EXECUTIVE SUMMARY

Beijing is pursuing its long-term political goals of developing its comprehensive national power and ensuring a favorable "strategic configuration of power." China's efforts to accomplish its security goals involve an integrated strategy that seeks to apply diplomatic, informational, military, and economic instruments of national power. China's leaders believe that national unity and stability are critical if China is to survive and develop as a nation. Chinese leaders also believe they must maintain conditions of state sovereignty and territorial integrity. While seeing opportunity and benefit in interactions with the United States -- primarily in terms of trade and technology -- Beijing apparently believes that the United States poses a significant long-term challenge.

In support of its overall national security objectives, China has embarked upon a force modernization program intended to diversify its options for use of force against potential targets such as Taiwan, the South China Sea and border defense, and to complicate United States intervention in a Taiwan Strait conflict. Preparing for a potential conflict in the Taiwan Strait is the primary driver for China's military modernization. While it professes a preference for resolving the Taiwan issue peacefully, Beijing is also seeking credible military options. Should China use force against Taiwan, its primary goal likely would be to compel a quick negotiated solution on terms favorable to Beijing.

China is developing advanced information technology and long-range precision strike capabilities, and looking for ways to target and exploit the perceived weaknesses of technologically superior adversaries. In particular, Beijing has greatly expanded its arsenal of increasingly accurate and lethal ballistic missiles and long-range strike aircraft that are ready for immediate application should the PLA be called upon to conduct war before its modernization aspirations are fully realized.

China's force modernization program is heavily reliant upon assistance from Russia and other states of the Former Soviet Union. China hopes to fill short-term gaps in capabilities by significantly expanding its procurement of Russian weapon systems and technical assistance over the next several years. The success of China's force modernization, however, will depend upon its ability to overcome a number of technical, logistical, and training obstacles.

Report to Congress
Pursuant to the FY2000 National Defense Authorization Act

ANNUAL REPORT ON THE MILITARY POWER OF THE PEOPLE'S REPUBLIC OF CHINA

Section 1202 of the National Defense Authorization Act for Fiscal Year 2000, Public Law 106-65, provides that the Secretary of Defense shall submit a report "on the current and future military strategy of the People's Republic of China. The report shall address the current and probable future course of military-technological development on the People's Liberation Army and the tenets and probable development of Chinese grand strategy, security strategy, and military strategy, and of the military organizations and operational concepts, through the next 20 years."

This annual report addresses (1) gaps in knowledge of China's military power; (2) China's grand strategy, security strategy, and military strategy; (3) developments in China's military doctrine and force structure, to include developments in advanced technologies that would enhance China's military capabilities; (4) China's relations with the former Soviet Union; and, (5) the security situation in the Taiwan Strait.

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SECTION I: INTRODUCTION

The report addresses the current and probable future course of military-technological development on the People's Liberation Army (PLA), and the tenets and probable development of Chinese grand strategy, security strategy, and military strategy, and of the military organizations and operational concepts, through the next 20 years. This report to Congress addresses specific questions in five sections on Chinese strategy, military leadership transition, Chinese military forces, China's arms sales from the former Soviet Union, and the security situation in the Taiwan Strait.

This report begins with a cautionary note that was first outlined in the Office of the Secretary of Defense (Net Assessment) *Report to Congress on Implementation of the Taiwan Relations Act* in 2000. The Net Assessment report surveys how little is known about the most significant aspects of Chinese military power. Chinese secrecy is extensive. China's December 2002 Defense White Paper, despite official claims that it reflects increased transparency, continues to reveal little about the quantity or quality of China's military forces, to include the PLA budget. China's defense spending may be more than three times larger than its public announcement in March 2002 of a defense budget of about $20 billion. Since the 1980s, U.S. military exchange delegations to China have been shown only "showcase" units, never any advanced units or any operational training or realistic exercises.

A. Knowledge Gaps

The Department of Defense (DoD) has identified three gaps in U.S. knowledge about Chinese military power. First is China's military power juxtaposed to that of Taiwan. There is much more the United States can learn about both sides' ideas of statecraft, their approaches to the use of force, their perceived vulnerabilities, and their preferred operational methods, as well as about the political and military organizations that produce military assessments and plans. Second are such intangible Chinese capabilities as logistics, doctrine, and command and control. Finally, although DoD has highlighted Beijing's greater interest in coercion and pre-emption strategies and identified emerging methods of warfare that appear likely to be increasingly important in the future – particularly missiles and information warfare – it is difficult to assess confidently how these developments will affect the overall military balance.

B. Key Developments

Over the last few years, DoD has identified improvements in China's military capabilities in a significant number of areas. Recent developments with regards to China's military power include:

- Leadership Transition. Military turnover on the Central Military Commission (CMC) at the 16th Chinese Communist Party (CCP) Congress in November was significant, including the selection of two new Vice Chairmen. Jiang Zemin, however, retained his position as CMC Chairman, ensuring his continued influence over China's strategic

objectives and military modernization program, which will not change. Younger military leaders now dominating the CMC are better prepared than their predecessors to further the key areas of the PLA's modernization; as a group, they have operational experience in weapons integration, logistics, command, control, communications, computers, and intelligence (C4I), and more realistic training, to include Taiwan scenarios.

- Doctrine of Preemption and Surprise. Chinese doctrine continues to emphasize surprise, deception, and shock effect in the opening phase of a campaign. In addition to development or procurement of "Assassin's Mace" weapon systems to counter intervening U.S. forces, China is exploring coercive strategies designed to bring Taipei to terms quickly.

- Military Budget. In March 2002, China announced a 17.5 percent or $3 billion increase in spending, bringing the publicly reported total to $20 billion. Estimates of total spending range from $45 billion to $65 billion; annual spending could increase in real terms three- to four-fold by 2020. For the fourth year in a row, contracts for advanced weapons systems from Russia were $ 2 billion--double the average annual figure throughout the 1990s.

- Improvements in Training, Combined Arms, and Joint Operations. Beijing's military training exercises increasingly focus on the United States as an adversary and on preparing for combined arms and joint operations under more realistic conditions.
    - The PLA continues to focus on training to counter a more militarily advanced adversary and to incorporate the *Three Attacks and Three Defenses* initiative -- air defense training that concentrates on attacking stealth aircraft, cruise missiles, and helicopters, while defending against precision strikes, electronic warfare, and enemy reconnaissance.
    - Adoption of military training reforms in 2002 is intended to improve officer and enlisted training, eventually resulting in a more professional military force.
    - Selected ground force units are continuing to mechanize, increasing the PLA's mobility.
    - In 2002, PLA training continued to emphasize maritime and amphibious operations, and the integration of conventional ground units with marines, airborne, and special operations forces (SOF). Exercises continued to improve the PLA's abilities to deploy and sustain its forces.

- Missile Development.
    - China has approximately 450 short-range ballistic missiles (SRBMs) already in its deployed inventory. This number is expected to increase by over 75 missiles per year for the next few years. The accuracy and lethality of this force also are increasing. The PLA is developing variants of the CSS-6 that enable attacks against Okinawa when forward-deployed or against Taiwan when deployed further inland.
    - All of China's known SRBM assets are believed to be based in the Nanjing Military Region opposite Taiwan. The number of conventional ballistic missiles

deployed opposite Taiwan is expected to increase substantially over the next several years.
  - China is replacing all of its approximately 20 CSS-4 Mod 1 intercontinental ballistic missiles (ICBMs) with the longer range CSS-4 Mod 2. China also is developing two follow-on, extended-range versions of the DF-31: a solid propellant, mobile ICBM and a solid propellant submarine-launched ballistic missile (SLBM).

- Air Power.
  - China has acquired additional Su-30MKK fighter aircraft from Russia. China also is producing Su-27 front-line fighter aircraft. Over the past three years, the Su-27s and Su-30s have been more rapidly integrated into operational units.
  - PLA Air Force (PLAAF) and PLA Naval Air Force (PLANAF) tactical forces are developing and acquiring advanced air-launched munitions. China has acquired the AA-12/ADDER active-radar guided air-to-air missile (AAM) from Russia. According to Moscow press reports, the PLANAF will acquire a naval strike version of the Su-30, which will be capable of launching anti-ship cruise missiles (ASCMs).
  - China reportedly has developed electronic warfare variants of several of its larger aircraft, and may have several programs underway to deploy new standoff and escort jammers on bombers, transports, tactical aircraft, and unmanned aerial vehicle (UAV) platforms.
  - China, which introduced an airborne early warning (AEW) aircraft, the Y-8 AEW, in 1999, also is looking to acquire the A-50/MAINSTAY airborne warning and control system (AWACS) aircraft from Russia.
  - China has been upgrading its air facilities along the Taiwan Strait.
  - Air combat tactics continue to evolve and pilot training is becoming more advanced.

- Naval Forces. Naval enhancements include greater familiarization and crew proficiency on recently acquired platforms and associated weapon systems, as well improvements in the PLA Navy's (PLAN) maritime surveillance capability.
  - The PLAN is continuing efforts to enhance its force projection options by improving its capability to deploy submarines on extended patrols, and building and outfitting surface ships with more capable air defense assets and more lethal ASCMs.
  - China has approximately 40 amphibious vessels, which would be augmented by civilian assets for ship-to-shore operations. China also has a large civilian merchant fleet that could be pressed into service to support amphibious operations.
  - The PLAN's first two Russian-made SOVREMENNYY-class guided missile destroyers are fully integrated into China's naval fleet operations. Beijing has signed a contract with Moscow for two additional SOVREMENNYY destroyers and continues to acquire additional advanced Russian-made weapon systems.
  - China has produced the diesel-electric SONG submarine, the first Chinese submarine to have a skewed propeller. The SONG also is the first Chinese

submarine designed to carry the YJ-82, China's first encapsulated ASCM capable of launching from a submerged submarine.
  - Beijing already has purchased from Moscow four KILO SS, one of the quietest diesel-electric submarines in the world. China's contract with Russia for eight new Project 636 KILOs in June 2002 includes such weapons as the 3M-54E Novator Alpha ASCM, the wire-guided Test-71ME heavyweight torpedo, and the 53-65KE wake homing torpedo. The KILO also provides Beijing with access to previously unavailable quieting and weapons technologies.
  - China has produced a new nuclear-powered attack submarine class -- the Type 093 class SSN -- which will carry wire-guided and wake-homing torpedoes and cruise missiles.

- Air Defense and Detection.
  - The SA-N-7 naval surface-to-air missile (SAM), acquired from Russia, provides the most capable medium-range surface-to-air defense system for the PLAN in the near term. Technology from the SA-N-7 probably could assist with the development of an indigenous naval SAM system. Over the next ten years, the PLAN likely will acquire from Russia and/or develop a long-range naval missile roughly equivalent to the shore-based SA-10/20.
  - The land-based version of the long-range HQ-9 SAM is in development. Based on precedents, China probably will produce a naval variant of the HQ-9, incorporating Russian and Western technology.

- Land Forces and Armor. During the past year, the PLA ground force revealed important improvements, evidenced by an increase in training tempo and equipment upgrades.
  - The PLA has begun a program to upgrade the main gun on its mainstay Type 59 main battle tanks, as well as maintain over 1,000 tanks already equipped with the 105-mm gun.
  - Several new or updated armor assets are making their way into the PLA ground force inventory, to include a light tank, an amphibious tank, and an amphibious armored personnel carrier (APC).
  - Production of the Type 96 tank continues, with about 1,500 expected to be deployed by 2005.
  - Since the mid-1990s, many of the army's roughly 100 maneuver divisions have been downsized or deactivated, leaving approximately 40 divisions and 40 brigades, freeing more resources for modernization.
  - The PLA may be contemplating another large-scale force reduction in the next few years, a move that would allow it to increase funding for high-priority units and equipment purchases.
  - The PLA is looking to consolidate and streamline logistics support.
  - The PLA has improved its amphibious attack capabilities in recent years and is steadily expanding its ability to transport ground forces by air and sea.

- Command, Control, Communications, Computers, and Intelligence (C4I).
  - C4I modernization and automation has been a Chinese priority for nearly 25 years. China has constructed a command network capable of rapidly passing

orders and information up and down the chain of command and moving intelligence to decision makers at the national and war zone levels.
    - China is steadily improving its C4I capabilities by leveraging commercial information technologies to advance ambitious state plans to create a high-tech electronic environment capable of supporting a modern military in peacetime and wartime.
    - However, despite remarkable progress in the late 1990s, China still lags behind western standards for integrating and controlling complex joint military operations and has not adequately assimilated new C4I architectures into the plans and operations required to train and fight in a modern battlespace.

- Intelligence, Surveillance, and Reconnaissance (ISR). China's development and deployment of state-of-the-art intelligence, surveillance, and reconnaissance (ISR) capabilities is uneven. China may have as many as three over-the-horizon (OTH) sky-wave and two surface-wave OTH radars.

- Information Operations/Information Warfare (IO/IW).
    - China's application of IO/IW stresses control, asymmetry, computer warfare, network warfare, temporal-spatial analysis, knowledge warfare, information protection, and electronic security. It also includes an unusual emphasis on a host of new information warfare forces instead of the information superiority and "system of systems" approaches popular in the United States.
    - Specialized IO/IW reserve units are active in several cities developing "pockets of excellence" that could gradually develop the expertise and expand to form a corps of "network warriors" able to defend China's telecommunications, command, and information networks, while uncovering vulnerabilities in foreign networks.

- Electronic Warfare.
    - China has made electronic warfare (EW) a key component of the CMC's *Three Attacks and Three Defenses* initiative to meet requirements of a "local warfare under high-tech conditions." Beijing is focused on technology and design development mainly through cooperation with Western companies and by reverse engineering. China's latest systems are significantly improved over their predecessors.
    - China is procuring state-of-the-art technology to improve its intercept, direction finding, and jamming capabilities. It also may be developing jammers, which could be used against Global Positioning System (GPS) receivers.
    - The PLA is experimenting with new EW units to field test the latest EW systems and new operational concepts.

- Laser Weapons. China is pursuing a robust research and development program for laser weapons. In 1995, China exhibited a man-portable laser weapon called the ZM-87 that was advertised for blinding human vision and electro-optical sensors. In 1999, the Chinese displayed a probable laser-based, anti-tank guided missile (ATGM) countermeasure on its Type 90-II tanks. In addition, Beijing produces a laser false-target generator intended as a decoy against laser semi-active homing munitions.

- Radiofrequency Weapons. Chinese scientists have written about -- and China probably has in place -- a program to develop explosively driven radiofrequency (RF) weapons technology that potentially could be used in missile warheads or aircraft bombs.

- Space Warfare.
    - Beijing may have acquired high-energy laser equipment that could be used in the development of ground-based anti-satellite (ASAT) weapons.

SECTION II

GOALS AND TRENDS IN CHINESE STRATEGY

A. Grand Strategy

Goals of Grand Strategy

China has not publicly articulated an authoritative, official statement of its "grand strategy." Chinese military strategists define grand strategy as the "overall strategy of a nation or an alliance of nations in which they use overall national strength" to achieve national political goals, especially those related to national security and development.

China's grand strategy attempts to balance two often competing objectives. One is developing what it calls the nation's "comprehensive national power" (CNP). The other is exploiting to maximum advantage the existing "strategic configuration of power" or "*shi*," to preserve national independence and enable China to build "momentum" in its effort to increase national power.[1] The relative priority that the national leadership places on these two objectives is subject to adjustment and change, depending on how China assesses the opportunities and challenges in the "strategic configuration of power."

CNP is the concept by which China's strategic planners evaluate and measure national standing in relation to other nations. It first appeared in conjunction with China's former paramount leader Deng Xiaoping's national development strategy in the early 1980s. It represents an adaptation of Western methodologies for monitoring and assessing national power, fused with traditional Chinese concepts of statecraft and strategy, which placed a heavy emphasis on calculations and estimates of relative power among nations. The current approach applies quantitative and qualitative evaluations of politics, economics, military, science and technology, and foreign affairs to determine relative CNP.[2]

Beijing states that its current number-one strategic priority is economic development. In addition to the important function it plays in raising living standards, economic development is regarded as an important step in gradually increasing China's international leverage and military modernization. An economically stronger China also, over time, would enhance its relative CNP and could allocate its resources for a more favorable "strategic configuration of power."

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[1] There is no Western equivalent to the concept of "*shi*." Chinese linguists explain it as "the alignment of forces," the "propensity of things," or the "potential born of disposition," that only a skilled strategist can exploit to ensure victory over a superior force. Similarly, only a sophisticated assessment by an adversary can recognize the potential exploitation of "*shi*."

[2] This definition of Comprehensive National Power (CNP) is used primarily by the PLA Academy of Military Science (AMS). However, the China Academy of Social Sciences (CASS) uses a slightly different set of measures: politics, economics, science and technology, and foreign affairs. See Chapter 5 of *China Debates the Future Security Environment* (National Defense University Press, 2000).

While China's national leadership focuses on overall national development, it is constantly assessing the broader "strategic configuration of power" for potential challenges or threats that might prompt it to adjust or change its grand strategy, as well as for opportunities to advance national interests. In particular, China's leaders believe that three essential conditions – national unity, stability, and sovereignty – must exist if China is to survive and develop as a nation. Among these conditions, Beijing judges that national unity is the most important. Beijing's preoccupation with maintaining unity is driven by China's internal and external security environment and national condition, historical experience, national goals, and, perhaps most importantly, challenges to the CCP's legitimacy.

Ensuring domestic stability and a secure international environment is crucial to Beijing's national development strategy. Senior leaders currently are focused on the short-term task of ensuring regime stability by maintaining domestic order and leadership control while dealing with several sources of internal unrest and instability. Chinese leaders also believe they must maintain conditions of state sovereignty and territorial integrity. This view is reflected in China's response to a range of international issues, including human rights and democracy, and territorial and resource disputes with its neighbors.

Should China become involved in a major war, the relative priority it places on its national goals is likely to change. In peace time, there is an effort to arrive at a favorable "strategic configuration of power" more gradually—through economic development— but that effort might be eclipsed in a crisis. Deng Xiaoping and Jiang Zemin both indicated publicly that the goal of reestablishing a favorable "strategic configuration of power" would override the goal of developing national power if China faced a fundamental threat to its national unity, internal stability, or sovereignty.

Such circumstances were defined as situations in which China faced the credible prospect of a military invasion of the mainland, or the nation was involved in a large-scale war, such as a major war between China and Taiwan that included direct U.S. military intervention. While Deng and Jiang indicated that ensuring a favorable strategic "configuration of power" would be the primary national goal in such situations, they also clearly emphasized that one of China's war aims would be to end the war on favorable terms as soon as possible so that Beijing could refocus on the goal of developing national power.

Sources of Grand Strategy

China's grand strategy has been influenced primarily by a combination of the ancient tenets of Chinese statecraft as well as more modern national development theory. While ancient Chinese statecraft and national development theories are dominant, other factors also shape China's grand strategy. China has had a longstanding geopolitical challenge in maintaining control over the heartland of China and major elements of "Inner Asia." It also has sought to secure the vast periphery of coastal and land boundaries, as well as maritime territory in a region populated by traditional rivals and enemies. These challenges shape how China approaches grand strategy, especially its emphasis on maintaining a favorable domestic and international "strategic configuration of power." Moreover, Marxist and Maoist ideology, as well as lessons from the Sino-Japanese war and the Chinese civil war, are prevalent in China's approach to grand

strategy. Finally, the Chinese study how other nations approach international security affairs, to include grand strategy, in an effort to enhance their own approach to the issues of strategy, security, and development.

Beijing has sought to describe its long-term political goals of developing CNP and ensuring a favorable strategic configuration of power in positive, passive, cooperative, benign, and peaceful themes. These themes include China's emphasis on "peace and development," the non-use of force in settling international disputes, non-intervention in the internal affairs of other countries, the defensive nature of China's military strategy, its "no-first-use of nuclear weapons" declaration, its support for nuclear-free weapons zones, and claims that China would never deploy its military forces on foreign soil.

These principled themes should not, however, obscure the ambitious nature of China's national development program and the nature of China's approach to the use of force, which is contingent on the actions of others, rather than inherently passive or defensive as Chinese commentators often vigorously assert. In particular, sovereignty issues that Beijing considers internal and defensive in nature -- most notably Taiwan -- may not be perceived by others as benign and peaceful. In addition, Beijing probably calculates that ambiguity in international discourse helps to buy China time in developing its national power.

One of Deng Xiaoping's key directives to China's security and development establishment was the so-called "24- character strategy:" "keep cool-headed to observe, be composed to make reactions, stand firmly, *hide our capabilities and bide our time*, never try to take the lead, and be able to accomplish something" (emphasis added). This often-quoted maxim not only suggests a desire to downplay China's ambitions; it also affirms a long-term strategy to build up China's CNP with a view to maximizing China's options in the future. There are, however, some indications that China may, at least on the diplomatic front, be trying to take a more active role in regional affairs -- through bodies such as the Shanghai Cooperation Organization -- and in global affairs, including issues such as Iraq that are related to international security.

From Beijing's perspective, strategic ambiguity--including strategic denial and deception--is a mechanism to influence the policies of foreign governments and the opinions of the general public and elites in other countries. China's leaders believe that ambiguity and stressing the "just nature" of Chinese actions have the effect of "drawing out" those who oppose and those who support China's interests abroad. Once China's leaders make the distinction between friend and foe, they can develop and tailor themes to counter opposition and advance their overall agenda. Moreover, such distinctions position China to reward "friends" abroad, or alternatively, punish "enemies" to enhance its own position in the balance of power.

B. Security Strategy

Security Assessment

As with its "grand strategy," China has not publicly articulated a "national security strategy" in a format similar to that used by the United States. China's efforts to accomplish its security goals involve an integrative strategy that applies diplomatic, informational, economic, and military

instruments of national power. China's national security leadership structure is based on a traditional Leninist model in which the party apparatus mirrors the state system and plays the dominant role in strategy and policy formulation and oversight. The party function is facilitated by "cross leadership" -- the practice of "dual-hatting" party cadres with government positions. For example, Hu Jintao, the CCP General Secretary since the 16th Party Congress in November 2002, also replaced Jiang Zemin as State President at the 10th National People's Congress (NPC) in March 2003.

While seeing opportunity and benefit in interactions with Washington -- primarily in terms of trade and technology -- Beijing apparently believes that the United States poses a significant long-term challenge. China's leaders have asserted that the United States seeks to maintain a dominant geostrategic position by containing the growth of Chinese power, ultimately "dividing" and "Westernizing" China, and preventing a resurgence of Russian power. Beijing has interpreted the strengthened U.S.-Japan security alliance, increased U.S. presence in the Asia-Pacific region -- including Central Asia -- and efforts to expand NATO as manifestations of Washington's strategy.

Beijing probably assesses that U.S. efforts to develop missile defenses will challenge the credibility of China's nuclear deterrent and eventually be extended to protect Taiwan. In Beijing's view, this development would degrade the coercive value of its growing conventional ballistic-missile capability opposite the island and constitute a *defacto* military alliance between Washington and Taipei. Beijing continues to voice opposition to missile defense, as well as concern regarding U.S. withdrawal from the Anti-Ballistic Missile Treaty. It also argues against Taiwan's inclusion in a missile defense system, albeit less stridently than in previous years.

Chinese analyses indicate a concern that Beijing would have difficulty in managing potential U.S. military intervention in crises in the Taiwan Strait or the South China Sea. Past Chinese concerns that the United States might intervene in internal disputes with ethnic Tibetan or Muslim minorities -- in part reinforced by their perceptions of the U.S. response to the 1995-1996 Taiwan Strait crises, Operation ALLIED FORCE in Kosovo, and, more recently, U.S.-led military operations in Afghanistan and Iraq -- probably have been tempered by Beijing's recognition that unlike Kosovo, China is a nuclear power, which lowers the probability of a U.S. attack on Chinese territory.

While these concerns and longstanding assessments of the international security environment have not changed fundamentally in recent years, a leadership consensus appeared to emerge from the 16th Party Congress that Beijing can best advance its interests by projecting a positive, cooperative image to the international community and to the United States, in particular. Indications of a shift in Beijing's approach became apparent during 2002 and early 2003 when Beijing increased its contacts with NATO, played an active role in the Iraq issue and voted for Resolution 1441 and 1483 in the UN Security Council, and responded moderately to U.S.-Taiwan defense ties, missile defense, and a number of other contentious issues in Sino-American relations.

China's efforts to create a more cooperative image also can be seen in its economic and diplomatic relations with the Association of Southeast Asian Nations (ASEAN) in 2002, which

included the signing of a *Declaration of a Code of Conduct in the South China Sea* and a *Framework Agreement on Comprehensive Economic Cooperation* for negotiating an ASEAN-China free trade agreement within ten years. Beijing also pushed for a greater role in Central Asia through the Shanghai Cooperation Organization (SCO), highlighted by late 2002 border exercises with the Kyrgyz military and indications that Beijing is considering participating in UN peacekeeping operations in Afghanistan.

While China maintains an ambivalent -- if not skeptical -- attitude toward the U.S. presence in the Asia-Pacific region, China's 2002 Defense White Paper -- in contrast to the 2000 Defense White Paper -- did not explicitly criticize U.S. activities in the region and is significantly more moderate in tone. Nonetheless, the new Defense White Paper continued to reference indirectly the U.S. presence in the region in stated concerns over increased regional military alliances, missile defense, and "certain countries" that sell weapons to Taiwan. The paper also mentions other more general regional security concerns -- South Asia, Afghanistan, and the Korean Peninsula -- and, for the first time, mentions global and regional terrorism as a major security concern.

Beyond its more traditional security concerns, China's strategic planners are beginning to recognize global and transnational threats such as HIV/AIDS, environmental degradation, international crime and narcotics trafficking, and the proliferation of weapons of mass destruction (WMD). In addition, Beijing promulgated and updated, in 2002, regulations intended to exert increased control over exports of dual-use technology that could be used for WMD and their delivery systems in an effort to align itself further with international non-proliferation norms. Finally, in part stemming from over two decades of "reform and opening up," China's leaders increasingly perceive threats to "economic security," "information security," and the erosion of national independence as a consequence of globalization. These concerns will only grow in future years with China's integration in the World Trade Organization (WTO).

While stressing the primacy of economic power, Beijing views the military as necessary to ensure that China's economic power will rise, to protect important national interests, and to support China's eventual emergence as a great power and the preeminent power in Asia. Nevertheless, China's leaders starting with Deng Xiaoping have placed military modernization behind other priorities such as development in agriculture, industry, and science and technology. This placement is based on a calculation that broad-based modernization will raise overall levels of industry, technology, and human resources to sustain long-term military modernization.

Debate over the proper ordering of China's national priorities has surfaced periodically, particularly in the face of external challenges to China's security interests. For example, following Operation ALLIED FORCE in 1999, Beijing seriously considered upgrading the priority attached to military modernization. While the senior leadership has since reaffirmed its emphasis on economic growth and development, it nevertheless agreed to provide significant additional resources and funding to support accelerated military modernization. During the 16th Party Congress last year, China's leaders reaffirmed their primary commitment to economic development and their continued support for military modernization, indicating that the new leadership will continue this policy.

A key variable in assessing long-term trends in the PRC's security strategy is Taiwan. One of Beijing's priority security interests is to prevent further steps by Taiwan toward permanent separation from the mainland and to secure the eventual resolution of the Taiwan issue on China's terms. Taiwan's integration under mainland authority is considered to be an essential step toward completion of national reunification. Over the last year, Beijing has adopted a more moderate public approach toward Taiwan, in large part because it sees little opportunity to press its case until Taiwan's next presidential election in March 2004. Nonetheless, Beijing remains inflexible in its fundamental principle of agreeing to cross-Strait dialogue only under the conditions of a "one China, two systems" framework.

Beijing seeks national unification to satisfy cultural and nationalist sentiment, but also to address perceived political and security interests. Beijing assesses that the permanent separation of Taiwan from the mainland could serve as a strategic foothold for the United States. Conversely, securing control over Taiwan would allow China to move its defensive perimeter further seaward. China's Taiwan strategy will continue to emphasize a coercive approach toward Taipei and Beijing's decision-makers have affirmed that they will resort to force if Taiwan's present *de facto* separation becomes official, either through a declaration or international recognition as such. Moreover, China's leaders have threatened force if they fail to make progress toward "reunification" objectives. Despite the omission of this threat in the 2002 Defense White Paper, the 16th Party Congress report asserts that "the Taiwan issue must not be allowed to stall indefinitely."

In addition to preventing Taipei's moves toward *de jure* independence, Beijing seeks to counter what it perceives to be Japan's growing military cooperation with the United States and to prevent a rebirth of Japanese "militarism". At the same time, it continues to value the economic benefits it derives from access to Japanese technology, trade, and foreign investment. Beijing's other important security goals in East Asia include preventing the development and implementation of a regional theater missile defense system, particularly one involving Taiwan; coping with challenges to its claims in the East and South China Seas; and supporting its economic interests through bilateral and multilateral mechanisms, such as the ASEAN, the Asia-Pacific Economic Cooperation (APEC) process, and the ASEAN Regional Forum (ARF).

The United States will remain central to these regional priorities. Consequently, China's actions in the region will be shaped by its assessment of U.S. policies, particularly Washington's regional alliance and defense relationships. While seeking a stable relationship with Washington, Beijing will continue to seek opportunities to diminish U.S. regional influence.

Key Trends Affecting Security Strategy

Three key factors likely will remain fundamental in shaping Chinese security policy over the long term, regardless of the outcome of a Taiwan conflict or the change in the nature of the Chinese regime.

First, China's future leaders probably will continue to pursue economic growth and technology amidst efforts to manage the information revolution and promote bureaucratic

professionalization. Second, globalization and China's linkage to the outside world will continue and expand. Third, there will be pressure for political change. China will continue to face economic and internal challenges, some of which have gathered momentum with WTO accession; the demands on the regime from both internal and external sources will persist. Consequently, China will continue to perceive challenges from the West but will continue to seek technology, wealth, and power associated with the Western system; however, it will continue to maintain that Western political concepts and culture are antithetical to its interests.

C. Military Strategy

China's leaders believe that the control and use of the armed forces and other coercive instruments of power are essential components of their security strategy. China does not have a document directly equivalent to the U.S. "National Military Strategy." The closest approximation is a document referred to as the "National Military Strategic Guidelines for the New Period."

PLA strategists are beginning to discuss in professional journals issues such as the efficiency accrued through limited applications of force to accomplish political goals. Moreover, advances in military technologies will provide China's leaders over the long term with an expanded set of options. These enhanced capabilities have given rise to and will sustain a trend in which China's warfighting strategies increasingly favor coercive over annihilative approaches.

Trends in Military Strategy

The principal areas where China appears to be making advances in coercive military capabilities involve airpower, missiles, and information operations. Military coercion also can be accomplished through the use of blockades or quarantines. Further, the use of ground forces may provide the final "shock value" necessary to destroy the adversary's will to resist. Finally, China's leaders likely would employ political and psychological intimidation, and possibly economic coercion.

SECTION III

Leadership Transition

The November 2002 16th Chinese Communist Party (CCP) Congress marks the transition to a new generation of leaders, but the complete handover of power and responsibility from Jiang Zemin is expected to take several years. The Politburo Standing Committee, the center of political and decision-making authority in China, was completely overhauled, with every member except Hu Jintao replaced. As expected, Hu was elevated to the position of Party General Secretary, replacing Jiang Zemin. Jiang retained the Chairmanship of the Central Military Commission (CMC), and appears to be emulating former paramount leader Deng Xiaoping who exercised influence over party affairs through control of the armed forces. Significant changes occurred among other members of the CMC, including the elevation of two new Vice Chairmen and appointment of three new members.



Hu Jintao was selected to replace Jiang Zemin as General Secretary at the 16th Party Congress in November 2002. He is replaced Jiang as State President in March 2003.

Jiang Zemin's re-appointment as CMC Chairman allows him to shape security priorities and policies for China's new military leaders. The pace of military modernization and key objectives will not change. The military will continue to receive annual increases in its budget and will continue to focus on modernizing for "local warfare under high tech conditions," including Taiwan scenarios.

Younger military leaders now dominating the CMC are better prepared than their predecessors to further the PLA's modernization in key areas; as a group, they have operational experience in weapons integration, logistics, C4I, and more realistic training. However, uniformed membership in the CMC continues to be comprised solely of army officers, which reflects institutional barriers to PLA Navy and Air Force officers and impedes implementing a truly "joint" operations doctrine.

The two new senior uniformed officers, CMC Vice Chairmen Guo Boxiong and Cao Gangchuan, will support PLA modernization efforts. Guo's operational background and experience in developing new applications of battlefield technologies, for example, will complement Cao's acquisition and program development experience as head of the PLA General Equipment Department. Liang Guanglie, the new Chief of the General Staff, has been heavily involved in exercises for Taiwan contingencies.

SECTION IV

PRC MILITARY MODERNIZATION

Preparing for a potential conflict in the Taiwan Strait is the primary driver for China's military modernization. Beijing is pursuing the ability to force Taiwan to negotiate on Beijing's terms regarding unification with the mainland. It also seeks to deter, deny, or complicate the ability of foreign forces to intervene on Taiwan's behalf. Beijing has been influenced by the emerging revolution in military affairs (RMA) and is seeking the means to counter advances the United States has made. Chinese doctrine stresses surprise, deception, and preemption as a means to offset weaknesses in equipment and other areas. Currently, China's conventional SRBM force is its most credible and immediate threat to Taiwan.

A. PRC Operational Doctrine

Evolution of PRC Operational Doctrine

The evolution of PLA operational doctrine has mirrored changes that have taken place in PRC security and military strategy since the mid-1980s.

Effect of the Revolution in Military Affairs (RMA). China's more forward-looking strategists note the 1991 Gulf War's role in bringing the emerging RMA into sharp focus for the PLA. In particular, PLA observers witnessed how quickly the force, equipped with high-tech weapons systems, defeated the Iraqi force that resembled the PLA in many ways. The force and capability displayed by the coalition during that conflict prompted PLA theorists to alter their perceptions of the character of future wars, highlighting the role of air and air defense operations, electronic and information warfare, and long-range precision strikes.

At the same time, the PLA observers judged that the technological advances surrounding the RMA also increased the demands on military forces in other areas, to include greater emphasis on C4ISR, combined arms and joint service operations, the need for professional, technically qualified personnel to operate and maintain advanced equipment, and the need, especially, for a professional corps of non-commissioned officers. The PLA has been trying to improve all these areas.

U.S. observations of the RMA also have migrated into PLA thinking on the impact of the RMA on future warfare. Over time, the internalization of U.S. and other foreign concepts of RMA will be manifested in actual changes in doctrine, strategy, tactics, and equipment.

China's military planners are working to incorporate the concepts of modern warfare attributed to the RMA and have placed a priority on developing the technologies and tactics necessary to conduct rapid tempo, high-technology warfare in Asia.

On balance, PLA authors assess that the current RMA holds the potential for producing radical new forms of warfare, enhanced information warfare, networks of systems, and "digitized"

combat forces. At the same time, however, based on observations and lessons learned from the Gulf War and Operation ALLIED FORCE, Beijing perceives certain weaknesses in what it considers U.S. over-reliance on technological advances offered by the RMA. Consequently, revised PLA doctrine, in addition to incorporating RMA advances, emphasizes measures to target and exploit its weaknesses.

Evolution Since the 1991 Gulf War. Operation ALLIED FORCE in 1999 appears to have had at least as much impact on PLA thinking as the Gulf War, although more as a validation of earlier assessments of the trends of modern warfare than as a catalyst for change. PLA commentary on NATO's Kosovo air operation concluded that a superior enemy's situational awareness and precision-strike systems could be stymied through effective, and often low-tech, counter-reconnaissance measures such as camouflage and concealment, simple decoys, dispersion, and frequent movement of forces. NATO air operations reinforced the PLA's focus on the use of underground facilities, landline communications, and well-concealed supply depots.

The Serbian military's survival in a modern battlefield against a superior force reportedly impressed PLA observers. These observers, however, also noted that the Serbs suffered from inferior equipment, inadequate defense of civilian installations, and poor logistics.

The PLA implemented lessons from Operation ALLIED FORCE in the restructured *Three Attacks and Three Defenses* air defense training regime. *Three Attack and Three Defenses* concentrates on attacking stealth aircraft, cruise missiles, and helicopters, while defending against precision strikes, electronic warfare, and enemy reconnaissance. Many PLA training events also now incorporate this new training regime. Although it is still too early to tell what lessons the PLA has learned from the U.S. operations in Afghanistan and Iraq, the Chinese media have highlighted the use of U.S. Special Operations Forces and mobile warfare in the Afghan conflict.

Current PLA Operational Doctrine

Doctrinal literature is developed by the PLA Academy of Military Science (AMS) under the authority of the CMC and in close coordination, probably, with the PLA General Staff Department (GSD)**.** The AMS is responsible for the development of theoretical and applied military strategy, operational theory and methodology, and combat tactics for China's armed forces. Service-specific tactics, techniques, and procedures are developed variously by the Navy, Air Force, and Second Artillery; however, each service must adhere to the greater context and guidance for military strategy and operations at the theater level of war and above promulgated by the AMS. Officers from the AMS Campaign and Tactics Department had a major role in developing the new operational regulations. This department also is responsible for drafting and writing documents and manuals that are the functional equivalents of U.S. Joint Publications and Field Manuals. Very little is known, however, about the actual substance of the new operational directives that emerged in 1999.

The Role of Surprise and Pre-Emption in Local Conflicts

PLA operational theory reflects the transition undertaken during the 1990s to shift from predominately annihilative to coercive war-fighting strategies. Shock and surprise are considered by PLA strategists as crucial to successful coercion. Accordingly, PLA operational theory emphasizes achieving surprise and accruing "shock power" during the opening phase of a campaign. The pre-eminent role that surprise and pre-emption have in potential conflicts is best illustrated in the fundamental principles of "Actively Taking the Initiative" and "Catching the Enemy Unprepared" in PLA operational doctrine.

- "Actively Taking the Initiative" stresses the necessity of attack at the optimal point and time to catch the enemy unprepared.
- "Catching the Enemy Unprepared" emphasizes the role of concealment of intentions and capabilities through camouflage, deception, feints, and the use of stratagem to allow a relatively small force to dominate the enemy through surprise.

Throughout the 1990s, PLA writers highlighted pre-emptive strikes as a means to offset advantages that a technologically superior power brings to the fight. Lessons from Kosovo added impetus to developing a capacity for offensive operations against targets at the operational and strategic levels of warfare. PLA writers have asserted that offensive strike assets, which are more cost-effective than defensive assets, must focus on an opponent's ability to carry out strikes and/or conduct counterattack operations. The measure of effectiveness, in this context, is not the capture of territory but the effects the strikes have on an enemy's ability to resist.

The PLA believes that surprise is crucial for the success of any military campaign, and it likely would not be willing to initiate any military action unless assured of a significant degree of strategic surprise. With no apparent political prohibitions against pre-emption, the PLA requires shock as a force multiplier, to catch Taiwan, or another potential adversary such as the United States, unprepared. Observers such as PLAAF Chief of Staff LTG Zheng Shenxia have noted that without adopting a pre-emptive doctrine, the chances of a PLA victory are limited.

PLA writings indicate a number of methodologies that could enhance the success of surprise, including strategic and operational deception, electronic warfare, and wearing down or desensitizing an opponent's political and military leadership. At least one objective would be to reduce indications and warning of PLA military action.

Operational Considerations Against Technologically Superior Adversaries

The relative technological inferiority of the PLA has led to the exploration of asymmetric methods enabling "the inferior to defeat the superior."

PLA writings suggest that China's armed forces remain relatively confident of their ability to defeat a regional military force of comparable technological development with traditional battles of annihilation, or operations that rely on mass and attrition to attack the enemy forces, formations, and troops directly. The PLA also is convinced that this traditional approach to campaigns will *not* suffice against an enemy with advanced technologies. Consequently, there is an emphasis on conducting operations that will paralyze the high-tech enemy's ability to conduct its campaign, including operations to disrupt and delay the enemy campaign at its inception and

operations that are highly focused on identifying the types and locations of enemy high-tech weapons that pose the greatest threat. After identifying those weapons, the PLA must then attempt to neutralize them, either through hard-kill methods, e.g., firepower and special operations, or soft-kill methods, also termed technological interdictions. Degrading a high-tech adversary's ability to process or gather information is viewed as an absolutely essential task if the weak is to defeat the strong, especially if that high-tech adversary is perceived to be overly dependent upon information systems to enable its own operations.

Captain Shen Zhongchang from the Chinese Navy Research Institute, for example, envisions a weaker military defeating a superior one by attacking its spaced-based communications and surveillance systems. "The mastery of outer space will be a requisite for military victory, with outer space becoming the new commanding heights for combat." He also noted that "lightning attacks and powerful first strikes will be more widely used in the future." In future wars, Shen highlights radar, radio stations, communications facilities, and command ships as priority targets vulnerable to smart weapons, electronic attack, and electromagnetic pulse (EMP) weapons.[3]

Ultimately, the PLA seeks to level the technological playing field at the outset of a campaign in order to enhance its chances of operational success. Consequently, PLA operational theory calls for operations aimed at:

- Destroying the enemy command system;
- Crippling the enemy information systems;
- Destroying the enemy's most advanced weapons systems;
- Crippling the enemy support (logistics) systems; and
- Disrupting the critical links in the enemy's campaign systems (i.e., denying the enemy the synergies that accrue from its technological superiority).

According to the Chinese military publication *Junshi Wenzhai*, China already has an "Assassin's Mace" or "Trump Card" doctrine to counter US air superiority in the Western Pacific. One article specifically identifies five major "assassin's maces," including fighter bombers, submarines, anti-ship missiles, torpedoes, and mines to destroy aircraft carriers. China is acquiring these weapons from Russia or developing them itself. The last paragraph of the article claims that China can coordinate all these five weapons to attack an aircraft carrier simultaneously from several directions and leave it "in flames."

B. PRC Conventional Military Modernization and Training

China retains the world's largest military, yet it lacks the technology and logistical support to project and sustain conventional forces much beyond its borders. Military modernization is directed towards training and equipping the services to be capable of fighting short-duration, high-intensity conflicts. Recognizing that comprehensive modernization will take many years, the PLA is pursuing force multipliers.

Air. Although the PLA Air Force (PLAAF) has approximately 3,200 combat-capable aircraft, only about 150 are considered modern, 4th-generation fighters. Development and acquisition

[3] See *Chinese Views of Future Warfare* (National Defense University Press, 1998).

efforts have been aimed primarily at defeating regional air forces, defending against aircraft at long ranges from China's coast, defeating high-value air assets, denying U.S. naval operations, and striking other targets such as airbases and air defense sites. A force-wide modernization focused on the acquisition of advanced systems, improved training realism, new tactics to complement modern technology, and technically proficient personnel is intended to improve combat capability over the next decade and help to extend operations farther beyond land and sea borders. By the end of the decade, China is expected to have a more robust fleet of 4th-generation fighters augmented by modern missiles, electronic countermeasures, and several AWACS-type aircraft. Although PLAAF pilot capabilities will remain poor by Western standards, improvements across the board will increase their combat potential.

Navy. The PLA Navy (PLAN) is making efforts to improve its regional force projection options by improving the capability to deploy submarines on extended patrols and outfitting surface ships with more capable air defense assets and more lethal ASCMs. In the summer of 2002, the PLAN took a major step in this direction when it finalized a contract with Russia for the construction of eight Project 636 KILO SS submarines equipped with the 3M-54E Novator Alpha ASCM by 2005. In addition, the Navy continues its attempt to address weaknesses in anti-submarine warfare. Despite incremental gains, the PLAN is seeking to improve fleet air defense, over-the-horizon targeting, and sufficient sea/air lift for major amphibious operations. In the meantime, given its large inventory of mines and submarines, the PLAN will remain a force growing in size and capability that could pose a threat to regional navies.

Ground. Force reductions and selective new equipment acquisitions are creating a more mobile, combat-ready core within the larger ground force. Since the mid-1990s, the army has shrunk from about 100 divisions to approximately 40, with many of the units downsizing to brigades. The PLA also has three airborne divisions and two marine brigades. However, the PLA's ability to project force beyond China's land borders, while improving, remains limited due to a shortage of amphibious ships, heavy cargo carrying aircraft, long-range transports, and other logistical shortcomings. Even though the PLA has improved its amphibious attack capabilities in recent years, there are few signs that Beijing is serious about increasing the PLA's heavy lift capacity or conducting sustained ground operations abroad in the near term; however, the Chinese may be evaluating other innovative options to boost their heavy lift capability through the use of China's commercial air and sea fleets and improved logistics support.

Conventional Missile Forces. Modernization and training developments in recent years highlight China's continuing effort to improve quantitatively and qualitatively the capabilities of its conventionally-armed SRBM force. There are approximately 450 SRBMs already in the deployed inventory; this number is expected to increase by over 75 missiles per year over the next few years. The accuracy and lethality of this force also is expected to increase through the use of satellite-aided guidance systems. As Beijing increases the accuracy and lethality of its conventional ballistic missile arsenal, a growing and significant challenge is posed to U.S. forces in the Western Pacific, as well as to allies and friends, including Taiwan.

Air Forces Modernization

The PLA Air Force (PLAAF) and PLA Naval Air Force (PLANAF) are equipped with approximately 3,200 combat-capable bombers and fighters of mostly obsolete Soviet design. Modernization efforts through the 1990s were highlighted by the purchase of Su-27 and Su-30/FLANKER fighters from Russia and a license agreement to produce additional Su-27s from kits in China. Beijing also has continued to pursue domestic aircraft programs, including the FB-7 fighter-bomber, and upgrades to the F-7 and F-8 fighters. Additionally, China is developing an indigenous advanced fighter -- the F-10 -- that is expected to become operational in the next few years.

Combat aircraft. The PLAAF has used some of its increased modernization funding to purchase modern arms from Russia, to include Su-27 air defense fighters and Su-30 multi-mission fighters. Domestic production of the Su-27 is proceeding. China also continues to upgrade fighters already in the inventory. The primary focus is on improving sensors, weapons, electronic warfare capabilities, and information connectivity on aircraft in order to increase the lethality of the otherwise outdated airframes. To bolster maritime strike capabilities, China reportedly is developing an improved version of the FB-7, an all-weather, supersonic, medium-range fighter-bomber with an anti-ship mission. Improvements to the FB-7 likely will include a better radar, night attack avionics, and weapons. Additionally, according to Moscow press reports, the PLANAF has agreed to purchase a naval strike version of the Su-30. This aircraft will be capable of launching an ASCM, further improving the service's anti-surface warfare (ASuW) capability. Over the next 20 years, production efforts will focus on the F-10, the improved FB-7 fighter-bomber, and possible upgrades to the Su-27/Su-30.

Special Mission Aircraft. Since the Gulf War, China has sought to improve the capabilities of its special-mission aircraft, with a focus on electronic warfare aircraft, C4ISR platforms, and tankers. China reportedly has developed jamming versions of several of its larger aircraft, and may have several programs underway to deploy new standoff and escort jammers using bombers, transports, tactical aircraft, and unmanned aerial vehicle (UAV) platforms.

China has been actively pursuing an advanced airborne surveillance and control aircraft since the early 1990s. In 1999, it introduced an airborne early warning (AEW) aircraft, the Y-8 AEW. Israel's 2001 cancellation of the more capable PHALCON program forced Beijing to pursue other alternatives, to include the possible acquisition of the A-50/MAINSTAY AWACS aircraft from Russia.

Air-to-Air Refueling. China began developing its air-to-air refueling capability in the mid-1980s using a converted B-6/BADGER bomber as an aerial tanker. PLANAF fighters and tanker aircraft last successfully transferred fuel during aerial operations over the South China Sea in April 2000.

Unmanned Aerial Vehicles (UAVs). China is investing considerably in the development of UAVs. China already has a number of short-range and medium-range UAVs in its inventory for reconnaissance, surveillance, and electronic warfare roles. Research efforts are underway to develop a UAV that eventually will enable continual surveillance well beyond China's coastal waters. The Chinese also are pursuing technologies in order to develop an unmanned combat aerial vehicle (UCAV).

Munitions. China's approach to the development of conventional munitions for its air forces has been altered irrevocably since the 1991 Gulf War, where precision-guided munitions (PGMs) were introduced on a large and effective scale. Ensuing campaigns, such as Operations ALLIED FORCE and ENDURING FREEDOM, have demonstrated an increasing use of PGMs that has reinforced Beijing's desire to develop and acquire a similar capability. The PLANAF has operated the B-6/BADGER as a weapons platform for the C-601/KRAKEN ASCM for over ten years. PLAAF and PLANAF tactical forces also are developing and acquiring PGMs. Most notably, the Su-30 is equipped to use anti-radiation missiles (ARMs) and laser-, TV-, and radar-guided air-to-air munitions, such as the AA-12/ADDER active radar AAM. Russia reportedly has agreed to sell the naval strike variant of the Su-30 to the PLANAF. The aircraft may be equipped with a radar upgrade that is capable of supporting the launch of radar-guided air-to-surface missiles, such as the AS-X-17b/KRYPTON ASCM. Future aircraft also are expected to employ a variety of both indigenously produced and Russian-made LACMs, ASCMs, ARMs, and PGMs.

Evolving Capabilities. Since China received its first 4th-generation Su-27 fighter in 1992, training, tactics, and operational concepts progressed slowly. Over the past three years, new Su-27s and Su-30s have been integrated into operational units. Meanwhile, air combat tactics continue to evolve and training is becoming more advanced, although it remains behind Western standards. By 2010, the PLA will have made additional significant progress toward becoming a modern air force. Although not all the PLAAF and PLANAF will be equipped with modern weapons by that time, a core of units will be in place to allow the PLA to execute the type of regional combat operations envisioned by its current military doctrine.

Maritime Forces Modernization

The PLA Navy (PLAN) numbers 290,000 personnel, with approximately 60 destroyers and frigates, about 50 diesel and six nuclear submarines, and some 40 amphibious landing ships. Estimates of auxiliary and smaller patrol vessels range from 500 to 750. The PLAN also has a naval air arm of over 500 fixed-wing aircraft and 60 helicopters. Over the last decade, the Navy has streamlined and modernized its forces by eliminating large numbers of older ships and replacing them with fewer, more modern units. The number of submarines has declined by about one-half. Despite the drawdown in submarine numbers, the PLAN continues to pursue a robust acquisition strategy targeting advanced platform and weapons system packages. New amphibious ships are being produced in China to replace aging bottoms. The PLAN also has hundreds of smaller landing craft, barges, and troop transports, all of which could be used together with fishing boats, trawlers, and civilian merchant ships to augment the naval amphibious fleet for follow-on forces and materiel after a port has been secured or beachhead established. The size of the major surface combatant fleet has been relatively stable, with older ships slowly being replaced by newer Chinese-built destroyers and frigates.

The PLAN seeks to push its maritime defense perimeter further seaward. This change in operations will require newer, more modern warships and submarines capable of operating out to the Ryukyu Islands and into the South China Sea. At these extended ranges, the platforms will have to be better armed to enable defense from all methods of attack. The Navy has been

conducting research and acquiring foreign technology in an effort to improve the broad range of naval warfare capabilities; it also is acquiring new classes of ships that will be better suited for operations out to the limits of the East and South China Seas.

Major Surface Combatants. The acquisition of two Russian-built SOVREMENNYY-class destroyers, with two more ordered, has improved China's surface fleet capabilities. These ships are equipped with SS-N-22/SUNBURN ASCMs and the SA-N-7 SAM system. The SOVREMENNYYs also are fitted with the AK-630M 30-mm Gatling gun and 130-mm dual-purpose gun. Not only do these foreign acquisitions provide China with immediate improvement to its warfighting capabilities, they also provide the PLAN with the opportunity to reverse-engineer more modern weapons and associated systems.

China's best domestically constructed surface combatant -- the 6,000-ton LUHAI-class destroyer -- is equipped with C-802 ASCMs and a naval variant of the HQ-7 SAM system. China also has added a new 7,000-ton destroyer to its inventory. Believed to be a follow-on to the LUHAI-class, it reportedly is equipped with a long-range area air-defense missile system and incorporates stealth features. The first two ships of this class were launched in 2002.

By 2010, new destroyers now under construction will begin to enter the fleet, as could a new frigate. By 2020, China is expected to have improved significantly its destroyer fleet with another new destroyer to replace its aging LUDAs. In the interim, China will upgrade its older LUDAs with newer missiles to extend their service an additional ten years. The new frigate likely will replace the older JIANGHU I/II Class frigates.

Aircraft Carrier. While continuing to research and discuss possibilities, China appears to have set aside indefinitely plans to acquire an aircraft carrier.

Air Defense. The PLAN is addressing its longstanding concerns about its capability to engage enemy aircraft, cruise missiles and PGMs. The problem has become more important as the Navy strives to operate away from the protection of land-based air defenses. PLAN surface combatants have a limited, and primarily self-defense, anti-air warfare (AAW) capability. An increasing number -- currently about one-fifth of its destroyers and frigates -- are outfitted with SAM systems; the others are armed only with anti-aircraft artillery and possibly man-portable air defense systems. Most PLAN warships lack the modern air surveillance systems and data links required for area air defense missions. The combination of short-range weapons and lack of modern surveillance systems limits the PLAN to self-defense and point-defense AAW only. Consequently, except in unusual circumstances, no PLAN ship is capable of conducting air defense of another ship. Additionally, the PLAN could not reliably defend against either current or projected ASCMs. China has recognized the importance of countering low-observable aircraft and cruise missiles. Engineering efforts to develop air defense systems capable of detecting and eventually engaging these systems are underway.

Air defense improvements include the development of SAMs to provide area defense. This effort has led to continuing exchanges with Russia on air defense-related radars and missiles. The SA-N-7 provides the most capable system in the near term. Technology from the SA-N-7 probably could assist with the development of an indigenous naval SAM system. Over the next

ten years, the PLAN could develop a naval missile roughly equivalent to the shore-based SA-10/20s and/or purchase them from Russia. While indigenous SAM development is preferred, it is uncertain if China will be able to build its own equivalent within an acceptable period of time; the purchase of additional, more advanced, Russian weapons may be required.

The land-based version of the long-range HQ-9 also is in development. Based on precedents, China probably will produce a naval variant of the HQ-9. The HQ-9 is designed to be a long-range SAM to counter high-performance aircraft, cruise missiles, air-to-surface missiles (ASMs), and tactical ballistic missiles (TBMs). Technology from advanced Western systems may be incorporated into the system.

Submarines. The PLAN intends to maintain a large submarine force. China is producing more modern submarines and is acquiring Russian technology to improve future units, with upgrades to the current fleet likely accomplished during overhauls. Although the force is oriented principally toward interdicting surface ships using torpedoes and mines, development of domestic anti-ship missiles and purchase of foreign weapons for the submarines provides the Navy a submerged-launch cruise missile. China's contract with Russia for eight new Project 636 KILO SS in June 2002, which includes the 3M-54E Novator Alpha ASCM and associated fire control system, will extend the cruise missile engagement envelope out to greater distances as those platforms come on line, perhaps as early as 2005. A second major improvement entails the use of advanced mobile mines to augment the Navy's large inventory of submarine-laid mines.

Diesel Electric Submarines. In addition to the roughly 20 old Soviet-designed ROMEO-class submarines remaining in the force, China has produced two domestically designed diesel-electric attack submarine classes: the MING and the SONG. The MING is modeled after the ROMEO, and newer construction units reportedly have improved sonar and navigation equipment. The SONG is China's first new-design, conventionally powered submarine. It is a blend of Chinese and Western technology and has several features that point to a major shift in diesel submarine design philosophy. It is the first Chinese submarine to have a skewed propeller. It also is the first Chinese submarine designed to carry the YJ-82 ASCM, China's first encapsulated ASCM capable of launching from a submerged submarine.

The PLAN has taken delivery of four Russian-built KILO-class SS. Two are standard export version Project 877 EKM KILO SS and two are Project 636 KILO SS (the improved KILO design). In purchasing the KILO SS, the PLAN has acquired one of the quietest diesel-electric submarines in the world. Armed with such weapons as the wire-guided torpedoes and wake-homing torpedoes, the KILO provides Beijing with access to previously unavailable quieting and weapons technologies. China will try to incorporate aspects of this submarine into its domestic programs, although it will take several years before these technologies could be used effectively.

By 2010, China will have withdrawn the ROMEO-class submarines from service and by 2020, China's non-nuclear submarine inventory probably will include MING, SONG, and KILO SS. China will continue purchasing foreign technology to improve quieting, propulsion, and submarine design. China also will benefit from the maturation of its domestic submarine research and development infrastructure to achieve a capability to design and manufacture modern submarines domestically.

Nuclear-Powered Submarines. The PLAN has five HAN-class nuclear attack submarines (SSNs) in its inventory, all launched between 1970 and 1990. China's sole nuclear-powered ballistic missile submarine (SSBN) -- the XIA-class -- was overhauled in the late 1990s, insuring that service will be extended past 2010.

In 2002, China launched the lead hull of its next-generation SSN, the Type 093-class, which is expected to enter service by late 2004 or early 2005. An additional three units are expected to enter the PLAN by 2010, where they will form the backbone of China's future forward anti-carrier warfare capability and eventually replace the HAN. The Type 093-class, will compare to the technology of the Russian VICTOR III SSN and will carry wire-guided and wake-homing torpedoes, as well as cruise missiles. The Type 094-class SSBN will be similar to the Type 093-class, but with a missile bay to carry the JL-2 SLBM.

Mines. China has a good defensive and offensive mine warfare capability using a wide variety of launch platforms. The variety of mines available include bottom and moored influence mines, mobile mines, remotely controlled mines, command-detonated mines, and propelled-warhead mines. Use of propelled-warhead mines in deep waters has the potential to deny enemy naval formations large operational areas.

Torpedoes. China has developed domestic torpedoes and purchased foreign weapons for its submarines, warships, and helicopters. Its modernization efforts are focused on developing torpedoes with state-of-the-art homing and propulsion systems capable of operating in acoustically challenging shallow-water environments. China also seeks advanced torpedo countermeasures like mobile decoys and hard-kill anti-torpedo torpedoes to increase the survivability of its surface ships and submarines.

Submarine Sonars. Most PLAN submarines are believed to have obsolete sonar systems based on older analog designs. A growing number of Chinese submarines have more modern digital sonar systems based probably on Western technology. The Chinese have an extensive acoustic research and development infrastructure which uses modern commercial off-the-shelf (COTS) computer processing technology. It is likely that future Chinese sonar designs will be similar to commercially available Western submarine sonar systems and feature modern COTS processors and displays.

Submarine Quieting. PLAN submarines are assessed to incorporate a wide range of quieting technologies, most of which are imported. China nonetheless desires to develop the capability to produce indigenously quiet submarines. The main submarine quieting technology areas are machinery isolation, hull coatings, and propellers. Some PLAN submarines already incorporate this technology. Future submarine designs also are expected to incorporate lower propeller rotational rates and more advanced propeller designs, machinery mounts, and hull coatings. China's indigenous efforts are evident in its large investment in research, development and manufacturing.

Ground Forces Modernization

China's ground forces are divided among approximately 20 group armies, some 40 maneuver divisions, and some 40 maneuver brigades. Approximately a dozen of these divisions and several of these brigades are designated "rapid reaction" units. China completed a 500,000-man force reduction in 2000 in an effort to streamline the force further and free up funding for modernization. This reduction was achieved primarily through the deactivation of several group army headquarters; the transfer of personnel to the People's Armed Police; and the downsizing of approximately 30 combat divisions to brigades. Recent improvements also have focused on increasing the capability of reserve and militia units, as well as exploring ways to use civilian vessels to support amphibious operations. Another large-scale downsizing may be in the offing in the next few years, as the PLA tries to reduce its regular infantry forces and free up funds for key units and equipment acquisitions. For now, the size of the PLA ground forces suggests that continued modernization will remain deliberate and limited through at least 2010. By 2020, mechanized infantry, airborne, armor, and army aviation units will comprise a much larger percentage of the force.

Armor Modernization. The PLA has been upgrading the main gun on its mainstay Type 59 main battle tanks, as well as maintaining over 1,000 tanks already equipped with the 105-mm gun. In addition, several new or updated armor assets are making their way into the PLA ground force inventory, to include a light tank, an amphibious tank, and an amphibious APC. Production of the Type 96 tank continues, with about 1,500 expected to be deployed by 2005.

Fire Support Modernization. Artillery research, development and production have continued to emphasize qualitative improvements to the PLA's artillery forces over quantitative production. Progress on an advanced multiple rocket launcher and a self-propelled amphibious howitzer continues.

Special Operations Forces. In addition to conventional warfare modernization, the PLA has devoted considerable resources to the development of special operations forces (SOF). SOF units are an integral element of ground force modernization. They are expected to play an important role in achieving objectives in which limited goals, scale of force, and time would be crucial to victory. SOF missions likely include conducting surveillance and battle damage assessment; locating or destroying C4I assets, transport nodes, and logistics depots; capturing or destroying airfields and ports; supporting invasion forces; destroying air defense assets; and, conducting denial and deception and information operations.

Army Aviation. Despite a growing inventory of helicopters, which currently numbers approximately 300 aircraft, China's Army Aviation forces can provide only minimal support to ground or amphibious operations. In late 2002, China took delivery of 40 Russian Mi-171V5s medium attack helicopters. Talks concerning the sales of Russian Mi17-1V6 aircraft are in progress with an expected 2003 delivery date. China still lacks a heavy-lift and a dedicated attack helicopter.

While the PLA ground forces continue to make advances in several areas, they continue to face several key challenges, including:

- *Downsizing and Restructuring*. China's leadership still considers its ground forces as too "infantry-heavy." Beijing probably believes that further troop reductions accompanied by additional restructuring are required in order to make the force a more appropriately balanced combined arms force with increased mobility, lethality, and survivability. Thus, another large-scale reduction may occur in the next few years.
- *The Pace of Modernization*. Recent fielding of new equipment has thus far been in limited numbers and, therefore, has not improved appreciably the capabilities of most of the PLA's ground forces. Even with the consolidation of ground force assets into progressively fewer units, the army remains so large as to impede rapid equipment modernization throughout its force structure. However, new equipment, while not being deployed throughout the whole of China, is being deployed to the PLA's strategically important areas, especially the southeast.

Conventional Second Artillery Missile Modernization

Beijing's growing conventionally armed missile force provides China with a military capability that avoids the political and practical constraints associated with the use of nuclear-armed missiles. China's CSS-6 and CSS-7 SRBMs provide it with a survivable and effective conventional strike force, as will future conventionally armed CSS-5 medium-range ballistic missiles (MRBMs) and land attack cruise missiles (LACMs). China has approximately 450 SRBMs already in its deployed inventory; this number will increase by over 75 missiles per year for the next few years. All of China's known SRBM assets are believed to be based in the Nanjing Military Region opposite Taiwan. The accuracy and lethality of this force also are increasing. The PLA is developing variants of the CSS-6 that could employ satellite-aided navigation to enable attacks against both Okinawa and Taiwan.

Ground-Based Air and Missile Defense Modernization

China currently lacks a coherent, national, strategic-level integrated air defense system (IADS). It has a variety of major defensive weapon systems; however, the bulk of China's air defense system is based on obsolete weapon systems, which allow for routine operations, such as providing point air defense for major cities and other high-value assets, but does not allow for an in-depth or flexible air defense throughout the country.

China's air defenses consist of strategic assets operated by the PLAAF and tactical assets operated by the PLA ground forces. Historically, Beijing relied upon its large inventory of interceptors along with PLA anti-aircraft artillery units to defend the country. However, the acquisition of modern SAMs may be precipitating a change to the historical strategy in which SAMs had not been the primary choice of engagement. Modern SAMs are primary weapons against cruise missiles, SRBMs, and tactical aircraft at close range. PLAAF aircraft would be primary weapons for engaging tactical aircraft at a greater distance. Until additional SAM units become operational, China will only be able to defend effectively against isolated intrusions and small-scale attacks.

Much of China's more recent air defense modernization efforts extend from Beijing's observation of Western military campaigns beginning with the Gulf War in early 1991 and Operation ALLIED FORCE in mid-1999. During the Gulf War, the employment of PGMs, stealth aircraft, and airborne C4I apparently alerted Beijing to the limitations of its air defense capabilities. The design of the HQ-9 SAM reportedly was influenced by these observations, and plans were made to upgrade China's C4I system. Late-model Russian SAMs, such as the SA-10 and the SA-15, were purchased to provide a stop-gap measure against a perceived cruise missile threat. Foreign assistance also was sought to develop a robust air defense system.

Anti-Radiation Missile Development. Beijing has procured or is developing a number of anti-radiation missile systems. Beijing has procured from Israel a significant number of HARPY anti-radiation systems. Reports of a Chinese anti-radiation SAM, the FT-2000, first surfaced in sales brochures at the September 1998 Farnborough Air Show. The FT-2000 is a mobile system with a maximum advertised range in excess of 100 km. It has been described as an "AWACS killer." There also are indications that China is promoting the development of another anti-radiation SAM, the FT-2000A, which is an update of the antiquated CSA-1; it is a fixed-based SAM system with a range of 60 km. The intended targets for anti-radiation SAM systems would be AWACS aircraft or any airborne asset emitting radio signals. There is no information indicating that any country, including China, has expressed an interest in acquiring either system or that either system has progressed beyond the conceptual phase.

Training and Exercises

As in 2001, PLA combined-arms training in 2002 reportedly emphasized amphibious warfare with limited multi-service participation. In addition, the PLAN, PLAAF, and Second Artillery conducted service-specific training. In 2002, the PLA started implementing new military training reforms that involve objective evaluation of training. The reforms eventually could have far-reaching effects, increasing the professionalism of both the officer and NCO corps. In addition, the PLA has set up specialized facilities to add realism to training.

PLA Air Training and Exercises. The PLAAF and PLANAF fighter pilot tactical training continues, albeit slowly. During 2002, some of the PLAAF's more advanced aircraft continued to conduct advanced tactical training involving fighters of dissimilar types. Advanced tactics training is part of the PLA's push to modernize its combat capability against regional air forces. The tactics being practiced are a significant departure from traditional PLA training; however, they are not as advanced when compared to Western tactics. Like last year, PLAAF/PLANAF exercise activity during 2002 reportedly concentrated on mobility, air defense, and support to amphibious assault forces. Air defense exercises, apparently smaller in number than last year, were said to be highly scripted and lacking realism, limiting the benefit PLA pilots could have gained from the exercises.

PLA Navy Training and Exercises. PLAN training and exercise activity in 2002 was robust, with the Navy participating in several training evolutions and exercises. Moreover, the end-of year multi-fleet exercise reportedly was the largest ever conducted. The exercise, held in the South China Sea in November 2002, included surface, submarine, and amphibious assets.

Ground Forces Training and Exercises. PLA ground forces training and exercises continue to focus on maritime and amphibious training and the integration of conventional ground force units with marines, airborne, SOF, and border defense forces. Building on previous years and involving more combat units, improvements were made in the PLA's ability to deploy and sustain forces and to conduct amphibious operations in a multi-service environment.

C. Strategic Force Modernization

China is in the midst of a ballistic missile modernization program that is improving its force, both qualitatively and quantitatively, in all classes of missiles. This modernization program is intended to improve both China's nuclear deterrence by increasing the number of warheads that can target the United States as well as its operational capabilities for contingencies in East Asia. As China improves its strategic forces, despite Beijing's "no first use" pledge, there are indications that some strategists are reconsidering the conditions under which Beijing would employ theater nuclear weapons against U.S. forces in the region.

Intercontinental Ballistic Missiles (ICBMs)

China is replacing CSS-4 Mod 1 ICBMs with longer range CSS-4 Mod 2s. The replacement of all the approximately 20 CSS-4 Mod 1s reportedly will be completed by mid-decade. In addition, China is developing three solid propellant ICBMs. Development of the DF-31 is progressing and deployment should begin later this decade. China also is developing two follow-on extended range versions of the DF-31: a solid-propellant, road-mobile ICBM and a solid-propellant SLBM. Deployment of these two missiles should begin by mid-to-late-decade. China also will retain about a dozen CSS-3 ICBMs through the end of the decade.

Intermediate and Medium Range Ballistic Missiles (IRBMs and MRBMs)

The Second Artillery is continuing to supplement its aging inventory of liquid propellant CSS-2 IRBM with the solid-propellant, road-mobile CSS-5 MRBM.

Submarine-launched Ballistic Missiles (SLBMs)

China is expected to deploy the JL-1 medium-range SLBM aboard the XIA SSBN in 2003. The JL-2 will be deployed on the Type 094 submarine by the end of the decade.

Missile Deployment Trends

China currently has around 20 ICBMs capable of targeting the United States. This number could increase to around 30 by 2005 and may reach up to 60 by 2010.

D. Intelligence, Surveillance, and Reconnaissance (ISR)

China is enhancing its battlespace awareness for a Taiwan Strait conflict. The acquisition of modern ISR systems remains a critical aspect of Beijing's military modernization. China is developing its ISR capabilities based upon indigenous developments, supplemented by foreign

technology acquisition and procurement of complete foreign systems. Its procurement of new space systems, AEW aircraft, long-range UAVs, and over-the-horizon (OTH) radars will enhance its ability to detect, monitor, and target military activity in the Western Pacific Ocean.

Space-based ISR Development

Exploitation of space and acquisition of related technologies remain high priorities in Beijing. China is placing major emphasis on improving space-based reconnaissance and surveillance, including electro-optical, synthetic aperture radar, and other satellite reconnaissance systems. These systems, when fully deployed, will provide a robust and versatile space reconnaissance capability with regional coverage.

China launched its first oceanological satellite on 15 May 2002. According to the Chinese press, this satellite will collect precise data about the ocean's color and temperature. Beijing claims it will launch a constellation of oceanic satellites to form its own stereoscopic observation system by 2010 to monitor the ocean's environment.

China has begun to embrace new satellite architecture emphasizing common satellite buses. This approach to satellite construction is based on the use of a standard, versatile satellite bus module, with minor modifications to accommodate various payloads. In addition to indigenous development, China will continue to use commercial satellite imagery and may seek to join an international consortium-owned constellation. China is cooperating with a number of countries, including Russia, Ukraine, Brazil, Great Britain, France, Germany, Italy, and South Korea in order to advance its objectives in space.

Airborne ISR Development

Unmanned Aerial Vehicles (UAVs). China's armed forces have operated the Chang Hong (CH-1) long-range, air-launched autonomous reconnaissance drone since the 1980s. China developed the CH-1 by reverse-engineering U.S. Firebee reconnaissance drones recovered during the Vietnam War. An upgraded version of the system was displayed at the 2000 Zhuhai air show and is being offered for export. A PRC aviation periodical reported the CH-1 can carry either a daylight still, TV, or infrared (IR) camera. It likely is not equipped with a data-link, which would allow remote control operation, nor is it capable of providing real-time payload feedback to the remote operator.

The PLA also operates other UAVs, primarily for battlefield reconnaissance or electronic warfare. Currently in use are more advanced UAVs such as the ASN-206 and the ASN-207. The ASN-206 can carry a 110 lb payload, has a range of 148 km, and an eight hour endurance. The larger ASN-207 has twice the payload and endurance as the 206, and has been advertised as being capable of operating in tandem with another ASN-207 that would act as a data-link relay, extending its range to 602 km. The ASN-206 can carry visible and IR cameras as well as an electronic warfare payload. The Chinese claim the ASN-207 can be fitted with visible and IR cameras, a forward-looking infrared sensor, a side-looking airborne radar system, communications intelligence, electronic intelligence (ELINT), jamming, or decoy payloads. In

August 2003, China plans to enhance its surveillance of the Taiwan Strait with the introduction of a tethered aerostat fitted with the Sea Dragon radar along the southeast coastline.

Manned Aircraft. In addition to the Y-8 AEW and efforts to procure and produce an AWACS capability, China has several other aircraft that can perform ISR missions, such as the Tu-154 multi-role special mission aircraft equipped for ELINT collection missions and possibly electronic warfare. The PLAAF reportedly also has several aircraft -- both fighters and bombers -- capable of performing an imagery reconnaissance function.

Ground-based ISR Development

Over-the-Horizon Radar (OTHR). China is assessed to have Over the Horizon Sky-Wave Radars that could be used to target aircraft carriers. These systems also could be used in an early warning capacity. China also may have deployed several surface-wave OTHRs.

Aerostats. China is planning to purchase surveillance aerostats from Russia with projected delivery in late 2003. The systems will be used to monitor air and surface activity across the Taiwan Strait.

Sea-Based ISR Development

China may have developed passive acoustic sensors for use in an underwater acoustic range and possibly for coastal surveillance. This range could be used to track torpedoes during training exercises. Because of China's continuing interest in improving its antisubmarine warfare capabilities, development and deployment of additional underwater sensors is probable in the next decade and will expand through 2020. Some of these future systems may be installed out to the edge of the continental shelf. Passive sensors would provide only a few miles of coverage against quiet submarines, but could detect merchant shipping and noisy combatants at greater distances.

E. Battle Management/Command, Control and Communications

Theater-level Weapons Management

PLA joint battle and weapons management processes in the war zone are still accomplished manually. The commander determines which weapons will best satisfy combat objectives and communicates these decisions to subordinate weapons controllers. Commanders and controllers participate in an iterative process involving feedback loops and courses of action. However, the PLA recognizes that fielding automated battle management systems is critical at all echelons of command.

China’s ongoing development of a common, joint C4ISR system recognizes the importance of accurate sensors. China also aims to improve the characteristics of its sensors in terms of all-weather capability, miniaturization, artificial intelligence, survivability, and integration with other sensors.

China is expected to acquire a significant AWACS capability within the next ten years. The technical ability could exist for these aircraft to display a coordinated air picture, with the capability to command and control airborne assets. With the enhancement of an air refueling capability, this air capability could extend into the South China Sea and beyond. In the interim, China reportedly has leased several A-50/MAINSTAY aircraft from Russia. China also may be negotiating with the Belarusian firm Agat to produce C4I software and equipment capable of performing joint battle management.

Communications Networks

China has an extensive network of hardened, underground shelters and command and control (C2) facilities for both its military and civilian leadership. Fear of a possible war with the former Soviet Union in the 1960s and 1970s prompted Beijing to expend considerable resources constructing national-level command posts, civil defense facilities, and associated communications. These facilities are intended to ensure survival of China's leadership and provide a refuge from which it can maintain control over the country's military forces.

China's national leadership and C2 facilities are connected to military and civilian communications networks. The military communications network is separate from the civilian telecommunications network. It supports all levels of the military and civilian leadership. The military communications network provides the backbone support to China's national military command and data network. PLA national level C2 is carried over multiple transmission systems to include coaxial and fiber optic cable, satellite communications, microwave radio relay, and long-range high frequency (HF) radio. China's military and civil communications networks are critical to the PLA's peacetime and wartime operations. China's communications networks, both civil and military, would be capable of supporting a wide range of military operations.

The Chinese media reported in October 2002 that Beijing had signed a contract with a French company to build the Apstar-6 communications satellite, which is scheduled to be launched by a Chinese booster in late 2004. Apstar-6 would be China's first foreign-made satellite with all its parts made in Europe. Israeli media have reported that Israel will supply China with two military communications satellites to be delivered in 2005-2006.

F. Information Operations/Information Warfare (IO/IW)

Chinese concepts of information operations/information warfare (IO/IW) include elements such as combat secrecy, military deception, psychological warfare, electronic warfare, physical destruction of C2 infrastructure, and computer network warfare. China views IO/IW as a strategic preemptive weapon for use outside of traditional operational boundaries. IO/IW is to be used substantially as an unconventional weapon at the beginning of a conflict. China is particularly sensitive to the potential asymmetric applications IO/IW can have in any future conflict with a technologically superior adversary.

The Academy of Military Science, the National Defense University, and the Wuhan Communications Command Academy have published several books addressing this subject. These writings suggest a growing sophistication in the PLA's understanding of all aspects of IO. In addition to developing wartime applications for its robust information control and perception management capability, China is pursuing IO/IW development as part of its overall military modernization.

The PLA has increased the amount and complexity of IO/IW components in military exercises. Efforts initially focused on increasing the PLA's proficiency in defensive measures, most notably against the threat of computer viruses. Recent exercises have incorporated the concept of IW between the opposing command posts at the start of a conflict. Special information warfare units could attack and disrupt enemy C4I, while vigorously defending PRC systems. While the enemy is blinded or disrupted, PRC military forces would attack. Defensive concerns apparently are driving anti-viral and network security research and development within the PLA and military-supported academia. The research is facilitated by the dual-use nature of information technology (IT) and the growth in China's technology base. Increases in network defense likely will enhance China's understanding of virus propagation and behavior, creating a solid knowledge base not only for computer network defense (CND), but potentially also for computer network attack (CNA).

In an effort to improve its skill base in the IT field, the PLA has been setting up recruiting programs for technical specialists. Specialized IO/IW reserve units are active in several cities developing "pockets of excellence" that gradually could develop the expertise and expand to form a corps of "network warriors" able to defend China's telecommunications, command, and information networks while uncovering vulnerabilities in foreign networks.

China has the capability to penetrate poorly protected U.S. computer systems and potentially could use computer network attacks to strike specific U.S. civilian and military infrastructures. This anti-access strategy is centered on targeting operational centers of gravity, including C4I centers, airbases, and aircraft carrier battle groups located around the periphery of China.

Role of Nationalistic Hacking

Nationalistic hacking is likely to occur during periods of tension or crises. Chinese hacking activities likely would involve extensive web page defacements with themes sympathetic to China. Although the extent of Chinese government involvement would be difficult to ascertain, official statements concerning the leveraging of China's growing presence on the Internet, and the application of the principles of "People's War" in "net warfare," suggest the government will have a stronger role in future nationalistic hacking.

G. Electronic Warfare

China's electronic warfare (EW) efforts are focused on technology and design development, accomplished mainly through cooperation with Western companies, through reverse-engineering efforts, and through the procurement of foreign systems. The inventory of Chinese EW equipment includes a combination of 1950s-1980s technologies, with only a few select military

units receiving the most modern components. China's newer designs, offered for sale at air and trade shows, show significant improvements over older systems.

China is procuring state-of-the-art technology to improve its intercept, direction finding, and jamming capabilities. In addition to providing extended imagery reconnaissance and surveillance and electronic intelligence collection, Beijing's UAV programs probably will yield platforms for improved radio and radar jammers. Additionally, existing earth stations can be modified to interfere with satellite communications. The PLA also is developing an electronic countermeasures (ECM) doctrine and has performed structured training in an ECM environment.

H. Counterspace Development

Publicly, China opposes the militarization of space and seeks to prevent or slow the development of U.S. anti-satellite (ASAT) systems and space-based missile defenses. Privately, however, China's leaders probably view ASAT systems -- and offensive counterspace systems, in general -- as well as space-based missile defenses as inevitabilities. In addition to passive counterspace measures -- such as denial and deception -- China is said to be acquiring a variety of foreign technologies which could be used to develop an active Chinese ASAT capability.

China probably has a thorough knowledge of U.S. and foreign space operations, based, in part, on access to open-source information on U.S. space systems and space operations. Beijing already may have acquired technical assistance that could be applied to the development of laser radars used to track and image satellites and may be seeking an advanced radar system with the capability to track satellites in low earth orbit. It also may be developing jammers that could be used against Global Positioning System (GPS) receivers.

In addition, China already may possess the capability to damage, under specific conditions, optical sensors on satellites that are very vulnerable to damage by lasers. Beijing also may have acquired high-energy laser equipment and technical assistance, which probably could be used in the development of ground-based ASAT weapons. Given China's current level of interest in laser technology, Beijing probably could develop a weapon that could destroy satellites in the future. Although specific Chinese programs for a laser ASAT system have not been identified, press articles indicate an interest in developing this capability.

China is believed to be conducting research and development on a direct-ascent ASAT system that could be fielded in the 2005-2010 timeframe. Scholarly articles published by Chinese scientists in technical journals have reported indigenous research on "space interceptors," which they say can be used to destroy targets in space. June 2002 Chinese magazine article suggested that China should "concentrate on intensifying research of the key technologies in anti-satellite weapons that attack ground and space bases (especially ground bases), and as quickly as possible develop one or two anti-satellite weapons that are useful as a deterrent against enemy space systems, in order to gain the initiative in future space wars." A Hong Kong newspaper article in January 2001 reported that China had developed and tested an ASAT system described as a "parasitic microsatellite." Although this claim cannot be confirmed, a number of countries, including China, are developing and proliferating microsatellite (10- to 100-kg mass) and nanosatellite (1- to 10-kg mass) technologies.

I. Space Launch Capabilities

Beijing is developing a new modular family/class of heavy-lift space launch vehicles (SLVs) which reportedly will use ecologically clean propellants. China's objective is a capability to launch 25 tons to low earth orbit and 14 tons to geosynchronous orbit by 2007. Beijing also has begun to develop a new small, solid-propellant SLV, the Kaituozhe (Pioneer, KT, or KTZ)-1. The KT-1 is the first step toward developing a series of small, solid-fuel launch vehicles that will provide China with an efficient means of launching small satellites currently in development. Chinese press stated that three or four variants of the small KT series of solid fuel space launch vehicles are in development. This report also noted that this class of boosters can be launched from mobile platforms, provides a rapid launch capability, and has broad military, civil, and commercial applications.

China continues to make progress with its manned space program. Thus far, there have been four unmanned Shenzhou (SZ) test launches (SZ-1 in November 1999, SZ-2 in January 2001, SZ-3 in March 2002, and SZ-4 in December 2002). China may launch its first manned space mission sometime in 2003. China also has long-term plans to launch its own space station, and possibly a reusable space plane as well. While one of the strongest immediate motivations for this program appears to be political prestige, China's manned space efforts almost certainly will contribute to improved military space systems in the 2010-2020 timeframe.

J. "New Concept" Weapon Systems

China is pursuing research and development programs to introduce so-called "new concept" weapon systems into the PLA inventory. Key weapon systems in this category include kinetic energy, laser, and radiofrequency weapons.

Kinetic Energy Weapons

China has a significant research and development program in kinetic energy weapons with muzzle velocities in excess of 2 km/s based on new technologies such as electrothermal chemical guns and railguns. Chinese scientific publications describe an electrothermal chemical gun, likely for naval air defense, as being in the late stages of development.

Laser Weapons

China is pursuing a robust research and development program for laser weapons. The Chinese have openly stated that their scientists have "laid a firm technical foundation" in laser technology and are capable of developing laser weapons. China reportedly is focusing its laser weapon development on anti-personnel, counter-precision guided munitions air defense, and ASAT roles.

China's research into laser weapon technologies already has resulted in the development and fielding of several systems. In 1995, China North Industries Corporation, a military trading company, introduced the ZM-87 laser weapon at defense exhibitions in Manila and Abu Dhabi.

A maritime version of the ZM-87 laser may be used for purposes of blinding foreign naval personnel.

Since that time, Chinese writings indicate a continuing effort to develop additional laser systems. A second system was unveiled at the 50th anniversary military parade in 1999, when the Chinese displayed a probable laser-based ATGM countermeasure on its Type 90-II tanks. Additional Chinese ground combat systems include laser pointers, laser range finders, and laser target designators. These devices are routinely marketed at defense exhibitions. In the future, China can be expected to continue to develop and field military weapon and non-weapon laser systems. Using a combination of indigenous capabilities and foreign assistance, China could emerge as a leading producer and exporter of military lasers by 2020.

Radiofrequency Weapons

China reportedly has placed a priority on the development of radiofrequency (RF) weapons. PRC officials have indicated publicly that the PLA will need RF weapons that would defeat enemy electronics in the 21st century. Although the PLA most likely does not have an RF weapon at this time, it is developing the high-power RF technologies that could form the basis for some types of RF weapons. In addition to indigenous research, China is working closely with foreign scientists and is seeking foreign technology associated with high-power RF generation. Chinese scientists have published on efforts to develop explosively driven RF weapons technology that potentially could be used in missile warheads or aircraft bombs, and are studying the effects of RF pulses on electronics and the propagation of RF energy through the atmosphere.

China may choose to attempt development of air defense RF weapons intended to defeat missiles or aircraft by targeting the electronics in guidance, altimeter, fire control, communications, navigation, or other critical subsystems. Beijing may consider working with Russia to support research and development on a high-powered microwave system (HPM), referred to as Ranets-E, which would target the electronics onboard precision-guided weapons.

China is known to be conducting research on explosively driven RF weapons. However, even if China could produce significant amounts of RF energy by means of an explosive driver, it is still not clear whether it is possible to build an RF warhead that will be competitive with a conventional warhead of the same size. China is unlikely to possess effective RF warheads in the near term, even if such weapons do prove to be feasible.

Finally, China may consider RF weapons with an ASAT capability. An ASAT mission is undoubtedly one of the most stressing RF weapon applications. For a ground-based system beaming RF energy into space, HPM sources operating at very high power levels, as well as large transmitting antennas having high gain would be required. For an RF weapon delivered via a direct-ascent missile or deployed as an orbital system, there are severe constraints on system size and mass and the question of competitiveness with other ASAT systems that also must approach the target. Even if the Chinese commit resources to a major ASAT RF development program, they likely will be unable to deploy such a weapon for at least ten to fifteen years.

Low Observable Technologies

China reportedly embarked on an extensive national effort to understand and develop low observable (LO) technology in the 1980s. Indigenous efforts likely have grown in maturity and understanding so as to allow analysis of foreign capabilities and to attempt to duplicate past research. Chinese scientists are said to have an excellent theoretical understanding of LO technology, but apparently lack practical experience that comes with decades of applied research. China appears to have begun multiple programs to apply basic signature reduction technologies to its fighter aircraft programs and reportedly is developing new fighter aircraft that will incorporate LO technology.

K. Technology Acquisition

The PRC's efforts to develop, acquire and gain access to advanced technologies that would enhance military capabilities are multi-faceted and include the use of traditional military actors, commercial entities, and individuals involved in basic scientific research. The production of advanced weapon systems requires not only the transfer or development of the technology, but also the transfer or development of associated knowledge, including training, education, technical skills, and manufacturing know-how.

In 1979, China began modernizing its weapons facilities through a policy emphasizing production of both military and civilian goods throughout its defense industrial base. This policy shift reflects China's aspiration to attain long-term self-sufficiency through the acquisition of key foreign dual-use technologies and knowledge. Once such technology is obtained, defense-affiliated institutes and factories may apply them to the design and production of commercial and/or military end-items. Moreover, design and production of commercial goods by the defense industrial base can generate revenue and foreign exchange to finance the acquisition of advanced technology. Since 1979, thousands of PRC business entities have been established in the United States. The bulk of the business conducted by these entities is probably legitimate, but an undetermined number may target dual-use commodities and controlled technologies restricted from sale to the PRC. Authoritative PRC journals have recommended an increase in the use of overseas ethnic-Chinese scientists to transfer foreign technology.

Using academic exchange as a medium to train scientists and to develop ties between scientists, China appears to be building an informal science and technology (S&T) network around the world that could not only contribute to basic research but also to the development of commercial and military technologies. One example of a military significant S&T collection involves two Chinese students at two prominent U.S. universities collecting information regarding Terfenol-D. Terfenol-D is a rare earth metal developed by the Department of Energy's Ames Laboratories which is used in militarily critical naval and aerospace applications. Although one of the Chinese students admitted sending this information to the PLA, usually the connections between academic, commercial, and military organizations are not so clear cut. The close relationships between the personnel and organizations involved often makes it difficult to separate the research, funding, and cooperation triangle among Chinese universities, government institutes, and businesses.

Collection of Technical Information

In 1991, the China Defense Science and Technology Information Center (CDSTIC) --then the information arm for the Commission on Science, Technology and Industry for National Defense -- published an S&T collection manual titled "Sources and Techniques of Obtaining National Defense Science and Technology Intelligence." The manual suggested that 80 percent of China's defense S&T needs are met through open and gray source (purchase/subscription) materials. This manual provided detailed information on foreign open sources on defense technology and noted that as of 1991 there were roughly 4,000 individual intelligence organizations operating in China. Many of these organizations are associated with state-owned enterprises, research institutes, and academies affiliated with China's defense industrial base.

The collection of technical information probably continues to be orchestrated by the CDSTIC, which now is subordinate to the PLA's General Equipment Department (GED). The GED reportedly oversees a complex web of factories, institutes, and academies that are subordinate to China's nuclear, aeronautics, electronics, ordnance, shipbuilding, and astronautics industries. Each of these institutions has an import/export corporation to facilitate the import of technology and knowledge.

China's Defense Industrial Base

National Defense Science, Technology and Industry. China's defense industrial base -- also known as National Defense Science, Technology, and Industry (NDST&I) -- is a well-organized and redundant structure, consisting of the factories, institutes, and academies subordinate to the organizations that represent the nuclear, aeronautics, electronics, ordnance, shipbuilding, and astronautics industries.

Prior to the reforms of 1998, five corporations and one ministry represented China's defense industrial base:

- Ministry of Electronics Industry
- China National Nuclear Corporation (CNNC)
- Aviation Industries of China (AVIC)
- China North Industries Corporation (CNIC)
- China State Shipbuilding Corporation (CSSC)
- China Aerospace Corporation (CASC)

In 1998, each of the five corporations split into two competing corporations in the shipbuilding, aviation, nuclear, ordnance, and missile/aerospace arenas. The Ministry of Electronics Industry merged with the Ministry of Posts and Telecommunications to become the Ministry of Information Technology and Telecom Industry. The current organization of China's defense industrial base is:

- Ministry of Information Industry (MII)
- China State Shipbuilding Corporation (CSSC)
- China State Shipbuilding Industry Corporation (CSIC)
- China Aviation Industry Corporation I (AVIC I)
- China Aviation Industry Corporation II (AVIC II)

- China National Nuclear Corporation (CNNC)
- China National Engineering Construction Corporation (CNEC)
- China North Industries Group Corporation (CNIGC)
- China South Industries Group Corporation (CSIGC)
- China Aerospace Science and Industry Corporation (CASIC)
- China Aerospace Science and Technology Corporation (CASC)

Each of these corporations and MII have subordinate import/export corporations. These sub-corporations facilitate the import of technology and the export of commercial and military goods for profit. All of these import/export corporations have at least one branch office operating in the United States.

The import/export corporations are:

- China Nuclear Energy Industry Corporation
- China Aero-Technology Import/Export Corporation
- China North Industries Corporation
- China National Electronics Import/Export Corporation
- China Shipbuilding Trading Corporation
- China Great Wall Industries Corporation
- China Precision Machinery Import/Export Corporation

Chinese Academy of Sciences. The Chinese Academy of Sciences (CAS), directly subordinate to the State Council, is China's highest academic institution for comprehensive research in the natural and applied sciences. Research is conducted in the basic sciences, such as mathematics, physics, chemistry, astronomy, and geology, as well as in newer scientific fields, such as systems engineering, remote sensing, computers, automation, robotics, semiconductors, and lasers. CAS has branches with subordinate institutes in Shanghai, Nanjing, Hefei, Guangzhou, Wuhan, Changchun, Shenyang, Chengdu, Kunming, Xian, Lanzhou, and Xinjian -- cities also strongly associated with China's defense industrial base. As a consequence, these organizations often work closely with the military in applied research, with products funded or developed for use by the military.

L. Military Budget Trends

In March 2002, Chinese Finance Minister Xiang Huaicheng announced that China is increasing military spending in 2002 by 17.5 percent -- or $3 billion -- bringing the publicly reported total to $20 billion. The publicly disclosed figures do not include major spending for weapons research and for the purchase of foreign weapons. Actual military spending, including the large but difficult-to-assess off budget financing portion, could total as much as $65 billion, making China the second largest defense spender in the world after the United States, and the largest defense spender in Asia.

Additional double-digit defense budget growth is likely, at least through the 10th Five-Year Plan (2001-05). These increases will be used to offset losses from divested PLA commercial enterprises, underwrite escalating personnel costs, and fund PLA modernization. Beijing's 2002 Defense White Paper and its predecessor editions detail the official PLA budget, but only by

poorly defined resource categories and not by service or mission. The release of these papers may be an attempt by China to appear to be increasing its military transparency to the West while in reality keeping much secret.

Although Minister Xiang cited modernization as one reason for the budget increase, most defense modernization spending occurs outside the public PLA budget. Imported weapon systems are financed by separate hard-currency allocations from the State Council and are not charged against the PLA budget. The PLA pays for domestically produced Chinese equipment, which makes up about half of the modernization effort, but it pays only the incremental cost of manufacturing one system and none of the substantial research and development (R&D) or startup costs. Such costs appear in the budget of the state-owned industry that produces the equipment, including substantial hard-currency costs for foreign technology and assistance.

The PLA receives funding from numerous, extra-budgetary sources. These sources include special allocations for procurement, at least partially derived from arms sales profits; sales of military unit services (e.g., construction) and products (e.g., farm produce) and other traditional PLA self-sufficiency activities; earnings from PLA enterprises remaining after divestment, which still produce civilian services and products; and, defense-related allocations in other ministries (e.g., state S&T budgets and agencies at the provincial and local levels). In addition, China's proliferation of WMD-associated technology and conventional munitions may help subsidize certain force modernization programs. Tracking these sources complicates the process of identifying and assessing defense budgetary trends. There is no comprehensive data on how these off-budget components of defense spending are growing or declining, or what effect this has on the overall total.

Projecting Chinese defense spending over a long period of time is problematic, especially given that even current total defense spending is not adequately defined or reported. However, anticipated economic growth would define somewhat the boundaries of future defense expenditures. Using this method, annual defense spending could increase in real terms three- to four-fold between now and 2020.

SECTION V.

SECURITY SITUATION IN THE TAIWAN STRAIT

A. Beijing's Strategy Towards Taiwan

Beijing's longstanding approach to Taiwan is multi-faceted, integrating political, economic, cultural, and military strategies. Both Beijing and Taipei have stated that they seek a peaceful resolution to the unification issue. However, the PRC's ambitious military modernization casts a cloud over its declared preference for resolving differences with Taiwan through peaceful means. Beijing has refused to renounce the use of force against Taiwan and has listed the following circumstances under which it would take up arms against the island: a formal declaration of independence by Taipei, foreign intervention in Taiwan's internal affairs, Taiwan's acquisition of nuclear weapons, and internal unrest on Taiwan. China's leaders also have indicated that indefinite delays in the resumption of cross-Strait dialogue could be justification for the use of force. These statements, and the PRC's ambitious military modernization program, may reflect an increasing willingness to consider the use of force to achieve unification or, at a minimum, to demonstrate an upgraded military capability in hopes of deterring Taiwan from moving further towards independence. China believes that the increasing economic interaction between Taiwan and the PRC means that the people on Taiwan will see increasing reasons to unify, or at a minimum, to avoid movement toward "independence." At the same time, Beijing has indicated concern that the democratization of Taiwan, the election of Chen Shui-bian -- whose party has favored Taiwan independence -- and the increasingly favorable security relations between the United States and Taiwan, all may increase support in Taiwan for movement toward *de facto* or *de jure* independence. We estimate that Beijing's objectives in any Taiwan-related crisis would be (1) to compel Taiwan authorities to enter into negotiations on Beijing's terms and (2) to undertake military operations as required with enough speed to preclude third-party intervention.

While expanded economic interaction between China and Taiwan eventually could bring about an amelioration of cross-Strait tensions, cross-Strait relations likely will remain sensitive and could quickly deteriorate if either side perceives that the other has made a provocative statement or action.

The internal mainland debate over how to respond to Taiwan has ebbed and flowed over the past ten years. Beijing took military measures prior to the 1995 and 1996 Taiwan elections in an effort to intimidate the Taiwan populace from voting for independence-leaning candidates. Following then-Taiwan President Lee Teng-hui's "state-to-state" comments in 1999, Beijing launched a propaganda barrage and military activity in and around the Taiwan Strait. Prior to the March 2000 Taiwan presidential election, PRC Premier Zhu Rongji threatened that increased tensions could result if Chen Shui-bian were elected. Following Chen's election, Beijing pursued a low-key approach of expanding contacts with political and economic elites on Taiwan who traditionally have favored unification, while officially adopting a "wait and see" policy. Since Chen's inauguration China has been increasingly direct in criticizing Chen. China's leadership was caught off-guard in the December 2001 legislative elections when Chen's Democratic Progressive Party (DPP) did better than the mainland-favored Kuomintang (KMT).

Over the last year, Beijing has emphasized its readiness to increase cross-Strait ties, but it has not changed its fundamental prerequisite: that Taiwan's recognize "one China" prior to the PRC's agreeing to any cross-Strait political talks. Although President Chen has stated that his administration will not seek "Taiwan independence," Beijing perceives many political trends on the island as leading in that direction. Beijing reacted mildly to Chen's August 2002 "one side, one country" remarks that defined the Taiwan relationship with the mainland as between countries on each side of the Taiwan Strait. Beijing nonetheless perceived his statement as evidence that Chen was not "sincere" about reunification with China. As Chen's popularity dropped in 2002, the opposition parties in Taiwan made progress toward a political alliance that could pose a significant challenge toward Chen's re-election in 2004.

Beijing's approach over the last year suggests that China's leaders want to appear to be the party willing to negotiate and to court public opinion on Taiwan, without making substantive compromises to their Taiwan policy. The 16th Party Congress report continued to state that China would negotiate on the basis of "one China" "one country, two systems" and Jiang Zemin's "eight-points" speech made in January 1995. On the seventh anniversary of the "eight-points" speech in January 2002, Vice Premier Qian Qichen made a speech indicating that the vast majority of DPP leaders would be welcome on the mainland. However, Beijing also stated that these leaders would first have to recognize the "one China" policy and that the "minority" of DPP leaders -- such as President Chen who were considered to be pro-independence -- would not be welcome.

Beijing continues to pressure Taiwan in the international arena through diplomatic recognition of the PRC under the "one China policy" and linking political behavior favorable to Beijing to investment incentives. Beijing has attempted through diplomatic and economic pressure on third countries to limit Taiwan's interaction with foreign states, especially attempting to limit the travel of Taiwan officials to foreign countries. In addition, Beijing has actively sought to limit Taiwan's involvement in international organizations, especially those that require statehood status for membership, such as the World Health Organization and UN, as well as several that do not require statehood status.

Debate in Beijing over more coercive options may wane in the run-up to Chen's anticipated reelection bid in 2004 if it appears more probable that Chen may be defeated. Meanwhile, the PLA is continuing to develop military capabilities that could expand its options for an armed conflict against Taiwan, increasing political pressure on Taiwan in the international arena, forging closer economic ties -- without changing its fundamental policy.

Beijing's Political and Economic Options for Coercion

Beijing has a range of non-lethal coercive options, including political, diplomatic, economic, and military measures. Chinese coercive strategies would seek to influence Taiwan's elected policymakers whose actions are driven, at least in part, by public opinion. Presently, the population on Taiwan overwhelmingly supports the status quo, through which it enjoys economic prosperity, democracy, and *de facto* autonomy. Beijing believes that any coercive measures that threatened the island's livelihood likely would subject Taiwan's leadership to

substantial internal pressure. China's leaders also assess that the sensitivity of Taiwan's economy to changing cross-Strait dynamics would enable them to directly or indirectly manipulate Taiwan's stock exchange and investor confidence during periods of tension.

Beijing's Military Options

The PLA's offensive capabilities improve as each year passes, providing Beijing, in the absence of an effective response by Taiwan, with an increasing number of credible military options to intimidate or actually attack Taiwan. Should China use force, its primary goal likely would be to compel a negotiated solution on terms favorable to Beijing. Beijing would most likely seek a rapid collapse of Taiwan's national will to preclude the United States from intervening on Taipei's behalf. The specific coercive military strategy that Beijing would adopt is unclear, and perhaps is the subject of extensive internal debate. A coercive campaign might seek to deter or punish Taiwan through the sudden application of violence. China might choose to escalate gradually the level of military pressure in order to compel Taiwan's political leadership to adopt policies favorable to Beijing's interests. On the other hand, Beijing may seek to deny Taiwan's military its ability to resist effectively by conducting a major attack with little or no warning, thereby hoping to convince the leadership that further resistance is futile. The PLA also could adopt a decapitation strategy, seeking to neutralize Taiwan's political and military leadership on the assumption that their successors would adopt policies more favorable to Beijing.

Coercive military options might include, but are not limited to, information operations, an air and missile campaign, a naval blockade, or a rapid attack designed to catch Taiwan off guard and present Taipei and Washington with a *fait accompli*. With little warning, Beijing might choose to quickly seize key terrain on Taiwan using amphibious or airborne forces, with the threat of major destruction as the means to compel some form of political capitulation. China's efforts to develop coercive military options present challenges not only to Taiwan, but also to other countries in the region such as the Philippines and Japan. Should these coercive measures fail, Beijing might attempt to occupy the entire island of Taiwan. Such an operation might require a major commitment of civilian air and maritime transport assets and would face many difficulties. The PLA's success in a D-Day style invasion of Taiwan would rest on a number of variables, some tangible – principally the lack of amphibious lift – as well as a number of intangibles, including personnel and equipment attrition rates on both sides of the Strait, the interoperability of PLA forces, and the ability of China's logistical system to support a high tempo of operations.

Taiwan's Susceptibility to Coercion

Assessing Taiwan's susceptibility to coercion depends upon several factors. Perhaps the most important factor is the degree to which Taiwan's leaders and populace perceive themselves to be different and separate from the mainland. Will they perceive that there is something real and significant to be protected by resisting the PRC? A second factor will be Taiwan's assessment whether the U.S. will assist in deterring and defeating PRC coercion. Another element will be the nature of the demands that Beijing imposes. If Beijing's demands are limited, then the threshold at which Taiwan would be willing to negotiate may be lower. Other factors include Taiwan's military capabilities and vulnerabilities, the PLA's ability to apply force successfully, and the ability of political leaders in Beijing and Taipei to forge and maintain a consensus within

their respective governments and among the general populace. Successful coercion also may depend upon Beijing's ability to convey its capability to escalate the conflict and inflict a greater price on defiance. A final, and perhaps most important, factor that will determine the success or failure of a PRC coercive campaign is the degree of especially U.S. and international support that rallies to assist Taiwan.

Factors Constraining PRC Use of Force Against Taiwan

The PRC's decision-making on the use of force against Taiwan will continue to entail an evaluation of a number of internal and external constraints. One key factor in China's assessment of whether to wage war on Taiwan is Beijing's perception of Taiwan's will to resist. The other principal factor is likely to be a leadership assessment of PLA capabilities to execute a desired coercive option to attain the desired political objective. Beijing most likely would not only consider its military capabilities relative to Taiwan, but also the PLA's capability to deter or deny U.S. or any other external intervention on Taiwan's behalf. China's leaders reportedly believe that failure in any military venture against Taiwan would pose a threat to the survival of Communist Party rule.

China apparently also is sensitive to the potential political and economic costs that it could incur from war with Taiwan, and recognizes that the use of force against Taiwan could severely damage China's regional and global interests. In the present period, China has avoided activities that might threaten its economic growth and access to foreign markets, investment, and technology. The Beijing leadership also would consider the state of the overall security environment, especially in the Asia-Pacific region.

Dealing with External Intervention

If Beijing perceived war with Taiwan was inevitable, it most likely would adopt a warfighting strategy to contain and limit the geographic scope of the conflict. Moreover, China's leaders would seek to execute its military operations with sufficient force and speed to achieve a military solution before outside powers could intervene on Taiwan's behalf. This strategy could entail a propaganda campaign against Taiwan threatening the use of force, while concurrently building a case that hostilities were an internal issue and therefore not subject to international mediation or intervention. In response to external intervention in a regional conflict involving China, the PLA would attempt to weaken U.S. or other third party's resolve by demonstrating the capability to hold at risk -- or actually striking -- high-value assets. The PLA would seek to leverage emerging asymmetric capabilities to counter or negate an adversary's superiorities. Chinese journals provide some evidence of the PLA's intent to use asymmetrical means to complicate U.S. aircraft carrier battle group operations in support of Taiwan.

B. Force Posture

Developing credible military options for a Taiwan scenario remains the focus of China's military modernization. Earlier in 2002, Beijing announced a significant increase in defense spending. Should this trend continue, China could double its announced defense spending between 2000-2005. Over the past few years, Beijing's military training exercises have taken on an

increasingly real-world focus, emphasizing rigorous practice and operational capabilities, and improving incrementally the military's actual ability to use force. These actions are aimed not only at Taiwan, but also at increasing the risk to U.S. forces and to the United States itself in any future Taiwan contingency.

PLA Ground Force Posture

PLA ground forces have a considerable numerical advantage over Taiwan's army and marine forces. Three group armies are based in Nanjing Military Region (MR) opposite Taiwan. These forces could be augmented by group armies from other MRs in the event of an all-out invasion of the island. These group armies most likely would be supported by airborne, SOF, and marine units. Despite its numerical advantage, China's main ground forces are limited by shortcomings in such areas as sea-lift and logistics. However, China is expanding incrementally its ability to transport ground forces by air and appears to be evaluating various forms of sealift.

PLA Naval Force Posture

Over the last decade, the PLAN has streamlined and modernized its fleet by eliminating some older ships and replacing them with fewer, more modern vessels. However, the PLAN still has a large fleet that includes more than 60 large surface combatants, about 60 attack submarines, more than 40 medium and heavy amphibious lift ships, and approximately 50 coastal missile patrol craft. Two-thirds of those assets are located in the East and South Sea Fleets. Mission critical assets from the North Sea Fleet could augment these forces. In addition, Beijing reportedly is stepping up efforts to refit merchant ships to make up for the shortage in naval landing vessels.

PLA Air and Naval Air Force Posture

The PLAAF and PLANAF have a combined total of approximately 3,200 combat-capable aircraft consisting of air defense and multi-role fighters, ground attack fighter-bombers, and bombers. In addition, there are over 90 reconnaissance aircraft and some 500 transports, of which approximately 14 are heavy-lift transports. The majority of PLAAF and PLANAF aircraft are based in the eastern part of the country.

PLA Conventional Ballistic Missile Force Posture

All of China's known SRBM assets are believed to be based in Nanjing MR. The number of conventional ballistic missiles deployed opposite Taiwan is expected to increase substantially over the next several years.

Forces Likely to be Involved in a Taiwan Campaign

During a major military campaign against Taiwan, the Nanjing MR would become part of the so-called "Nanjing War Zone," which probably would include, at a minimum, the three group armies in the Nanjing MR, elements from group armies based in adjacent military regions (e.g.,

Guangzhou and Jinan MRs), as well as China's airborne and marine forces. Air assets would come primarily from the Nanjing MR augmented by mission-critical aircraft from other parts of China. The PLAN would commit assets from both the East and South Sea Fleets, as well as mission-critical assets from the North Sea Fleet. Finally, all deployed SRBMs most likely would be available to the "war zone" commander.

Effects of Strategic and Operational Surprise on Taiwan's Military Operations

The PLA believes that surprise and deception are crucial for the success of a military campaign. China likely would not be willing to initiate any military action unless assured of a significant degree of strategic surprise. A surprise missile and air strike on Taiwan most likely would damage severely most of Taiwan's air bases, significantly degrading its land-based air defenses, C4ISR systems, and ability to generate sorties in the absence of Taiwan efforts to harden facilities and increase redundancy. Concurrently, the PLAN also could attack major Taiwan surface combatants with minimal warning. If successful, these attacks might enable the PLA to protect a large cross-Strait sea and air fleet and land troops in sufficient strength to achieve a foothold on the island although it still lacks sufficient lift capability to sustain amphibious operations. If the PLA effectively incorporates these concepts into its doctrine, Taiwan could become increasingly vulnerable to strategic and operational-level surprise.

Military Imbalances in the Taiwan Strait

Missile Forces. China has an arsenal of approximately 450 SRBMs that can strike Taiwan. This number will grow substantially over the next few years. Taiwan's current ability to defend against ballistic missiles is negligible, although it has committed to upgrading its defensive capabilities.

Naval Forces. Although the Taiwan Navy's surface combatants maintain a qualitative edge over those of the PLAN, China's much larger number of submarines and cruise missile-firing aircraft would pose a considerable torpedo, mine, and air threat. Commercial merchant and fishing ships also could pose a potential threat to block ports with mines. In addition, ASCMs on patrol boats and major surface combatants could strike Taiwan vessels.

Air Forces. The Taiwan Air Force (TAF) dominated the airspace over the Taiwan Strait for many years. Today, Taiwan maintains a qualitative edge over and possesses twice as many 4th-generation fighters as China. The PLAAF does not appear focused on large-force employment or sustaining high sortie rates for extended periods of operations. Pilot proficiency is improving, but China's best pilots lag behind their Taiwan counterparts in terms of capabilities.

However, China's force modernization, weaponry, pilot training, tactics, and command and control are gradually beginning to erode Taiwan's qualitative edge. The number of Chinese 4th-generation fighters eventually will surpass those of Taiwan. China also is seeking to improve situational awareness. Beijing's SRBM force could be used to soften Taiwan's air defenses and disrupt airbase operations, supporting any air campaign designed to cripple the TAF and damage or destroy Taiwan military facilities. Over the next several years, given current trends, China likely will be able to cause significant damage to all of Taiwan's airfields and quickly degrade

Taiwan's ground based air defenses and associated command and control through a combination of SRBMs, LACMs, anti-radiation weapons, SOF, and other assets, unless Taiwan undertakes the defensive upgrades needed and to which it is committed.

Ground Forces. China's primary ground force advantage is its overwhelming size, provided these forces could be delivered to the battleground. Taiwan's ground forces will maintain an edge for combat on the main island unless China expands significantly its fleet of medium and heavy lift amphibious ships and develops a robust amphibious logistics infrastructure. There is little discussion in the available Chinese literature of any need to develop such capabilities.

C. Assessment of Challenges During 2001-2002 to Taiwan's Deterrence Posture

During the past year, the PLA ground force showed incremental improvements, evidenced by an increase in the training tempo and equipment upgrades. Naval enhancements included greater familiarization and crew proficiency on recently acquired platforms and associated weapon systems, as well an increase in the PLAN's maritime surveillance capability. The most significant change in the PLAAF's force posture was the acquisition and deployment of new Su-30 fighter aircraft and the reported upgrade of air facilities along the Taiwan Strait.

Taiwan Defense Reform

Since the mid-1990s, driven by Taiwan's expanding democratization and economic prosperity, the Taiwan military has been seeking to address several deficiencies. These deficiencies include an opaque military policymaking system; a ground force-centric orientation; and a conservative military leadership culture. As part of this remedial and reform process, in January 2000, the Legislative Yuan passed two major defense reform laws, which became effective in March 2002.

The National Defense Law (NDL) formally designates the Defense Minister as the island's principal defense official and subordinates the General Staff to the Ministry of National Defense, which assumes responsibility for defense policy and military research and development. Another piece of legislation adds a second vice minister and establishes or resubordinates from the General Staff ten offices and five bureaus responsible for strategic planning, integrated assessments, procurement, budgeting, military schools, and military law. The Chief of the General Staff reports directly to the Defense Minister and supervises a smaller General Staff focused exclusively on directing military operations.

If implemented successfully, these reform laws will strengthen civilian oversight and reduce inter-service rivalry, especially with respect to the island's strategic direction and force planning. They also should promote the joint service environment needed to meet the growing challenge from the PLA's modernizing air, naval, and missile forces. Despite the reforms, however, the defense budget's steady decline as a percentage of total government spending increasingly will challenge Taiwan's force modernization.

Ground Forces. In the mid-1990s the Taiwan Army was a force of roughly 250,000, with a strategic focus on counter-landing operations. From 1997-2001, the C*hing Shih* reform initiative

downsized the entire military from approximately 450,000 to around 385,000 personnel, with the Army taking a disproportionate reduction. Following the downsizing, the Army was left with about 200,000 personnel organized into combined arms brigades. The counter-landing focus, however, remains largely unchanged. While significant strides have been made over the past half-decade, the Army still has major shortcomings as a fighting force, particularly in the areas of joint war-fighting, training, and reservist mobilization.

Naval Forces. As a result of the C*hing Shih* reforms, the Taiwan Navy has shrunk from approximately 55,000 to 45,000 personnel, while preserving its basic organizational structure, fleet size, and mission focus on counter-blockade/defense of sea lines of communication. The Navy is organizationally well-run, its equipment generally well-maintained, and its leadership apparently aware of its own strengths, weaknesses, and the nature of the threat it faces. The Navy has benefited from several important hardware acquisitions from abroad; as a result, its fleet contains a number of relatively new platforms with enhanced combat potential. Despite these improvements, however, Navy operations are not well-integrated with those of either the Army or Air Force, and joint training is infrequent and rudimentary. Perhaps a more significant shortcoming is the Navy's inability to conduct multiple missions simultaneously.

Air Forces. In many respects, the Taiwan Air Force's (TAF) fate over the past decade closely resembles that of the Taiwan Navy. The TAF has shrunk from roughly 55,000 to 45,000 personnel during the *Ching Shih* reforms, while preserving its basic organizational structure, aircraft fleet size, and defensive counter-air mission focus. TAF officers are highly professional and hard-working. The TAF exhibits ingenuity in its use and maintenance of older hardware. The TAF senior leadership is moving to rectify highly publicized pilot shortages by extending minimum terms of service, offering large bonuses for pilots, and enlarging the pool of prospective pilot applicants. Although outnumbered by the PLAAF and PLANAF, TAF weapons systems and training qualitatively surpass those of their cross-Strait peers. However, TAF personnel -- especially its fighter pilot corps -- reportedly are overworked. Pilot training continues to focus on the defensive counter-air mission; dissimilar air combat training, close air support, and anti-surface warfare missions rarely are practiced.

SECTION VI.

SUMMARY

Beijing is pursuing its long-term political goals of developing its comprehensive national power and ensuring a favorable "strategic configuration of power." China's efforts to accomplish its security goals involve an integrated strategy that seeks to apply diplomatic, informational, military, and economic instruments of national power. China's leaders believe that national unity and stability are critical if China is to survive and develop as a nation. Chinese leaders also believe they must maintain conditions of state sovereignty and territorial integrity. While seeing opportunity and benefit in interactions with the United States -- primarily in terms of trade and technology -- Beijing apparently believes that the United States poses a significant long-term challenge.

In support of its overall national security objectives, China has embarked upon a force modernization program intended to diversify its options for use of force against potential targets such as Taiwan, the South China Sea and border defense, and to complicate United States intervention in a Taiwan Strait conflict. Preparing for a potential conflict in the Taiwan Strait is the primary driver for China's military modernization. While it professes a preference for resolving the Taiwan issue peacefully, Beijing is also seeking credible military options. Should China use force against Taiwan, its primary goal likely would be to compel a quick negotiated solution on terms favorable to Beijing.

China is developing advanced information technology and long-range precision strike capabilities, and looking for ways to target and exploit the perceived weaknesses of technologically superior adversaries. In particular, Beijing has greatly expanded its arsenal of increasingly accurate and lethal ballistic missiles and long-range strike aircraft that are ready for immediate application should the PLA be called upon to conduct war before its modernization aspirations are fully realized.

China's force modernization program is heavily reliant upon assistance from Russia and other states of the Former Soviet Union. China hopes to fill short-term gaps in capabilities by significantly expanding its procurement of Russian weapon systems and technical assistance over the next several years. The success of China's force modernization, however, will depend upon its ability to overcome a number of technical, logistical, and training obstacles.