missile forces, to maintain deterrence.

Central Asia. China has several important interests in Central Asia. Most notably, China is interested in acquiring energy and natural resources. Beijing has pursued multiple agreements with energy-rich Central Asian states. This includes a pipeline deal that will extend from Turkmenistan through Uzbekistan and Kazakhstan into China.

Beijing is also interested in Central Asia from a domestic security perspective. From the domestic security standpoint, Beijing hopes to undermine support for China's Uighur separatists, who share religious, ethnic, and linguistic connections to groups in Central Asia. Beijing believes that Islamic radicalism and competing political ideologies could destabilize an already fragile security situation in Western China.

China has used the multilateral Shanghai Cooperation Organization, which it co-founded, to address border security, counter-terrorism, and regional security. Beijing has also conducted bilateral and multilateral exercises with SCO member states to enhance China's regional influence and build cohesive opposition to Uighur activities.

South China Sea. Before the CCP took power in 1949, the Chinese government regarded the South China Sea as a region of geostrategic interest and a part of China's "historical waters." As early as the 1930's, the Republic of China was considering a broad line delineating the South China Sea as Chinese territory. The "U-shaped" dashed line that began appearing on Chinese maps in 1947 continues to define PRC claims to the South China Sea. Until recently, however, the PLA Navy's limited operational reach constrained Beijing's military options in the South China Sea.

Over the past five years, China has begun demonstrating a more routine naval and civilian enforcement presence in the South China Sea. In several instances, particularly in 2009, China's use of force and coercion to push it disputed maritime territorial claims elicited concern among many of its Asian neighbors.

Although the PRC remains wary of triggering regional opposition and may have adjusted certain tactics, Beijing appears eager to strengthen its claim to the disputed region over the long-term. This includes legal efforts as well as the deployment of more capable naval and civilian law enforcement ships. A more robust presence would position China for force projection, blockade, and surveillance operations to influence the critical sea lanes in the region, through which some 50 percent of global merchant traffic passes.

Competition for resources, including oil, gas, and fishing rights, coupled with strong nationalistic sentiments continues to drive territorial disputes among several South China Sea claimants. Although tensions in this hotly disputed region subsided after the-1990s, signs of friction re-emerged in 2007, particularly between China and Vietnam.

In response to the 2004 articulation of the PLA's "New Historic Missions," China's senior military leaders began developing concepts for an expanded regional maritime strategy and presence. For example, in 2006, PLA Navy Commander Wu Shengli called for a "powerful navy to protect fishing, resource development and strategic passageways for energy." Many of these ideas echo the debates in the late 1980s and early 1990s over building PLA naval capabilities. However, the rise of Taiwan contingency planning as the dominant driver of PLA force modernization in the mid-1990s, and especially after 2001, largely sidelined these discussions. The 2008 and 2010 Defense White Papers reflect greater attention to the PLA's expanding mission set.

As part of its military modernization effort, China has increasingly shifted resources away from the PLAN's North Sea Fleet to the South Sea Fleet, greatly expanding the latter's capabilities. China's ability to deploy a more robust strategic and conventional military presence off its southern coast is having a growing impact on regional rivalries and power dynamics.

CHAPTER FOUR: RESOURCES FOR FORCE MODERNIZATION

OVERVIEW

The PLA has decreased reliance on foreign weapons 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 PRC students and researchers, and state-sponsored industrial/technical espionage to increase the level of technologies and expertise available to support military research, development, and acquisition. Beijing'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 producer in the global arms market. China's leaders can draw from diverse sources to support PLA modernization, including: domestic defense investments, indigenous defense industrial development, a growing research and development and science and technology base, dual-use technologies, and foreign technology acquisition.

MILITARY EXPENDITURE TRENDS

On March 4, 2011, Beijing announced a 12.7 percent increase in its military budget to approximately $91.5 billion. This increase continues more than two decades of sustained annual increases in China's announced military budget. Analysis of 2000-2010 data indicates China's officially disclosed military budget grew at an average of 12.1 percent in inflation-adjusted terms over the period. Although the military budget increases are slightly larger than the percentage increases of its overall economic growth of 10.2 percent over the same period, the actual change in the implied burden of the official defense budget on the economy appears negligible.

Estimating China's Actual Military Expenditures.

The Department of Defense estimates China's total military-related spending for 2010 was over $160 billion, using 2010 prices and exchange rates.

Estimating actual PLA military expenditures is a difficult process due to the lack of accounting transparency and China's still incomplete transition from a command economy. Moreover, China's published military budget does not include major categories of expenditure, such as foreign procurement. China's legislature has not made public any details of the role, if any, that it plays in exercising oversight of the PLA budget. However, public calls within China for greater budget transparency, generally in response to sustained and systemic official corruption, suggest that improvement in government transparency as a whole could develop over time.

The United States and other countries continue to urge China to increase transparency in military spending. In August 2010, China submitted a report on its military expenditures to the UN Secretary General, the third such report in as many years. China's report was submitted in the UN Simplified Reporting Form, which provides minimal information on major budget categories, in contrast to the more detailed Standardized Reporting Form used by countries practicing greater defense transparency.

CHINA'S ADVANCING DEFENSE INDUSTRIES

Since the late 1990s, China's state-owned defense and defense-related companies have undergone a broad-based transformation. Beijing continues to improve its business

practices, streamline bureaucracy, broaden incentives for its factory workers, shorten developmental timelines, improve quality control, and increase overall defense industrial production capacity. Beijing is also emphasizing integration of defense and non-defense sectors to leverage the latest dual-use technologies and the output from China's expanding science and technology base. Augmented in part by direct acquisition of foreign weapons and technology, these reforms have enabled China to incorporate mid-1990s technology into the development and production of most of its advanced weapon systems. Some systems, particularly ballistic missiles, incorporate cutting-edge technologies in a manner that rivals even the world's most modern systems.

Civil-Military Integration. Developing innovative dual-use technology and an industrial base that serves both military and civilian needs is a high priority for China's leadership. President Hu expressed in his political report to the CCP's 17th Party Congress in October 2007:

> *We must establish sound systems of weapons and equipment research and manufacturing… and combine military efforts with civilian support, build the armed forces through diligence and thrift, and blaze a path of development with Chinese characteristics featuring military and civilian integration.*

China's defense industry has benefited from integration with a rapidly expanding civilian economy and science and technology sector, particularly elements that have access to foreign technology. Progress within individual defense sectors appears linked to the relative integration of each, through China's civilian economy, into the global production and research and development (R&D) chain. For example, the shipbuilding and defense electronics sectors, benefiting from China's leading role in producing commercial shipping and information technologies, have witnessed the greatest progress over the last decade. Information technology companies in particular, including Huawei, Datang, and Zhongxing, maintain close ties to the PLA.

In contrast, enterprises producing high-performance computers, advanced applications software, and specialized top-end semiconductors/microprocessors—key to the evolution of increasingly advanced and capable defense microelectronics and applications, but with limited counterparts in the PRC civil-industrial sector—have experienced slower progress. The aviation and ordnance sectors have similarly suffered from a limited number of spin-off benefits, despite partnerships between foreign multinational corporations and domestic industry.

Sector-by-Sector Analysis. Progress across China's defense industry sectors has been uneven. Production trends and resource allocation appear to favor missile and space systems, followed by maritime assets (both surface and sub-surface), aircraft, and ground force materiel. In all areas, China is increasing the quality of its output and surge production capabilities, if not capacities. However, many of China's most advanced systems are still based heavily on foreign designs copied through reverse engineering, highlighting a persistent weakness in China's capability for overall system design and integration.

Missile and Space Industry: China produces a broad range of sophisticated ballistic, cruise, air-to-air, and surface-to-air missiles. Many of China's primary final assembly and rocket motor production facilities have received upgrades over the past few years, likely increasing production capacity. In addition to supplying China's military, complete systems and missile technologies could also be marketed for export. Surge production for these systems could result in a significantly higher output of SRBMs and perhaps double the number of MRBMs per year. China's space launch vehicle industry is expanding to support satellite launch services and the manned space program.

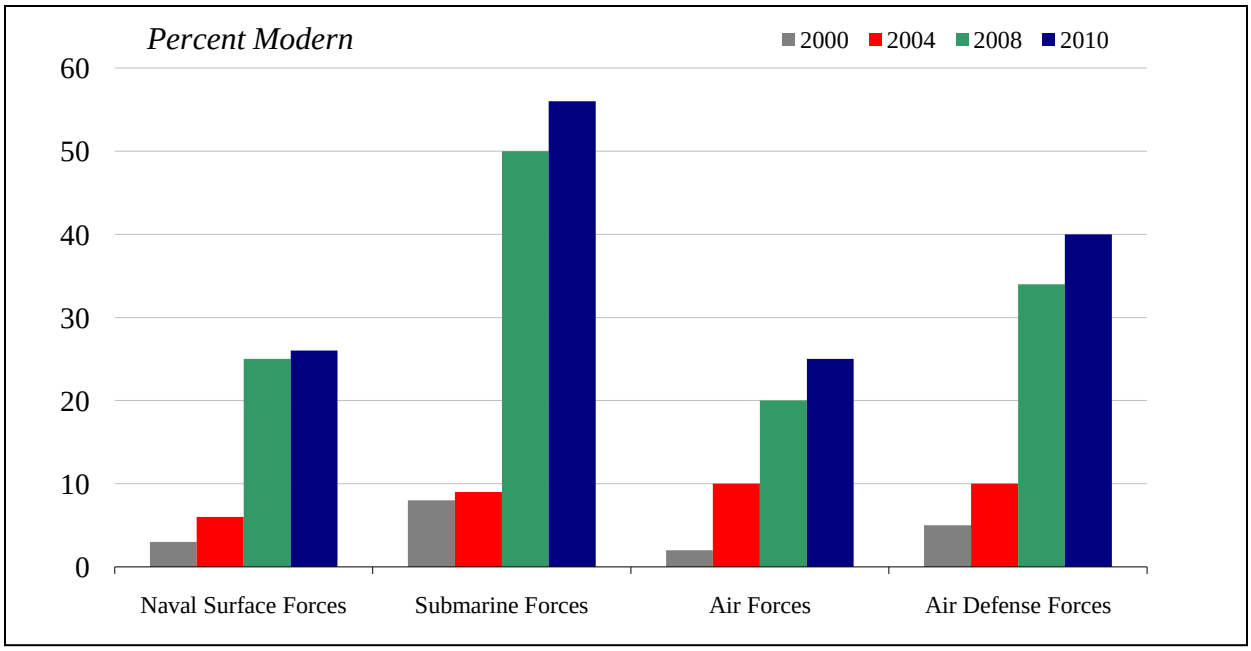
Shipbuilding Industry: China operates a vibrant and globally competitive shipbuilding

industry. By some measures, China is the largest shipbuilder in the world. 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, including aircraft carriers; and lift assets. China continues relying on foreign suppliers for some propulsion units and to a much lesser degree, fire control systems, cruise missiles, surface-to-air missiles, torpedo systems, sensors, and other advanced electronics. Modular shipbuilding techniques will allow China to spread production across multiple locations, increasing both efficiency and output. China has already demonstrated an ability to surge submarine and amphibious production.

Armament Industry: China's ground force modernization includes production of new tanks, armored personnel carriers, and artillery pieces. There have been advances in almost every area of PLA ground forces with new production capacity to accommodate surge requests. China's reliance on foreign partners to fill gaps in critical technical capabilities could still limit actual surge output.

Aviation Industry: China's commercial and military aviation industries have advanced from producing direct copies of early Soviet models to developing and producing indigenous aircraft. These include improved versions of older aircraft and modern fourth generation fighters. China's commercial aircraft industry has imported high-precision and technologically advanced machine tools, electronics, and other components that can also be used in the production of military aircraft. However, China's ability to surge production in the aircraft industry will be limited by its reliance on foreign sourcing for aircraft engines and avionics, as well as the lack of skilled personnel and facilities.

Foreign Technology Acquisition. Key areas where China continues to rely most heavily on foreign technologies include: guidance and control systems, engine technology, and



PLA Modernization Areas, 2000 – 2010. *This graphic compares the expansion of modern operational systems within the PLA in 2000, 2004, 2008, and 2010.*

Footnote: For surface combatants "modern" is defined as multi-mission platforms with significant capabilities in at least two warfare areas. "Modern" for submarines is defined as those platforms capable of firing an anti-ship cruise missile. For air forces, "modern" is defined as 4th generation platforms (Su-27, Su-30, F-10) and platforms with 4th generation-like capabilities (FB-7). "Modern" SAMs are defined as advanced, long-range Russian systems (SA-10, SA-20), and their PRC indigenous equivalents (HQ-9).

enabling technologies such as precision machine tools, advanced diagnostic and forensic equipment, applications and processes essential to rapid prototyping, and computer-assisted design/manufacturing. China often pursues these foreign technologies for the purpose of reverse engineering or to supplement indigenous military modernization efforts.

Russia has been China's primary weapons and materiel provider, selling Beijing advanced fighter aircraft, helicopters, missile systems, submarines, and destroyers. Relying on Russian components for several of its production programs, China purchased production rights to Russian weapon designs. However, this trend is changing as China becomes more self-sufficient in development and production.

Israel previously supplied advanced military technology to China, but has reformed its export control regime through the passage of a Defense Export Control Act in July 2007 and the adoption of implementing regulations in December 2007.

Since 2003, China has pressured European Union (EU) Member States to lift the embargo on lethal military sales to China that the EU imposed in response to China's 1989 crackdown on demonstrators. In their Joint Statement following the 2004 EU-China Summit, European and PRC leaders committed to work towards lifting the Tiananmen embargo. Although the issue remains on the EU agenda, there is no consensus among the EU Member States on lifting the embargo in the near future.

In addition, economic espionage, supported by extensive open source research, computer network exploitation, and targeted intelligence operations also enables China to obtain technologies to supplement indigenous military modernization efforts.

In its 2008 report, *Targeting U.S. Technologies: A Trend Analysis of Reporting From Defense Industry*, the Defense Security Service (DSS) found that in the previous year, foreign collectors, including the PRC, attempted to obtain information and technologies from each of the 20 categories of the Developing Sciences and Technologies List (DSTL). The DSTL is a compendium of scientific and technological capabilities being developed worldwide that have the potential to enhance or degrade U.S. military capabilities significantly in the future.

The DSS report described China's science and technology collection priorities as: guidance and control systems, advanced energy technologies, nanotechnology, space and counterspace systems, nuclear forces, innovative materials, aeronautics and astronautic mechanisms, computer-aided manufacturing and design, and information technologies. The PRC continues to target these technologies.

The U.S. Department of Commerce's Bureau of Industry and Security and the Department of Justice identified at least 26 major cases since 2006 linking China to the acquisition of technologies and applications cited above, as well as to current and future warship technology, electronic propulsion systems, controlled power amplifiers with military applications, space launch technical data and services, C-17 aircraft, Delta IV rockets, infrared cameras, information related to cruise missile design, and military-grade accelerometers. Additional technologies cited in these cases consisted of microwave integrated circuits; weapon scopes; restricted night-vision equipment and data; satellite/missile thermal insulation blankets; controlled electronic components; traveling wave tubes used with satellite and radar systems; microwave amplifiers with radar applications; export controlled technical data related to plasma technology for UAVs; carbon fiber material for aircraft, rockets, spacecraft, and the uranium enrichment process; and, extended range programmable logic devices.

The PRC's continuing efforts to acquire U.S. military and dual-use technologies are enabling the PRC science and technology

base to diminish the U.S. technological edge in areas critical to the development of military weapons and communications systems. Additionally, the technologies China has acquired could be used to develop more advanced technologies by shortening PRC R&D cycles.

TRENDS AND PROJECTIONS

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.

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*** are also high priorities.

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, manned spaceflight, and lunar exploration.

Status of Aircraft Carrier Developments

During the next decade China is likely to fulfill its carrier ambitions, becoming the last permanent member of the UN Security Council to obtain a carrier capability. In April 2011, China's Xinhua state news agency posted the newspaper's first pictures of the former Soviet carrier (Kuznetsov-class Hull-2) under renovation in Dalian, proclaiming that China will soon fulfill its "70-year aircraft carrier dreams." In June 2011, PLA Chief of the General Staff, Chen Bingde, finally confirmed China's carrier program.

Throughout 2010, the PRC continued refurbishing Kuznetsov Hull-2 (the ex-VARYAG), which China purchased from Ukraine in 1998. This carrier will likely begin sea trials in 2011, and the ship could become operationally available, although without aircraft, by the end of 2012. However, it will take several years for an operationally viable air group of fixed and rotary wing aircraft to achieve even a minimal level of combat capability. The PLA Navy has initiated a land-based program to begin training navy pilots to operate fixed-wing aircraft from an aircraft carrier. This program will probably be followed in about three years by full-scale ship-borne training aboard Kuznetsov Hull-2.

China has demonstrated an interest in foreign carrier-borne fighters and carrier aviation, but it appears that a domestic carrier aircraft production program is progressing. Currently in flight testing, the carrier aircraft, known as the J-15, is reportedly an unlicensed copy of a Russian Su-33, which China obtained from Ukraine in 2004. China is also looking abroad for operational expertise. In May 2009, Brazilian Defense Minister Nelson Jobim announced that the Brazilian Navy would provide training to PLA Navy officers in aircraft carrier operations. However, Brazil's limited capabilities in this area and the extensive problems associated with Brazil's own carrier program raise some questions as to the implications of the offer.

In addition to the Kuznetsov-class carrier, the PLA Navy will likely build several additional carriers in Chinese shipyards. In March 2009, PLA Navy Admiral Wu Huayang affirmed, "China is capable of building aircraft carriers… Given the level of development in our country, I think we have such strength." Construction of China's first indigenous carrier, which would likely have a similar displacement and design of the Kuznetsov Hull-2, could begin as early as 2011. If China commences construction in 2011, the PLA Navy could have its first indigenous carrier achieving operational capability as early as 2015.

CHAPTER FIVE: FORCE MODERNIZATION AND SECURITY IN THE TAIWAN STRAIT

OVERVIEW

China's acute focus on Taiwan has served for two decades as the dominant force shaping PLA modernization. Although China's other emerging interests increasingly compete for attention and resources, defense planners continue to regard Taiwan as the PLA's primary mission. Beijing seeks the military capability to deter Taiwan moves toward independence. This mission has catalyzed efforts to deter, delay, or deny the possible intervention of U.S. forces in a cross-Strait conflict. Although cross-Strait ties have improved steadily since 2008 and the prospect of a near-term crisis appears low, the PRC remains focused on developing the prerequisite military capabilities to eventually settle the dispute on Beijing's terms.

Since the election of Taiwan President Ma Ying-jeou in March 2008, China and Taiwan have embarked on a period of improved economic and political ties. The two sides have expanded trade and economic links, such as direct shipping, flights, and mail across the Strait. The United States welcomes and encourages this trend as a means to reduce tensions and bridge differences between the two sides. Nevertheless, there is no indication that China's long-term objectives have changed.

In October 2010, senior PRC officials indicated that the two sides were in no rush to address thorny political or military issues, but would focus on improving economic cooperation. Consistent with that statement, the PRC has not taken steps to reduce its military forces facing Taiwan. China has continued to develop a wide range of weapons and capabilities designed to provide credible military options in a Taiwan contingency. This includes efforts to deter or limit the effectiveness of potential U.S. intervention.

Security in the Taiwan Strait is largely a function of dynamic interactions between and among mainland China, Taiwan, and the United States. Although the PLA probably lacks the necessary military power to successfully conduct a full-scale amphibious invasion of Taiwan, it is working to close perceived capability gaps in the coming years. Furthermore, Taiwan's relatively modest defense spending has failed to keep pace with ambitious military developments on the mainland.

Taiwan has historically relied upon multiple factors to deter PLA aggression: the PLA's inability to project sufficient power across the 185 km Taiwan Strait; the Taiwan military's technological superiority; the inherent geographic advantages of island defense; and the possibility of U.S. intervention. China's increasingly modern weapons and platforms (over a thousand ballistic missiles, an anti-ship ballistic missile program, increasingly modern ships and submarines, combat aircraft, and improved C4ISR capabilities) threaten to negate many of those factors upon which Taiwan has depended.

Taiwan has taken important steps to build its war reserve stocks, grow its defense industrial base, improve joint operations and crisis response capabilities, and increase its officer and noncommissioned officer (NCO) corps. These improvements have partially addressed Taiwan's eroding defensive advantages. Taiwan released its first Quadrennial Defense Review in March 2009, and is following through on that report by creating an all-volunteer military and reducing its active military end-strength from 275,000 to 215,000 personnel to create a "small but smart and strong force." Under this plan, which is slated for completion by December

2014, the cost savings from a smaller force will free up resources to increase volunteer salaries and benefits. However, the additional personnel costs needed to initially attract and retain personnel under the volunteer system could divert funds from foreign and indigenous acquisition programs, as well as near-term training and readiness.

U.S. policy toward Taiwan is based on our one China policy, based on the three Joint Communiqués and the Taiwan Relations Act [Public Law 96-8 (1979)]. U.S. policy opposes any unilateral changes to the status quo in the Taiwan Strait by either side. The United States continues to support peaceful resolution of cross-Strait differences in a manner acceptable to the people on both sides.

Consistent with the Taiwan Relations Act, 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 Obama Administration announced in January 2010 its intent to sell to Taiwan US$6.4 billion worth of defensive arms and equipment, including:

- UH-60 utility helicopters;
- PATRIOT PAC-3 air and missile defense systems;
- HARPOON anti-ship cruise missile training;
- Multifunctional Information Distribution Systems technical support for Taiwan's *Syun An* C4ISR system; and,
- OSPREY-class minehunting ships.

In addition, the U.S. Department of Defense, through transformation of the U.S. Armed Forces and global force posture realignments, is maintaining the capability and capacity of the United States to defend against Beijing's use of force or coercion against Taiwan.

BEIJING'S TAIWAN STRATEGY

Through the employment of both "carrots and sticks" Beijing apparently seeks to deter Taiwan moves toward independence and achieve eventual unification. The PRC strives to integrate the two economies while advancing cultural and historic ties. Politically, China has sought to expand ties with the KMT Party on Taiwan while attempting to isolate political entities with more overtly pro-independence leanings. The PRC employs economic enticement, propaganda, and political engagement in pursuit of these objectives.

The military component of China's Taiwan strategy is likely intended to create an impression on Taiwan that accommodation with China is ultimately in the island's best interest. This approach appears to include a heavy focus on amphibious operations, long range strike, and anti-access and area denial capabilities, which are intended to alter Taiwan's threat calculus as well as that of any party considering intervention in a cross-Strait crisis.

Beijing appears prepared to defer the use of force as long as it believes long term reunification remains possible and the costs of conflict outweigh the benefits. Although Beijing often emphasizes its preference for "peaceful unification" under the principle of "one country, two systems," it has never renounced the possibility of using force to achieve this end. Beijing likely calculates that the prospect of employing military force is an important point of leverage in this relationship.

Historically, the PRC has alluded to several events or conditions that might prompt it to employ military force in pursuit of its Taiwan policy. These conditions have evolved over time in response to political developments on Taiwan, the evolution of PLA capabilities, and Beijing's perception of Taiwan's foreign relations. These circumstances have included:

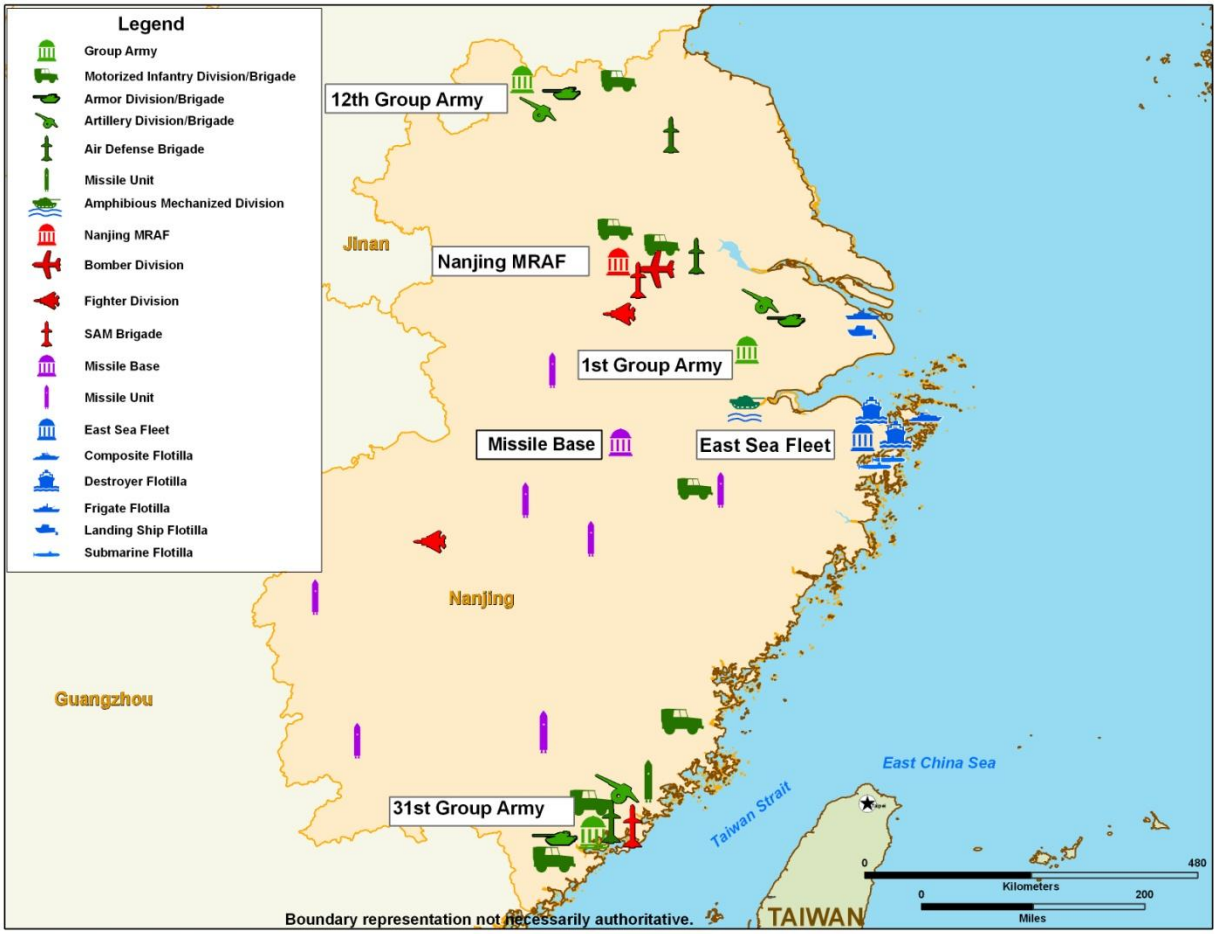
- formal declaration of Taiwan independence;
- undefined moves toward Taiwan independence;
- internal unrest on Taiwan;
- Taiwan's acquisition of nuclear weapons;
- indefinite delays in the resumption of cross-Strait dialogue on unification;
- foreign intervention in Taiwan's internal affairs; and,
- foreign troops stationed on Taiwan.

Article 8 of China's March 2005 "Anti-Secession Law" states that Beijing 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 Beijing's flexibility.

BEIJING'S COURSES OF ACTION AGAINST TAIWAN

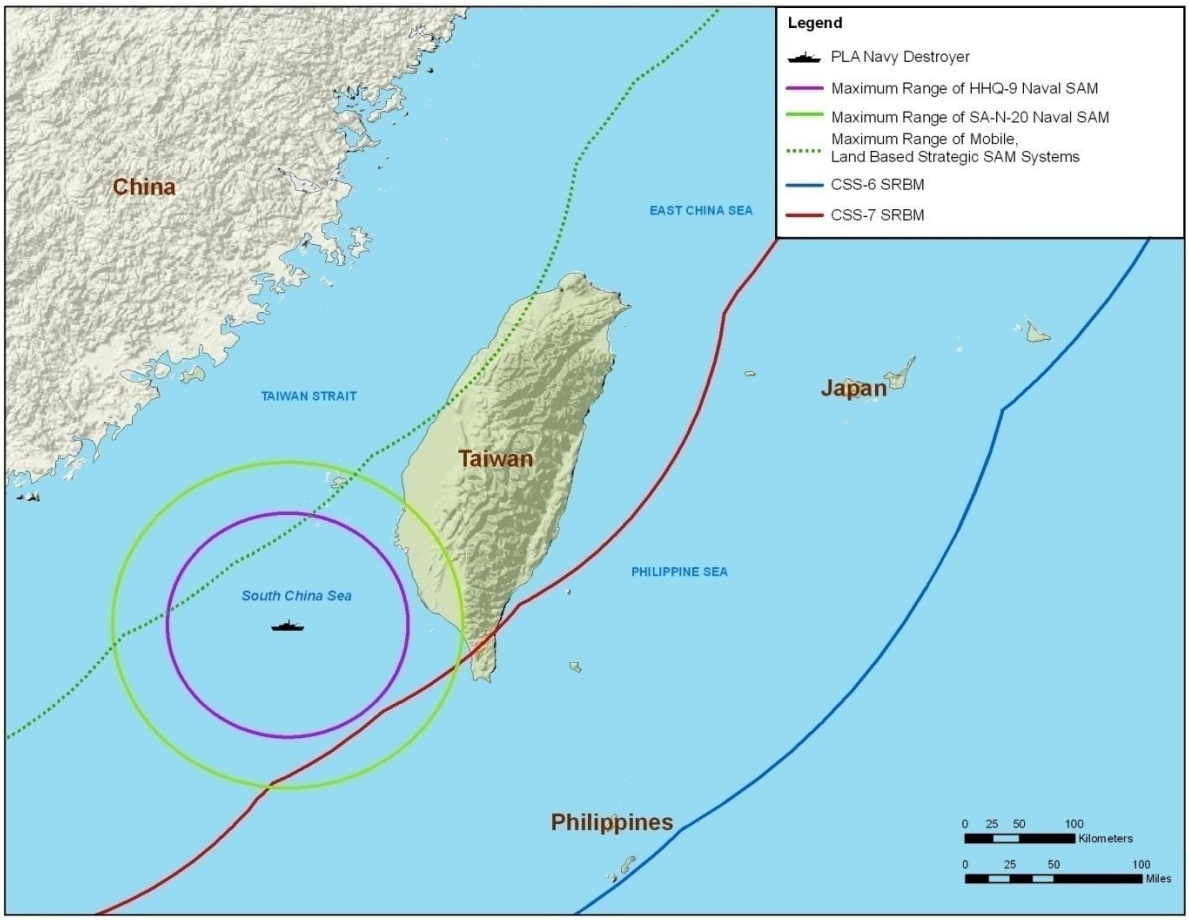
The PLA is capable of increasingly sophisticated military action against Taiwan. Should Beijing resolve to employ military force against Taiwan, some analysts assert the PLA would mobilize forces in a manner that optimizes speed of engagement over strategic deception. Others contend that Beijing would sacrifice preparations in favor of tactical surprise, with the goal of forcing rapid military and/or political resolution before other countries could respond. If a quick resolution is not possible, Beijing would seek to:

- deter potential U.S. intervention by highlighting the potential cost to the U.S. and targeting the resolve of the U.S. public and leadership;
- failing that, delay intervention and seek victory in an asymmetric, limited, quick war; or,
- fight to a standstill and pursue a political settlement after a protracted conflict.



Disposition of PLA Forces in Nanjing Military Region.

Maritime Quarantine or Blockade. Although a traditional maritime quarantine or blockade would have a short-term impact on Taiwan, such an operation would tax PLA Navy capabilities. PRC military writings describe potential alternative solutions including air blockades, missile attacks, and mining to obstruct harbors and approaches. Beijing could declare that ships en route to Taiwan must stop in mainland ports for inspection prior to transiting to Taiwan ports. Beijing could also attempt the equivalent of a blockade by declaring exercise or missile closure areas in approaches to ports, effectively closing port access and diverting merchant traffic. The PLA employed this method during the 1995-96 missile firings and live-fire exercises. However, there is a risk that Beijing would underestimate the degree to which any attempt to limit maritime traffic to and from Taiwan would trigger countervailing international pressure and military escalation. Currently, China probably could not effectively enforce a full military blockade, particularly in the face of intervention by a major naval power. However, its ability to execute a blockade will improve steadily through 2020.



Taiwan Strait SAM & SRBM Coverage. *This map depicts notional coverage based on the range of land and sea based missile systems, including advanced SAMs that China would likely employ in a Taiwan conflict. A single PLA Navy Destroyer is used to illustrate the range of sea-based SAM coverage. Actual air defense coverage would be non-contiguous and dependent upon precise deployment sites. If deployed near the Taiwan Strait, the PMU2's extended range provides the PLA's SAM force with an offensive capability against Taiwan aircraft.*

Limited Force or Coercive Options. Beijing 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. Limited SRBM attacks and precision strikes against air defense systems, including air bases, radar sites, missiles, space assets, and communications facilities, could be conducted in an attempt to degrade Taiwan's defenses, neutralize Taiwan's leadership, or break the public's will to fight.

Amphibious Invasion. Publicly available PRC 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 electronic warfare. 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 such as Pratas Reef or Itu Aba. A PLA invasion of a medium-sized, defended, offshore island such as Mazu 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 type of operation involves significant operational and political risk. It could galvanize the Taiwan populace and catalyze a strong international reaction. Operationally, large-scale amphibious invasion is one of the most complicated military maneuvers. 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 untested 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 Beijing's ability to achieve its objectives.

CHAPTER SIX: U.S.-CHINA MILITARY-TO-MILITARY CONTACTS

OVERVIEW

Over the past two decades, the PRC has steadily transformed a poorly equipped, terrestrially focused military into a more capable force that is assuming diverse missions well beyond China's shores. Given this trajectory, the need for a robust U.S.-China military-to-military relationship that builds trust and helps manage friction continues to grow. During their January 2011 summit, U.S. President Barack Obama and PRC President Hu Jintao jointly affirmed that a "healthy, stable, and reliable military-to-military relationship is an essential part of [their] shared vision for a positive, cooperative, and comprehensive U.S. China relationship." Both sides have repeatedly endorsed this objective. However, placing the military relationship on a firm foundation has proven challenging.

In 2010, the PLA suspended military relations with the United States for a second time since 2008. The suspension on January 30, 2010 came just one day after the U.S. Government approved the sale of an arms package to Taiwan. In response, MG Qian Lihua, Director of the Ministry of Defense Foreign Affairs Office (MND/FAO), noted the PLA "expresses grave indignation and strongly condemns such a move to grossly interfere in China's internal affairs and harm China's national security interests." Although the United States and China maintained working level contact during the nine-month suspension that followed, routine military-to-military exchanges did not resume until the final quarter of 2010.

The fundamental purpose for two countries to conduct military-to-military relations is to gain a better understanding of how each side thinks about the role and use of military power in achieving political and strategic objectives. It is precisely during periods of tension when a working relationship is most important. Over the long term, a fully functioning relationship should help both parties develop a more acute awareness of the potential for cooperation and competition. Speaking at the Shangri-la Dialogue in June 2010, then-Secretary of Defense Robert Gates asserted that the Defense Department "wants what both Presidents Obama and Hu want: sustained and reliable military-to-military contacts at all levels that can help reduce miscommunication, misunderstanding, and the risks of miscalculation."

The United States bases its contacts and exchanges with China's military on the principles of mutual respect, mutual trust, reciprocity, mutual interest, continuous dialogue, and mutual risk reduction. The Department of Defense conducts them in a manner consistent with the provisions of Section 1201 of the National Defense Authorization Act for Fiscal Year 2000 [Public Law 106-65 (1999)], which provide the Secretary of Defense sufficient latitude to develop a program of exchanges with China that supports U.S. national interests.

MILITARY RELATIONS IN 2010

In September 2010, after Beijing expressed a desire to resume military-to-military relations, Deputy Assistant Secretary of Defense (DASD) Michael Schiffer met with MG Qian Lihua to lay the groundwork a series of bilateral military engagements for late 2010 and early 2011.

As a starting point, in mid-October 2010, the U.S. Pacific Command hosted a plenary session of the Military Maritime Consultative Agreement (MMCA) with China's Ministry of National Defense in Honolulu, HI. During the MMCA session, the two sides discussed

issues of maritime safety, including a series of increasingly close PLA intercepts of U.S. aircraft operating in international airspace. On October 17, 2010, Secretary Gates and PRC Minister of National Defense, General Liang Guanglie, met on the sidelines of the ASEAN Defense Ministerial Meeting in Hanoi. General Liang invited Secretary Gates to visit China in early 2011 and agreed to a Chairman of the Joint Chiefs of Staff counterpart visit with PLA Chief of the General Staff, General Chen Bingde.

On December 10, 2010, Under Secretary of Defense for Policy Michèle Flournoy hosted the 11th Defense Consultative Talks (DCT) in Washington, D.C. with Deputy Chief of the PLA General Staff, General Ma Xiaotian. During these talks, the two sides addressed the importance of moving beyond the on-again-off-again cycle that has characterized the relationship. They also discussed potential opportunities to build trust and expand cooperation, including a shared interest in stability on the Korean Peninsula.

Under Secretary Flournoy and General Ma agreed to develop a framework for military-to-military relations based on the seven-point consensus established between then-Secretary Gates and Vice Chairman of the Central Military Commission Xu Caihou in 2009. This meeting also set the stage for Secretary Gates' visit to China and President Hu Jintao's subsequent visit to the United States in January 2011.

The resumption of dialogue in late 2010 enabled the U.S. and PRC militaries to candidly discuss a range of important topics, including North Korea's provocations; concerns related to Iran, Afghanistan, and Pakistan; and transnational and strategic security issues. Continuous dialogue, particularly at high levels, is an important platform for developing common approaches to challenges in the international security environment.

U.S. STRATEGY FOR MILITARY ENGAGEMENT

The complexity of the security environment both in the Asia-pacific region and globally, calls for a continuous dialogue between the armed forces of the United States and China. The U.S. position is that our engagement with China should expand cooperation in areas of mutual interest, provide a forum to candidly address areas of disagreement and improve mutual understanding. The United States sees value in sustained and reliable military ties and regards the military relationship as an integral component of a comprehensive U.S.-China relationship.

The U.S. Defense Department's plan for military-to-military engagement with the PRC supports the vision of a "positive, cooperative, and comprehensive U.S.-China relationship for the 21st century," that the U.S. and PRC presidents jointly endorsed. Sustained military engagement underpins U.S. policy objectives of promoting China's development in a manner consistent with international rules and norms and that contributes to regional and global problem-solving. The U.S. National Defense Strategy emphasizes that U.S. defense interaction with China will be long-term and multi-dimensional. The objective of this effort is to mitigate near term challenges while pursuing and enhancing U.S. national advantage over time.

Our military-to-military engagement with China serves three general purposes in support of the broader relationship. First, it allows the U.S. and PRC militaries to build cooperative capacity. This is achieved through activities that enhance or facilitate our ability to interact at a tactical or operational level. Second, our engagement fosters understanding of each others' military institutions in ways that dispel misconceptions and encourage common ground for dialogue. Third, military engagement allows our senior-most leaders to address the global security environment and

relevant challenges. This interaction can facilitate common approaches to challenges and serves as a bridge to build more productive working relationships.

OPPORTUNITIES AND CHALLENGES IN U.S.-CHINA MILITARY-TO-MILITARY RELATIONS

President Obama reiterated in January 2011 that the United States welcomes a "strong, prosperous, and successful China that plays a greater role in world affairs." China's military modernization has created new opportunities for cooperation with the United States, including peacekeeping efforts, humanitarian and disaster relief, and counter-piracy operations. At the same time, the PLA's development remains a potential source of friction.

The Asia-Pacific region is contending with an array of challenges including rising powers, failing states, proliferation of nuclear and ballistic missiles, extremist violence, and new technologies capable of disrupting critical arteries of global commerce. Secretary Gates has noted that "confronting these tasks is not the task of any one nation acting alone." China's growing economic and military capability makes it a natural partner in efforts to promote regional stability. It is the U.S. position that inevitable differences on certain issues should not prevent our cooperation in those areas where we share common interests.

In early January 2011, Secretary Gates traveled to China at the invitation of PRC Minister of National Defense, General Liang Guanglie. Speaking at a joint press event with General Liang, Secretary Gates noted that even though we face obstacles to genuine "strategic understanding," our two nations have many opportunities to build and improve on areas of bilateral cooperation.

China's growing capacity in areas of counter-piracy, UN peace missions, and humanitarian aid and disaster relief opens new doors for cooperation with the United States and the international community. As the Chinese military develops the capability to deliver medical and humanitarian assistance beyond its immediate region, there will be opportunities for the United States and China to collaborate and share "lessons learned" from these endeavors.

The Department of Defense and China's Ministry of National Defense signed an archival arrangement in 2008 that, for the first time, gave the United States access to PLA archives containing information regarding U.S. servicemen missing in China from World War II, the Korean War and the Cold War. As a result of this agreement, the Defense POW/Missing Personnel Office has made slow but steady progress in accounting for Americans missing in China. Archival research led to the discovery of a U.S. Navy crash site from the Korean War, and consequently, in February 2011, a U.S. recovery operation supported by representatives from the PLA Archives.

The United States and China have opportunities to enhance tactical cooperation, communication, and trust through bilateral and multilateral exercises. Additionally, reciprocal exchanges between mid-grade and junior officers and institutions of professional military education cultivate a generation of rising leaders on both sides who are adept at handling this increasingly complex and vital relationship. ADM Mullen noted in the U.S. Maritime Strategy, "A Cooperative Strategy for 21st Century Seapower," that "trust and cooperation cannot be surged." The skills acquired through our peacetime interactions foster habits of cooperation and safe communication practices that mitigate risk and diffuse tensions.

The pace and scope of China's military development, combined with a relative lack of transparency, remains a point of concern in the United States and among our regional allies and partners. In recent years China has demonstrated occasional signs of assertiveness in Asia, particularly in the maritime domain. This trend has contributed to friction between China and some of its

neighbors over disputed maritime territory in the East and South China Seas.

Additionally, the United States and China continue to hold differing views over the rights of coastal states in the waters and airspace beyond their territorial seas. In 2010 several PLA fighter aircraft conducted unusually close intercepts of U.S. military aircraft operating in international airspace. In recent years Chinese ships have also harassed U.S. military survey vessels operating beyond China's territorial seas.

A sustained and reliable military relationship is vital to managing these challenges and ensuring that they do not come to define the relationship or escalate into a crisis. Our military-to-military contacts should support deterrence of conflict and lower the risk of miscalculation by encouraging continuous dialogue based on open and substantive discussion of strategic issues. Although PRC leaders have repeatedly affirmed a commitment to a sustained and reliable military-to-military relationship, they have also linked continuation of engagement to "respect" for China's "core interests."

SPECIAL TOPIC: CHINA'S EVOLVING MARITIME STRATEGY

THE RISE OF CHINA'S MARITIME SECURITY INTERESTS

Historically a continental power, China increasingly looks to the maritime domain as a source of economic prosperity and national security. China's evolving "maritime consciousness," as reflected in senior-level rhetoric and resource allocation, has potentially far reaching consequences in the Asia Pacific region and beyond. Many PRC officials and citizens view maritime power as a prerequisite to becoming a "great power." This chapter addresses China's attention to the maritime domain, with a particular focus on the security dimension. It identifies the catalysts influencing PRC thinking on maritime interests and the steps China has taken to address these challenges, including naval development, legislation, improving civilian maritime enforcement, and diplomatic initiatives. Finally, it addresses China's specific maritime interests and addresses how China's posture could evolve in the future.

In its 2010 "China Ocean's Development Report," China's State Oceanic Administration (SOA) proclaimed, "building maritime power is China's historic task for the 21st century, and the decade from 2010-2020 is the key historic stage for realizing this task." Although China appears to lack an official maritime strategy, PRC officials, military strategists, and academics are focused on the growing relevance of maritime power to China's interests.

THE EVOLUTION IN "MARITIME CONSCIOUSNESS"

Since the early 1980s, two important factors catalyzed a transformation in Beijing's maritime outlook. First, China's geostrategic environment fundamentally shifted after the Cold War ended. As PRC concerns over a major continental conflict, including the possibility of nuclear war with Russia, subsided, Beijing turned its attention towards a range of other challenges, particularly Taiwan, which it feared was drifting steadily toward a state of *de jure* independence.

The U.S. response in the 1995-96 Taiwan Strait crisis underscored to Beijing the potential challenge of U.S. military intervention and highlighted the importance of developing a modern navy, capable of conducting A2AD operations, or "counter-intervention operations" in the PLA's lexicon.

Second, China's expanding economic interests, including both maritime commerce and the exploitation of marine resources, have affected Beijing's perception of maritime power as it relates to national interests. Speaking in 2007, President Hu asserted that, "to develop maritime issues is one of the strategic tasks to boost our national economic development." China looks to the oceans as a critical resource, providing fish and potentially large oil and gas reserves.

The oceans also serve as a vital artery for trade and support China's economic health, with approximately ninety percent of China's imports and exports transiting by sea. A net oil exporter until 1993, China now imports over half of the oil it consumes, over 80 percent of which transits the Malacca Strait and South China Sea. Additionally, China's economic engine is concentrated in dense population centers along the country's East coast. Conflicts affecting these coastal regions would have far reaching consequences for China.

EVOLVING NAVAL STRATEGY

PLA General Liu Huaqing, who commanded a poorly equipped and trained PLA Navy through most of the 1980s, and later served on the CCP Politburo Standing Committee and

as CMC Vice Chairman, advanced the cause of naval modernization amid a strategic culture overwhelmingly dominated by the PLA ground force. Until Liu instituted the PLA Navy's "Offshore Defense" strategy in 1986, the PLA Navy was focused mainly on "resisting invasions and defending the homeland."

Often referred to as the "father of the modern Chinese Navy," Liu, who died in January 2011, called for naval operations beyond the PRC littoral and appealed for the eventual development of aircraft carriers. Years would pass before many of Liu's proposals gained political support; however, his ideas fundamentally affected the way PRC strategists conceptualize maritime power and approach maritime strategy.

Although not defined by specific boundaries, Offshore Defense is generally characterized by the maritime space within China's Exclusive Economic Zone (EEZ) or sometimes by the "first island chain," including the Yellow Sea, East China Sea, and South China Sea. In recent years, the PLA Navy has begun emphasizing missions in the so-called "far seas," an area loosely defined by the "second island chain," which stretches from Northern Japan, through the Northern Mariana Islands, through Guam.

Consideration of more distant contingencies has been accompanied by limited peacetime operations outside of this region, including counter-piracy patrols, humanitarian and disaster relief and noncombatant evacuations. These peacetime operations have provided the PLA with valuable operational experience.

NEW SECURITY INTERESTS DRIVING REQUIREMENTS

In the early 1990s, the PRC watched with concern as more modern militaries adopted high technology weapons and platforms that were changing the nature of modern warfare, including in the maritime domain. From the perspective of many PRC strategists and military officials, military developments in developed nations made the PLA's coastal-oriented Navy appear antiquated, inadequate, and vulnerable. PRC leaders subsequently directed the PLA to prepare to fight and win "local wars under modern, high-tech conditions." The term "high-tech" was later replaced with "informatized" to reflect the importance of network-centric warfare and information technology.

In his 1992 address to the 14th Party Congress, former President Jiang Zemin articulated the need to protect China's evolving "maritime interests." During the nearly two decades that followed, the PRC has pursued its maritime objectives through naval development, legislation, civilian enforcement, and diplomacy. Ambitious naval acquisition closed many of the capability gaps that defined China's Navy prior to and through the 1990s. China today possesses a limited ability to respond to maritime threats beyond the range of land-based aviation. This includes limited power projection capability in the farther regions of the South China Sea and western Pacific. This progress has been slow, but has begun to accelerate as new systems come on line, and China's naval forces gain additional experience in operations beyond the littoral.

Civilian and military officials have underscored the economic impetus for advancing China's maritime interests, reflecting a perception that economic welfare and national security are increasingly linked. PLA Navy Commander Wu Shengli asserted in 2006 that China requires a "powerful navy to protect fishing, resource development and strategic passageways for energy." This dimension is particularly important to the CCP, which has built its legitimacy on the promise of sustained development.

China's maritime interests, including territorial and sovereignty disputes, resource interests, and critical SLOC dependencies remain heavily concentrated in Asia. Consequently, China's naval orientation retains a decidedly regional focus. However, the PLA is assuming more "global" missions.

This reflects the recognition that Chinese economic interests, including commercial shipping and investment projects, along with PRC citizens, are now located across the globe. It also reflects a desire to cast China as a "great power." China's leaders have offered unambiguous guidance that the PLA Navy will play a growing role in protecting China's far-flung interests.

In 2004, not long after assuming Chairmanship of the CMC, Hu Jintao promulgated the "Historic Missions of the Armed Forces in the New Period of the New Century" (*Xin Shiji Xin Jieduan Wojun Lishi Shiming*), commonly referred to as the "New Historic Missions." In addition to reiterating the Armed Forces' role in sustaining CCP rule, and protecting China's sovereignty and territorial integrity, the New Historic Missions highlight the PLA's role in safeguarding China's expanding "national interests" and in "ensuring world peace."

In drawing a clear link between China's economic interests and national security, the New Historic Missions established a justification for missions beyond China's maritime periphery. Although the PLA remains focused on regional contingencies, the New Historic Missions imply that the pursuit of China's interests would not be constrained by geographic boundaries and would evolve to meet a diverse array of challenges. China's 2006 National Defense White Paper expanded upon the New Historic Missions, when it introduced the concept of "diversified military tasks" (*duoyanghua junshi renwu*—多样化军事任务). This emphasized the need for the PLA to prepare not only for traditional military missions, but also military operations other than war (MOOTW). The PLA Navy has since focused greater attention on counter-piracy, HA/DR, and noncombatant evacuation operations (NEO).

NEW "FIRSTS" FOR THE PLA NAVY

The PLA Navy's counter-piracy deployment to the Gulf of Aden, which it has sustained since 2009, remains the most visible manifestation of this policy shift under Hu Jintao. Not including naval diplomacy, the Gulf of Aden mission marked China's first operational deployment of naval forces outside of regional waters. In September 2010, the PLA Navy's hospital ship, "PEACE ARK" conducted its first overseas humanitarian mission by visiting five countries in Asia and Africa.

Most recently, the PLA Navy participated in its first noncombatant evacuation operation (NEO). In February 2011, the PLA Navy deployed a JIANGKAI-II class frigate, which had been operating in the Gulf of Aden, to support its evacuation of PRC citizens from Libya. Although largely symbolic, this deployment enabled the PLA Navy to demonstrate a commitment to the protection of PRC citizens living and working overseas.

CHINA'S MARITIME INTERESTS

These increasingly "diverse" missions have not supplanted regional priorities. The Taiwan challenge remains the "main strategic direction" (*zhuyao zhanlue fangxiang*—主要战略方向) for China's armed forces, particularly the Navy. Aside from Taiwan, China faces several high priority maritime challenges. First is strengthening and gradually expanding China's maritime buffer zone as a means to prevent foreign attack or "interference." A second priority remains advancing China's maritime territorial claims, particularly the East and South China Seas. Third, China is focused on the protection of regional sea lines of communication (SLOCs).

Fourth, the PRC hopes to advance China's image as a "great power," and finally, China intends to deploy a survivable, sea-based nuclear deterrent in the foreseeable future.

Expanding the Maritime Periphery: China has long regarded the Yellow Sea, East China Sea, and South China Sea as areas of unique strategic importance. From the perspective of Beijing, these so called "near seas" constitute a security buffer and hold potentially significant oil and gas resources. The PRC has attempted to use legal pronouncements, civilian enforcement, and naval assets to advance PRC interests within this buffer zone.

In 1992, China's National People's Congress passed the Law of Territorial Sea and Contiguous Zones, which proclaimed the South China Sea as PRC "historic waters." Beijing has crafted a series of laws that codify PRC claims to regional territory and proscribe special restrictions on foreign activities in China's EEZ.

As the name implies, the Exclusive Economic Zone affords states exclusive access to the economic resources within a defined maritime space, not exceeding 200 nautical miles from the coastal baseline. China has attempted to apply security restrictions to the EEZ, which are inconsistent with customary international law as reflected in UNCLOS. Attempts to impede or harass sovereign U.S. vessels and aircraft operating legally in China's EEZ (beyond China's 12nm territorial seas) have repeatedly created friction in the U.S.-China relationship.

Regional Territorial Disputes: During the 1930s and 1940s, the Republic of China (ROC) began delineating essentially all of the South China Sea, including the Spratly and Paracel Islands, within a nine-dashed line. Although preserving ambiguity on the nature of this claim, the PRC maintains that the territories within the dashed line and their adjacent waters belong to China. Different portions of China's expansive claim are disputed in whole or in part by Taiwan, Vietnam, the Philippines, Malaysia, and Brunei. China's ability to employ coercion in these disputes has grown steadily in recent years. China's naval modernization, in particular, is affecting security perceptions among rival South China Sea claimants.

China is leveraging both civilian enforcement and naval assets in pursuit of its territorial objectives. In recent years, PRC naval ships and civilian law enforcement agencies have shown signs of greater assertiveness in the region, occasionally triggering friction with rival claimants. In the East China Sea, China faces a contentious dispute with Japan over maritime boundaries. Where this line is drawn has implications for disputed territory and subsea energy resources. In 2010, tensions between Tokyo and Beijing rose after a PRC fishing boat rammed a Japanese Coast Guard vessel near the disputed Senkaku Islands.

The PRC has increasingly sought to enforce its broad maritime claims with civilian assets including the maritime police, the Border Control Department (BCD), Maritime Safety Administration (MSA), State Oceanographic Administration (SOA), Fisheries Law Enforcement Command (FLEC), and Coast Guard. Beijing wishes to present the issue of regional maritime territory as one of law enforcement rather than military rivalry. Beijing likely calculates that the employment of naval assets in these matters raises the risk of escalation, generates regional animosity, and unnecessarily burdens the PLA Navy with non-military tasks. Compared to developed countries, particularly Japan and the United States, China's civilian maritime agencies are poorly equipped and operated. However, they are improving steadily and will play an increasingly critical function in China's maritime enforcement efforts.

Debating China's Role in "Distant Seas"

Around the time President Hu Jinto articulated the "New Historic Missions" in 2004, Chinese officials and scholars began openly discussing the extent to which China should expand its maritime power. The term "*yuanhai fangwei*" (远海防卫) which translates to "distant/far sea defense," began appearing with increasing frequency in Chinese publications. Authors associated with the Naval Research Institute (NRI) called the "shift from offshore to open ocean naval operations" an "inevitable historic choice" for China noting that naval power must "match the expansion of China's maritime interests."

Navy deployment trends in recent years underscore China's interests in a limited "far seas" capability. Some PRC commentators advocate a sustained shift from an "Offshore Defense" strategy to "Far Seas Defense." Many others characterize Far Seas Defense as simply an extension or adjustment of the existing strategy, rather than a fundamental change. China's 2010 Defense White Paper reiterated the PLA Navy's commitment to its Offshore Defense strategy while acknowledging efforts to improve operational capabilities in far seas.

Recently, several Navy officials and commentators have broached the once-taboo topic of overseas military basing. In late 2009, Rear Admiral Yin Zhuo (retired), attracted extensive international media attention when he suggested in an interview, that China requires a "stable and permanent supply and repair base" to support its overseas counter-piracy activities. With an aircraft carrier program being realized over the next decade, the Navy may face even greater incentive to improve its support options.

It is not clear if China will pursue traditional military "bases," suited for supporting distant combat operations, or a more limited set of logistical supply "places," that are better suited to peacetime deployments, such as counter-piracy and HA/DR.

SEA LANE PROTECTION

Since China's emergence as a global economic actor, it has relied nearly exclusively on the United States as the guarantor of a safe and unrestricted maritime domain. Approximately 90 percent of China's trade volume is conducted via maritime transport and approximately 50 percent of global merchant traffic passes through regional waters.

This dependency has prompted greater attention to SLOC protection missions. PRC officials have expressed particular concern over the Strait of Malacca. Even with its recent advances in naval power, would face great difficulty responding to threats to shipping in the far reaches of the South China Sea, including the Strait of Malacca.

The PLA Navy's ongoing effort in the Gulf of Aden underscores China's strong interest in protecting maritime commerce, from both traditional and non-traditional threats. The United States welcomes China's contribution to maintaining the safety and security of the global maritime domain. This deployment underscores an area where mutual interest can foster cooperation.

GREAT POWER STATUS

China's ambitious naval modernization remains a great source of pride for the PRC public and leadership. China has deployed its most modern ships to engage in naval diplomacy and counter-piracy in a coalition environment. Many in China see naval power as a prerequisite for great power status.

PRC officials and commentators occasionally lament the fact that China is the only permanent member of the U.S. Security Council without an aircraft carrier. The PLA Navy's anticipated deployment of aircraft carriers over the coming decade will likely serve as a great source of national pride, regardless of actual combat capability.

China's leaders have tapped into this nationalistic sentiment, contrasting China's current naval power with the late Qing Dynasty, which was easily overwhelmed by more modern Japanese and Western naval forces. On December 27, 2006, President Hu Jintao expressed confidence in China's naval development, asserting to a group of PLA Navy officers that China was now "a great maritime power" (*haiyang daguo*), adding that the PRC must continue strengthening and modernizing its Navy.

SEA-BASED NUCLEAR FORCES

China continues efforts to deploy a sea-based nuclear deterrent. Although the PLA Navy has received the JIN-class SSBN, it has faced repeated challenges with the JL-2 weapons system. The system did not reach an initial operational capability (IOC) by 2010 as DoD had anticipated. Once China overcomes remaining technical hurdles, the PLA Navy will be charged with protection of a nuclear asset.

OVERCOMING KEY CHALLENGES

Although areas of PLA progress frequently attract attention, lesser understood capability gaps remain. For example, the Gulf of Aden deployment has underscored the complexity of distant operations to China's military and civilian leadership. According to Rear Admiral Yin Zhuo, the Gulf of Aden mission has "shown the Navy's equipment is not particularly suited to blue water operations... [and] our equipment, our technology, especially our level of information infrastructure and communication means, as well as our blue water deployment capabilities… still have a relatively long way to go to catch up with that of the Western countries."

China's regional capabilities have improved significantly over the past two decades. However, in the near term, China would face great difficulty projecting military power beyond regional waters during a sustained conflict. China lacks overseas bases and supply infrastructure, and despite some recent progress, remains reliant on shore-based defenses. Over time, China's growing involvement in international peacekeeping efforts, military diplomacy, counter-piracy operations, humanitarian assistance and disaster relief, evacuation of Chinese citizens from overseas trouble spots, and exercise activity, will improve the PLA's capability to operate at greater distances from the mainland. This operational experience could eventually facilitate a "global" military presence, should China's leadership pursue that course.

ASSESSING THE FUTURE

The evolution of China's economic and geostrategic interests has fundamentally altered Beijing's view of maritime power. Today, the PLA Navy and China's civilian maritime agencies are addressing gaps in regional capabilities while engaging in a small number of peacetime operations beyond the region, where their capabilities remain more limited. The expansion of missions reflects the availability of resources and the PRC's increasingly diverse interests.

Beyond immediate regional interests, China's expanding capabilities might facilitate greater attention to maritime challenges further into the Pacific and Indian Oceans. In contrast to a decade ago, many of China's new naval platforms can utilize space-based communications, advanced sensors, and area air-defense, enabling combat capability at great distances from land. Current peacetime deployments are providing PLA Navy

operators with valuable experience outside of the region.

The establishment of overseas bases and the development of more than a few aircraft carriers might signal a trend towards more "global" missions. Greater openness from China regarding the nature and scope of its maritime ambitions could help mitigate suspicions and ensure that China's maritime development becomes a source of global stability rather than a source of friction.

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SPECIAL TOPIC: CHINA'S MILITARY ENGAGEMENT

The PLA has increasingly engaged with foreign militaries over the past decade. At the operational level, military engagement provides opportunities to share doctrine, tactics, techniques, and procedures with other militaries, both modern and developing. At the strategic level, military engagement allows Beijing to demonstrate its capabilities and emerging role in the international system.

China's military modernization has facilitated cooperation in two key respects. First, PLA modernization has removed capability-based constraints, allowing the PLA to operate with more advanced forces and at greater distances from the PRC mainland. Just a decade ago, for example, China's sustained deployment to the Gulf of Aden and the many associated foreign engagements would have proven exceedingly difficult, if not impossible for China.

Second, Beijing takes pride in "showing the flag" with an increasingly modern array of platforms, both imported and indigenously designed. The international fanfare surrounding the PLA Navy's 60th Anniversary celebration in 2009 underscored the growing confidence in China's military development and desire to showcase these achievements.

TRADITIONAL MILITARY DIPLOMACY

Senior level visits and exchanges provide the PRC 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.

PLA engagement with foreign partners has grown in tandem with China's global profile, enabling China's military officers to observe and study foreign military command structures, unit formations, and operational training. PLA Navy port calls within Asia and beyond the region have steadily increased since 2002. In 2010, the PLA maintained a regular presence in over 100 countries with at least 300 attachés posted abroad, up from 201 in 2002 and 220 in 2005. The number of countries with defense attachés in Beijing is also increasing. As of 2010, 102 countries had established military attaché offices in China, up from 79 countries in 1996.

The PLA Navy's counter-piracy role in the Gulf of Aden has provided opportunities to advance China's image as a modern military that can act alongside other major world navies. PLA Navy port calls made both in the region and in transit to and from the Gulf of Aden reinforce China's political, military, and economic ties with those countries.

China hosts foreign military officers as students in its military academies. In October 2009, foreign military students from over 70 countries observed the PLA exercise VANGUARD 2009, which included a live fire demonstration. The first PLA exercise opened to observation by foreign military students was QIANFENG 2008, which reportedly involved an armored brigade conducting an offensive maneuver in a mountainous area.

The PLA's first instance of a mixed training class with both Chinese and foreign officers culminated with a June 2009 graduation ceremony at the Air Force Command College (AFCC), which included 56 officers from the air forces of 29 foreign countries and 12 officers from the PLA Air Force.

COMBINED EXERCISES

The PLA participates in a growing number of bilateral and multilateral military exercises in areas such as counter-terrorism, mobility operations, and logistics. The PLA gains operational insight by observing tactics,

command decision making, and equipment used by more advanced militaries.

China is eager to present these activities as constructive, peaceful, and not directed against any other country. Many of the PLA's exercises with foreign militaries are conducted under the rubric of counter-terrorism. Beijing has held exercises bilaterally with Russia, India, Pakistan, Thailand, Singapore, Australia, and multilaterally with the Shanghai Cooperation Organization and the various countries that participated in the Pakistan-hosted exercise AMAN-09. In 2010, the PLA conducted five training exercises with foreign militaries, three of which were held in China.

Additionally, China has invited foreign military observers and resident military attachés to observe PLA exercises on at least six occasions since 2003, enabling China to project an overall national image of "peaceful development" and increased military transparency.

The PLA Navy routinely conducts search and rescue exercises with foreign militaries, including exercises with Australia, the United Kingdom, India, Pakistan, Japan, New Zealand, Russia, Vietnam, and others. These exercises serve training purposes and build rapport with foreign countries.

PEACEKEEPING OPERATIONS

Prior to 2002, Beijing generally avoided participation in UN peacekeeping operations (PKO), due to lingering skepticism of the international system and a long-stated policy of "non-interference" in other countries' internal affairs. China's participation from 1991-1993 in the UN Transitional Authority in Cambodia marked a notable exception to this policy. China's attitude towards UN PKOs has changed dramatically over the past decade, particularly since Hu Jintao promulgated the New Historic Missions in 2004.

In January 2004, China had just 359 peacekeepers deployed to eight UN peacekeeping missions, with no single contingent containing more than 70 troops. Six years later, in January 2010, China had 2,131 peacekeepers (all non-combat) supporting 10 UN missions, with five separate contingents containing more than 200 troops. China is now the leading contributor of peacekeeping personnel among the five permanent members of the UN Security Council. PRC contributions have consisted of civilian police; military observers; and engineering, logistics, and medical troops. China provided several rotations of over 100 police officers to the United Nations Stabilization Mission in Haiti (MINUSTAH). In 2010, China will shoulder approximately $300 million of the UN peacekeeping budget.

China regards participation in UN peacekeeping operations as serving multiple objectives, including improving China's international standing and image, demonstrating support for international stability in troubled regions, providing opportunities to initiate and expand intelligence collection, and enhancing relationships in the affected areas. Beijing has also demonstrated a growing willingness to deploy personnel on missions where conditions are more hazardous. After the 2006 death of a PRC peacekeeper in Lebanon, for example, the PLA increased its troop contributions to the UN Interim Force in Lebanon (UNIFIL). As of July 2010, Beijing will be deploying over 400 members of the 7th Chinese Peacekeeping Troops to support the African Union-UN Mission in Sudan.

Highlighting PRC interest in PKO's, China opened the Ministry of National Defense (MND) Peacekeeping Center in July 2009, the first PLA peacekeeping facility dedicated to professional training and international exchange. Later in September 2010, the MND co-hosted with the UN the first senior commanders' training course on peacekeeping. Although China has yet to deploy combat troops for peacekeeping duty,

Beijing has openly discussed this as a future possibility.

HUMANITARIAN ASSISTANCE/DISASTER RELIEF

Over the past decade the PLA steadily increased its participation in international HA/DR missions. Investment in large amphibious ships, a new hospital ship, long-range transport aircraft, and improved logistics has made this mission a practical reality. Since 2002, the PLA has contributed to at least thirteen emergency relief operations in fourteen countries in China's immediate region as well as in Haiti during the aftermath of the earthquake in January 2010. Like PKOs, involvement in international HA/DR enables China to present a positive face to its military development while simultaneously advancing China's image as a responsible global power.

In late 2010, PLA Navy's new hospital ship PEACE ARK conducted the 88-day "MISSION HARMONY-2010" deployment to the Gulf of Aden to provide medical care to the PLA Navy counter-piracy flotilla and to treat needy residents in Djibouti, Kenya, Tanzania, Seychelles, and Bangladesh. This mission marked the PLA Navy's first foreign deployment of a hospital ship.

The PLA's humanitarian relief capability and capacity remains limited, but China is seeking to collaborate with regional partners to improve these capabilities. China and Indonesia drafted the "Association of Southeast Asian Nations (ASEAN) Regional Forum General Guidelines on Disaster Relief Cooperation" to steer the development of Standard Operating Procedures for future HA/DR operations, which were adopted in July 2007.

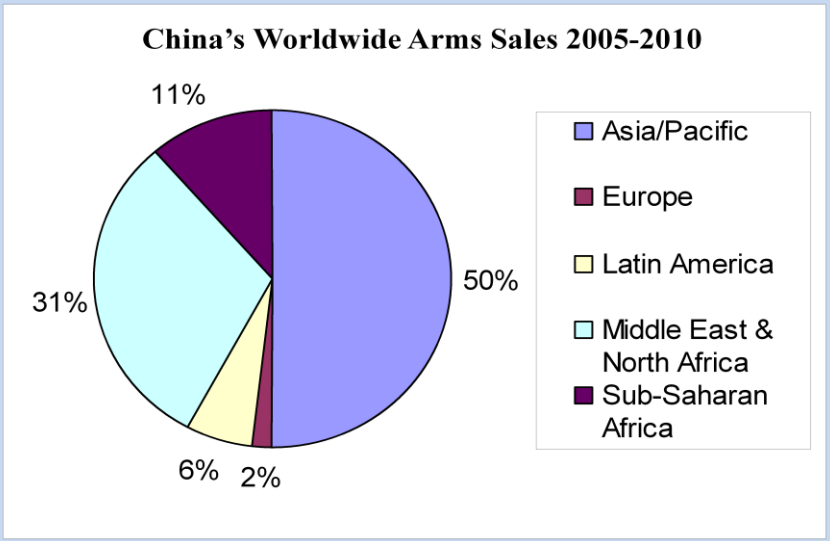
China has also learned that growing capability and capacity can heighten foreign expectations for support. For example, in August 2010, critics suggested that many nations, including China, had reacted too slowly and inadequately to Pakistan's massive flooding. Despite the close political relationship between Beijing and Islamabad, China's early contributions to the 2010 disaster response were small compared to those of other nations.

ARMS SALES

Beijing conducts arms sales to enhance foreign relationships and generate revenue. Although weighted more towards small arms and ammunition, PRC arms sales also include the joint development or transfer of advanced weapons systems. Chinese companies sell primarily to developing countries where China's lower-cost weapons and fewer political constraints provide a competitive advantage. Arms sales also play a role in advancing trade relationships, particularly where energy or valuable raw materials are concerned. For example, arms sales and other forms of security assistance to Iran and Sudan have deepened ties and helped to offset the cost of PRC energy imports. Arms sales play an important role in China's efforts to influence cash-strapped countries, many of which do not have access to other sources of arms for either political or economic reasons. As the quality and range of PRC-produced arms improves, Beijing will be increasingly able to wield arms sales as an instrument of influence.

PRC Arms Sales

From 2005 to 2010, China sold approximately $11 billion worth of conventional weapons systems worldwide, ranging from general purpose materiel to major end items. PRC arms exports will likely increase in the coming years as China's domestic defense industry improves. Although China's defense industry is primarily oriented toward supplying the PLA, foreign arms sales are also important. Arms sales provide a means to cultivate relationships with important strategic partners, such as Pakistan, while generating revenue for its defense industry. PRC defense firms are marketing and selling arms throughout the world, with the bulk of their sales to Asia and the Middle East/North Africa. China is able to make gains in these markets because of modest improvements in quality of its equipment coupled with relatively low costs and favorable conditions for payment.



PRC Worldwide Arms Sales. *Arms sales for 2005-2010, by region.*

From 2005-2010, China sold approximately $11 billion worth of conventional weapons systems worldwide. Pakistan remains China's primary customer for conventional weapons. Beijing engages in both arms sales and defense industrial cooperation with Islamabad. Sales to Islamabad have included the JF-17 fighter aircraft and associated production facilities; F-22P frigates with helicopters; K-8 jet trainers; F-7 fighter aircraft; early warning and control aircraft; tanks; air-to-air missiles; anti-ship cruise missiles; missile technologies; and small arms and ammunition. Sales to other countries include fighter, transport, and jet trainer aircraft; helicopters; tanks; air defense equipment, including radar, rockets, military vehicles, patrol boats, missiles and missile technology; and small arms and ammunition.

China is targeting niche markets, introducing weapons systems not offered by Russian or Western suppliers. These systems include GPS and GLOSNASS-equipped multiple rocket launcher systems and short-range ballistic missiles that have been marketed and sold to Middle East and African partners.

The volume of PRC defense sales is still modest compared to the world's leading arms sellers. However, interest in PRC arms will likely increase in the future as China's defense firms market and sell increasingly sophisticated yet affordable arms. China offers generous repayment options and technology transfer to persuade other countries to purchase from PRC firms.

Sales to Areas of Instability

Several PRC entities continue to provide arms to customers in unstable regions.

- ***Iran***: China supported UN Security Council Resolutions 1737, 1747, 1803, 1835, and 1929. China has stated that it is committed to implementing resolution 1929 and the other resolutions on Iran fully and faithfully, but China has also stated that it does not support sanctions beyond those contained in the UN resolutions. China has stated that it agrees with the United States that a nuclear-armed Iran would pose a grave regional and international threat. The United States is continuing to work closely with China on this issue. A number of PRC transfers to Iran resulted in U.S. trade penalties and sanctions against entities in China. Some weapons that PRC entities supplied to Iran were found to have been transferred to terrorist organizations in Iraq and Afghanistan. This is a serious issue that the United States continues to monitor.
- ***Sudan***: The PRC has at times used its influence with the Sudanese government to address in a positive way international concerns over Darfur and to support the implementation of the Comprehensive Peace Agreement between North and South Sudan. However, China has sided with Khartoum at the UN Security Council, including blocking targeted sanctions against Sudanese officials accused of atrocities. China continues to sell arms to Sudan despite the passage of UN Security Council Resolutions 1556 (2004) and 1591 (2005), both of which ban the transfer of arms to Darfur. Between 2004 and 2006, when the violence in Darfur was at its peak, 90 percent of small arms sales to Sudan were of PRC origin. The PRC argues that arms sales constitute part of normal commercial relations, and that the arms supplied by Chinese companies were not meant for use in Darfur. However, UN Group of Experts and NGO reports have demonstrated that Chinese arms have been used by the Sudanese government in combat operations in Darfur.

CONCLUSION

Beijing's approach to international engagement has evolved with its perception of its own interests in a dynamic security environment. As China's regional and international interests expand, so too will China's impetus for additional engagement, especially in the areas of peacekeeping operations, HA/DR, and joint exercises. In addition to furthering PLA modernization, these engagements will likely be geared toward building China's political ties, assuaging fears about China's rise, and expanding China's international influence, particularly in Asia.

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APPENDIX I:
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	17	5	0
Infantry Brigades	22	9	8
Mechanized Infantry Divisions	6	2	0
Mechanized Infantry Brigades	6	1	3
Armor Divisions	9	4	0
Armor Brigades	8	3	4
Artillery Divisions	2	2	0
Artillery Brigades	17	6	5
Airborne Divisions	3	3	0
Amphibious Divisions	2	2	0
Amphibious Brigades	3	3	3
Tanks	7,000	3,100	1,100
Artillery Pieces	8,000	3,400	1,600

Note: PLA active ground forces are organized into Group Armies. Infantry, armor, and artillery units are organized into a combination of divisions and brigades deployed throughout the PLA's seven MRs. 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.

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.)

Major Ground Units

Taiwan Strait Military Balance, Naval Forces			
	China		Taiwan
	Total	***East and South Sea Fleets***	***Total***
Destroyers	26	16	4
Frigates	53	44	22
Tank Landing Ships/ Amphibious Transport Dock	27	25	12
Medium Landing Ships	28	21	4
Diesel Attack Submarines	49	33	4
Nuclear Attack Submarines	5	2	0
Coastal Patrol (Missile)	86	68	61

Note: The PLA Navy has the largest force of principal combatants, submarines, and amphibious warfare ships in Asia. After years of neglect, the force of missile-armed patrol craft is also growing. 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.

Major Naval Units

Taiwan Strait Military Balance, Air Forces			
China			Taiwan
Aircraft	***Total***	***Within range of Taiwan***	***Total***
Fighters	1,680	330	388
Bombers/Attack	620	160	22
Transport	450	40	21

Note: The PLAAF and the PLA Navy have approximately 2,300 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 R&D. The two air arms also possess approximately 450 transports and over 100 surveillance and reconnaissance aircraft with intelligence, surface search, and airborne early warning capabilities. The majority of PLAAF and PLA Navy aircraft are based in the eastern half of the country. Currently, 490 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.

Major Air Units

China's Missile Force			
System	***Missiles***	***Launchers***	***Estimated Range***
ICBM	50-75	50-75	5,400-13,000+ km
IRBM	5-20	5-20	3,000+ km
MRBM	75-100	75-100	1,750+ km
SRBM	1,000-1,200	200-250	300-600 km
GLCM	200-500	40-55	1,500+ km

APPENDIX II:
MILITARY-TO-MILITARY EXCHANGES

Bilateral and Multilateral Exercises Since 2005

Year	Exercise Name	Type of Exercise	Participants
2005	China-India Friendship 2005	Search and Rescue	India
	China-Pakistan Friendship 2005	Search and Rescue	Pakistan
	China-Thailand Friendship 2005	Search and Rescue	Thailand
	Peace Mission 2005	Counter-terrorism	Russia
2006	Cooperation 2006	Counter-terrorism	Tajikistan
	Friendship 2006	Counter-terrorism	Pakistan
	Unnamed	Search and Rescue	United States
2007	Aman (Peace) 2007	Search and Rescue	Pakistan
	China-France Friendship 2007	Maritime	France
	China-Spain Friendship 2007	Maritime	Spain
	Cooperation 2007	Counter-terrorism	Russia
	Hand-in-Hand 2007	Counter-terrorism	India
	Peace Mission 2007	Counter-terrorism	Russia, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan
	Strike 2007	Counter-terrorism	Thailand
	Western Pacific Naval Symposium	Search and Rescue	United States, France, Japan, Australia, New Zealand, India, Pakistan, ROK, Singapore
	Unnamed	Maritime	India
	Unnamed	Search and Rescue	Australia, New Zealand
2008	Hand-in-Hand 2008	Counter-terrorism	India
	Strike 2008	Counter-terrorism	Thailand
2009	Aman (Peace) 2009	Maritime	Hosted by Pakistan (38 countries participated)
	Cooperation 2009	Counter-terrorism	Singapore

2009	Country-Gate Sharp Sword 2009	Counter-terrorism	Russia
	Peace Angel 2009	Medical	Gabon
	Peace Keeping Mission 2009	Peacekeeping Operations	Mongolia
	Peace Mission 2009	Counter-terrorism	Russia
	Peace Shield 2009	Counter-piracy	Russia
	Unnamed	Maritime	Singapore
2010	Blue Strike/Blue Assault 2010	Counter-terrorism	Thailand
	Cooperation 2010	Counter-terrorism	Singapore
	Friendship 2010	Counter-terrorism	Pakistan
	Friendship Action 2010	Ground (Mountain Warfare)	Romania
	Peace Angel 2010	Medical	Peru
	Peace Mission 2010	Counter-terrorism	Russia, Kazakhstan, Kyrgyzstan, Tajikistan
	Strike 2010	Counter-terrorism	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

Chinese Involvement in bilateral and multilateral military exercises since 2005.

Countries Visited by Senior Chinese Military Leaders, 2005-2010

2005	2006	2007	2008	2009	2010
Argentina	Australia	Argentina	Bahrain	Australia	Angola
Bangladesh	Belarus	Chile	Belarus	Bulgaria	Australia
Cuba	Burma	Cuba	Brazil	Burma	Brazil
Denmark	Cambodia	Greece	Brunei	Finland	Colombia
Egypt	Denmark	Japan	Chile	Germany	Congo
Germany	France	Kuwait	Germany	Japan	Egypt
India	Hungary	Kyrgyzstan	Hungary	New Zealand	Germany
Kazakhstan	India	Mongolia	India	North Korea	Indonesia
Netherlands	Laos	Philippines	Indonesia	Pakistan	Kazakhstan
Philippines	Malaysia	Russia	Italy	Papua New Guinea	Kenya
Russia	New Zealand	South Korea	Japan	Russia	Macedonia
Sudan	North Korea	Thailand	Nepal	Serbia-Montenegro	Mexico
Tajikistan	Norway	United States	Norway	Singapore	Mongolia
Tanzania	Pakistan	Uzbekistan	Oman	Slovakia	Namibia
Turkey	Romania	Vietnam	Qatar	South Korea	New Zealand
Uruguay	Russia		Saudi Arabia	Thailand	North Korea
	Singapore		Serbia-Montenegro	Turkey	Pakistan
	South Korea		Singapore	United States	Romania
	Tajikistan		South Korea	Vietnam	Russia
	Thailand		Tajikistan		Serbia
	United States		Thailand		Singapore
	Vietnam		United Arab Emirates		Tanzania
			Venezuela		Turkmenistan
					United Kingdom
					Vietnam

Senior Foreign Military Officials Visiting China in 2010

Afghanistan	Guyana	Qatar
Algeria	India	Rwanda
Angola	Italy	Serbia
Australia	Japan	Singapore
Austria	Laos	Switzerland
Azerbaijan	Lebanon	Thailand
Belarus	Macedonia	Tonga
Bolivia	Montenegro	Turkey
Burma	Nepal	Uganda
Cambodia	New Zealand	United Arab Emirates
Congo	North Korea	United Kingdom
Cuba	Norway	Vietnam
Ethiopia	Oman	Zambia
Ghana	Pakistan	Zimbabwe
Greece	Poland	

This list includes visits by senior defense officials and chiefs of the armed services. It excludes visits associated with multilateral military exercises.

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