

SECTION 3: THE MILITARY BALANCE ACROSS THE TAIWAN STRAIT

The Commission shall investigate and report on “REGIONAL ECONOMIC AND SECURITY IMPACTS—The triangular economic and security relationship among the United States, [Taiwan], and the People’s Republic of China (including the military modernization and force deployments of the People’s Republic of China aimed at [Taiwan]), the national budget of the People’s Republic of China, and the fiscal strength of the People’s Republic of China in relation to internal instability in the People’s Republic of China and the likelihood of the externalization of problems arising from such internal instability.”

Key Findings

- The cross-Strait military balance of power currently substantially favors the mainland. China possesses advanced aircraft, submarines, surface vessels, and ballistic missiles, in greater quantities and, in many cases, equal or greater sophistication than Taiwan’s. In an all-out conflict between the two, Taiwan, if relying only on its own capabilities, would be unable to prevent China from ultimately realizing its objectives.
- Taiwan is growing increasingly dependent on the threat of intervention from the United States to deter China from initiating hostile action against Taiwan, and on U.S. intervention to survive any attack or invasion China launches.
- The People’s Liberation Army (PLA) Navy’s surface vessel and submarine force is capable of considerably delaying the arrival of any naval force that might attempt to intervene in a Taiwan crisis and degrading its combat power. However, the lack of an integrated command, control, computer, intelligence, surveillance, and reconnaissance (C4ISR) architecture currently precludes the PLA from effective joint targeting of a carrier battle group.¹⁷¹
- There is substantial agreement among experts that a “window of vulnerability” will exist between 2008 and 2015 for U.S. forces that likely would be involved if the United States made a decision to intervene militarily in a pre-conflict China-Taiwan crisis or in a China-Taiwan conflict. Many of the Chinese modernization programs focused on Taiwan, including weapons systems such as submarines, destroyers, cruise missiles, and maneuverable ballistic missiles, and advances in C4ISR and targeting, will be deployed around or soon after 2008, while some U.S. capabilities to defeat these advances, such as ballistic missile defenses,

littoral strike assets, and an integrated anti-submarine warfare network, probably will not become operational until approximately 2015. This will decrease the deterrent effect of the possibility of U.S. intervention in a China-Taiwan conflict, and will increase the cost to the United States of intervening.

- The speed and force with which a U.S. force could respond to a Taiwan crisis will be affected by the degree to which it can secure access to bases and ports in the region. Access to such facilities in Japan, Singapore, and Philippines would be especially important.
- Despite disagreement within the Legislative Yuan, the Taiwan government is committed to its own defense and is taking measures to improve its deterrent posture. It has begun development of an indigenous surface-to-surface missile and is seeking to purchase greater numbers of F-16 fighter aircraft from the United States.

China repeatedly has made it clear that the matter of Taiwan is an extremely high priority. It considers Taiwan to be “an inalienable part of China,” and steadfastly seeks to isolate Taiwan from the international community using political and economic means. The Chinese leadership also frequently reiterates its willingness to use military force against Taiwan if it perceives Taiwan to have moved too far toward independence. In March 2005, to the displeasure of much of the international community, the National People’s Congress enacted the Anti-Secession Law that codified the authority China claims to use force to counter any move by Taiwan toward separation or independence. China demonstrates its seriousness on this topic by maintaining and constantly improving and expanding its military capability to threaten Taiwan with blockade, strike, or invasion in order to deter or coerce Taiwan from seeking *de jure* independence, which continues to be one of China’s top strategic priorities. In its 2004 National Defense White Paper, the Chinese government asserts that “the separatist activities of the “Taiwan independence” forces have increasingly become the biggest immediate threat to China’s sovereignty and territorial integrity as well as peace and stability in ... the Asia-Pacific region as a whole.”¹⁷²

The PLA Strategy

In seeking to prevent Taiwan from moving toward or achieving independence, the PLA has developed a number of strategies and associated capabilities that will allow it to escalate the threat or actual degree of conflict as it sees fit. In addition to the physical threat created by this buildup, a component of the strategy is to influence Taiwan’s domestic politics. The first of these strategies is deterrence achieved by the threat of imposing unacceptable costs upon Taiwan. As early as the Taiwan Strait Crisis of 1995–1996,¹⁷³ the PLA’s strategic missile force, the Second Artillery, has deployed steadily increasing numbers of short- and medium-range ballistic missiles in the regions opposite Taiwan primarily as a means of intimidating Taiwan’s populace of 23 million. Independent consultant Mark Stokes explained in his March 2006 testimony to the Commission that “the most significant aspect of the missiles is political,

psychological, and strategic in nature ... [Their] primary purpose is to intimidate Taiwan's population, to prevent them from taking actions deemed to be inimical to Beijing's interests."¹⁷⁴ However, Mr. Stokes also notes that this build up has been going on for some time and should no longer be surprising.

The acquisition and development of advanced conventional and nuclear-powered attack submarines and advanced surface vessels constitutes a second component in this deterrence strategy. The PLA Navy currently operates more than two dozen advanced submarines of indigenous and Russian origin as well as dozens of older submarines that are easier to detect by sonar, but still very capable.¹⁷⁵ The PLA Navy also has been modernizing its fleet of surface combatants, and introduced destroyers and frigates in five different classes during the 2005-to-2006 period.¹⁷⁶ The threat these pose to Taiwan's navy and to regional commercial shipping—upon which Taiwan's economy depends—is very significant.

China's increasingly capable force of maritime and air force strike aircraft is a third and final component to this deterrence strategy. Within the PLA Air Force and Navy, the ratio of newer, advanced aircraft to older, 1950s-era models is steadily increasing. Newer systems are equipped with the sensors and targeting packages capable of launching cruise missiles and precision-guided bombs against land and sea-based targets.¹⁷⁷

If the threat of force fails to deter Taiwan, the PLA is prepared to escalate tensions through the employment of a blockade or "sea-denial" strategy.¹⁷⁸ This could range in severity from a demonstration similar to that of the 1995–1996 Strait Crisis where missiles were fired into sea areas adjacent to Taiwanese ports, to the actual sinking of commercial vessels. The objective would be to reduce or even cut entirely commercial shipping to and from Taiwan in order to sever its economic lifeline. Such action would be "very, very detrimental to Taiwan's economy ..."¹⁷⁹

Attack and invasion of Taiwan is the last and most severe strategic option for China. This scenario would most likely employ the full range of Chinese armed forces, with strikes by conventionally armed short- and medium-range ballistic missiles and by PLA Air Force and Navy aircraft, and with raids by special operations troops to "soften up" Taiwan for a full-scale amphibious and airborne assault.¹⁸⁰ PLA doctrine for such an operation stresses quick, decisive strikes on command and control nodes and other key facilities that would paralyze Taiwan's defenses and enable the insertion of a PLA force sufficiently large and capable to end the conflict on Beijing's terms before aid could arrive.¹⁸¹

In both the blockade and invasion scenarios, Chinese strategists believe that they will likely have to contend with U.S. intervention and perhaps that of the United States' treaty ally Japan in addition to Taiwan's own armed forces.¹⁸² Thus the direction of much of China's military modernization has been driven by a strategy of "sea denial" to block or impede access to the immediate area surrounding Taiwan until Beijing's aims have been achieved. In his testimony to the Commission, Mr. Cortez Cooper of Hicks and Associates Inc. explains, "Beijing is focused on fielding modern destroyers, submarines, cruise missiles, and maritime strike aircraft to deter or prevent an adversary for a given period of time in or

above a critical sea lane or maritime zone of maneuver.”¹⁸³ According to Mr. Cooper, China’s current capabilities “could be quite effective in slowing U.S. response to a short, limited objective fight on China’s periphery.”¹⁸⁴ By 2008, China will have the capability to conduct credible short-term sea denial operations out to roughly 400 nautical miles. By 2010, it is projected it will be able to sustain such operations for a few weeks.¹⁸⁵

PLA Force Modernization and Capabilities

The direction of PLA modernization has, in large measure, been driven by planning for effecting a blockade of Taiwan and an anti-access campaign. In order to counter Taiwan’s armed forces, the PLA has developed a number of capabilities. The first of these is the growing short- and medium-range ballistic missile force. In his testimony before the Commission, Mr. Stokes stated, “the PRC’s growing arsenal of increasingly accurate and lethal conventional ballistic and land attack cruise missiles is a central aspect of Beijing’s strategy against Taiwan . . .”¹⁸⁶

Since the Taiwan Strait Crisis in 1995–96, the Second Artillery has deployed a growing number of ballistic missiles across the Strait from Taiwan. Currently, the Second Artillery deploys 800 ballistic missiles opposite Taiwan in seven brigades, and is adding to this number at a rate of 100 per year.¹⁸⁷ However, the number of missile transporter-erector-launchers is actually a better threat indicator, as it provides “a more accurate reading of operational effectiveness in terms of raid size”—or the ability to overwhelm Taiwan’s missile defense architecture.¹⁸⁸ The seven missile artillery brigades opposite Taiwan (out of a PLA total estimated between 16 and 19)¹⁸⁹ currently possess 168 to 336 reusable launchers¹⁹⁰ capable of reloading every 45 minutes.¹⁹¹

It is reported that the PLA may be deploying surface-to-surface land attack cruise missiles to supplement the existing ballistic missile force. China may add as many as 200 DH-10¹⁹² land attack cruise missiles to the areas opposite Taiwan by the end of 2006.¹⁹³

Chinese missiles also are increasingly sophisticated, accurate, and capable. There are indications that a variety of warhead options may now be available, including runway-cratering submunitions, penetration warheads for hardened targets, and fuel air explosives.¹⁹⁴ There are also indications that China is researching electromagnetic pulse and radio-frequency warheads.¹⁹⁵ The former, if detonated at the proper altitude, could knock out much or all electricity and unprotected electronic systems on the island.¹⁹⁶

China is expanding its airborne heavy-lift capabilities, and is showing increased interest in existing Russian aircraft. In September 2005, China agreed to purchase 32 Ilyushin IL-76 transports to supplement its existing inventory of 20. Each of these transports can carry three of China’s new airborne tanks.¹⁹⁷

China is indigenously developing increasingly capable multi-role, ground attack and air superiority aircraft and is acquiring others from Russia. The J-10,¹⁹⁸ a multi-role indigenous aircraft in development for more than 15 years, is finally being produced in sizeable numbers.¹⁹⁹ It is widely speculated that the design of this air-

craft benefited from the cancelled Israeli *Lavi* program—which in turn was based, in large measure, on the U.S. F-16 design. Similarly, after even longer developmental delays, the JH-7A²⁰⁰ ground attack aircraft now is being fielded to air units. Russian multi-role fighters, such as the Su-27SK/UBK, Su-30MKK, and Su-30MK2²⁰¹ equipped with anti-ship missiles and land attack cruise missiles, constitute a growing threat to Taiwan's defenses. Regarding air defense, the PLA Air Force now can threaten aircraft over Taiwan's airspace. The S-300PMU, an anti-aircraft surface-to-air missile acquired from Russia and deployed opposite Taiwan, can hold all aircraft in this region at risk, "denying the Taiwan Strait as an air defense buffer zone . . ." ²⁰²

In addition to building a force designed to neutralize Taiwan's defenses, another key driver of PLA modernization is a desire to develop capabilities to support an anti-access strategy. China's planning assumption is that U.S. forces—possibly supplemented by the Japanese—will attempt to influence the outcome of a Taiwan conflict. The need to delay such a force and deny it access to the sea and air spaces adjacent to Taiwan until Beijing's strategic or military objectives have been achieved, is a high priority in the minds of Chinese strategists.

In his testimony before the Commission in March 2006, Mr. Cooper outlined two pillars of China's anti-access strategy. The first is its submarine force. While the PLA Navy currently operates more than two dozen older, conventional submarines, such as the *Ming* and *Romeo* classes, it also possesses a matching number of more modern, quiet boats.²⁰³ The dozen *Kilo*-class conventional attack submarines purchased from Russia (11 of which have been delivered²⁰⁴) constitute the backbone of this force.²⁰⁵ The newer version is capable of firing advanced land attack and anti-ship cruise missiles, and anti-submarine warfare rockets, in addition to its normal complement of torpedoes.²⁰⁶ China's indigenous construction program is building four classes of submarines—ranking it first in the world in terms of the number of different types of boats in production simultaneously.²⁰⁷ In the event of conflict, locating 80 to 90 percent of only half this fleet so it can be neutralized could take weeks, leaving it able to prey on naval forces allied with Taiwan and significantly slowing the arrival their aid.²⁰⁸

The second pillar is the surface force of destroyers and frigates. Chief among these is the *Sovremenny*-class destroyer with its supersonic anti-ship cruise missiles designed to defeat the U.S. Aegis defense system. Also in the PLA Navy's inventory are domestically-produced 052 destroyers equipped with an Aegis-like radar system and capable of providing air defense for a small squadron of ships. Looking toward the future, the PLA Navy is building eight new classes of indigenous destroyers and frigates,²⁰⁹ among which is a destroyer to be equipped with a naval version of the very capable long-range S-300 air defense system.²¹⁰

A third component of China's anti-access strategy, and one that remains more in the future, is China's C4ISR architecture. The ability to coordinate space, air, land, and sea-based assets in order to locate, track, and target the enemy is an essential component of modern warfare, the importance of which Chinese strategists understand. While China is making significant progress on develop-

ment of some individual systems, such as more advanced electro-optical and synthetic aperture radar satellites; Aegis-like air defense systems; shipborne helicopters with data links; unmanned aerial reconnaissance vehicles; over-the-horizon radars; and airborne early warning aircraft and fighters with limited airborne warning and control capability, the PLA's ability to integrate these systems remains limited and is unlikely to be achieved prior to 2012.²¹¹ However, once this is achieved, these integrated systems will pose "a viable threat" to U.S. and Japanese command and control nodes, logistics assets, and forward deployed forces.²¹²

It appears that China has not yet completed development of a ballistic missiles force capable of targeting ships at sea. However, development efforts are being pursued vigorously.²¹³ One of China's newest missiles under development, the DF-21C, may include a terminal guidance system, enabling it to defeat terminal missile defenses.²¹⁴ The successful deployment of this missile, and short range ballistic missiles with maneuvering re-entry vehicles, would constitute a fourth means of denying access to sea and air space surrounding Taiwan.²¹⁵

Finally, the PLA is investing in deep-water anti-submarine warfare. This is a relatively inexpensive deterrent and provides a useful role for the older *Romeo* and *Ming*-class submarines.²¹⁶ The PLA is researching "a wide variety of applications via varied delivery and activation mechanisms," such as acoustically-activated and remote control technology.²¹⁷

Taiwan's Armed Forces

Taiwan continues to improve its own defenses in an effort to deter possible hostile action by China and to increase its ability to resist such action. It purchases most of its weapons systems and associated military equipment from the United States. During the past five years, highly publicized squabbling between the two principal political coalitions in Taiwan has resulted in a stalemate with respect to procurement of the items in a package of defensive major weapons systems or modernization projects for current systems that the United States first proposed Taiwan purchase in 2001. Mr. Stokes told the Commission that "the most significant implication is a perception in the United States that Taiwan is not investing sufficient resources in [its] defense. This is a misperception. Taiwan's actual defense spending is \$12 billion a year, not \$8 billion, [or] about 3.6 percent of GDP ...²¹⁸ [T]he fact is that Taiwan is committed to its defense."²¹⁹

Over the last four years, Taiwan has spent \$1 billion on early warning and other defensive systems in order to minimize damage from a ballistic missile attack. It has invested in large UHF radar, tactical communications hardening to preserve command and control capabilities, and rapid runway repair to prevent the grounding of its air force.²²⁰ In August 2006, it accepted delivery of its second pair of U.S.-built, *Kidd*-class destroyers. The backbone of Taiwan's ballistic missile defense is the batteries of Patriot Advanced Capability-2 missile interceptors. Taiwan's media indicate that Taiwan's military has invested in the development of its own indigenous active terminal missile defense interceptor, possibly as an alternative

to purchase of the U.S.-upgraded Patriot Advanced Capability-3 missile.²²¹

Overall, it is undeniable that Taiwan possesses a numerically inferior mix of modern and obsolete weapons systems to counter Chinese forces. Taiwan's surface vessels include *Kidd*-class destroyers, *Perry*, *Knox*, and *Lafayette*-class frigates and a host of mine-sweeping and patrol craft. Its submarine fleet is very small and consists of only two, modern *Zwaardvis*-class, and two obsolete *Guppy*-class conventional boats, useful only for training.

To defend its airspace, Taiwan's frontline fighter aircraft include fourth-generation F-16s and Mirage 2000-5s, and the Ching-kuo Indigenous Defense Fighter. These are supplemented by older, less-capable F-5s.

In addition to its ground-based UHF early warning radar, Taiwan's air force also operates a handful of E-2 Hawkeye airborne early warning aircraft purchased from the United States, which constitute the airborne component of Taiwan's C4ISR architecture tasked to locate Chinese targets and vector Taiwan's fighters to them. The U.S. has also established operational links with Taiwan to provide early warning of Chinese ballistic missile launches.²²²

In order to deter China by holding targets on the mainland at risk, Taiwan is developing its own conventional missile force, including both land attack cruise missiles and a new generation of short-range ballistic missiles.²²³

As referenced above, political infighting in Taiwan has been the principal obstacle preventing the government from taking action on the components of the package of weapons systems and system modernizations approved for purchase by the Bush Administration in April 2001. These systems include P-3C Orion anti-submarine aircraft, conventional submarines, and Patriot Advanced Capability-3 anti-ballistic missile systems.²²⁴ Each of these systems is designed to negate existing strengths in the PLA arsenal including submarines, surface vessels, and China's conventional ballistic missile force, respectively. Taiwan officials in both party coalitions told Commissioners visiting Taipei this summer that they intend to make progress on approving some features of this package before the end of the year, but as this report is being written in October, that does not appear probable. The failure of the Legislative Yuan to take action on the April 2001 package complicates the issue of U.S. arms sales to Taiwan. This was evidenced most recently by the Bush Administration's decision in October 2006 to reject Taiwan's request for additional F-16 fighter aircraft.²²⁵

Could Taiwan be Overrun?

There is no consensus of expert observers on how rapidly and at what cost the PLA would be able to overcome Taiwan's defenses if China decided to launch an all-out assault. However, there certainly is a consensus that the military balance between the two tilts substantially toward the mainland.²²⁶ Most experts also agree that while an assault would likely prove very costly for the mainland, China probably could achieve the strategic objective of political capitulation by Taiwan if the conflict were limited to the forces of China and Taiwan. This makes the question of whether the

United States, and possibly Japan, might intervene in a China-Taiwan conflict—and how, how vigorously, and how rapidly they would engage—of paramount importance in trying to predict the outcome.

Comparison of Chinese and U.S. Armed Forces

Chinese strategists believe that the United States is likely to respond militarily on Taiwan's side in a China-Taiwan conflict. They believe that in such a case, one or more U.S. carrier battle groups might try to shield Taiwan from the Chinese attack and deprive the Chinese forces of the ability to achieve their objectives. Chinese strategists also understand that China does not possess the resources to compete with the United States in a force-on-force arms race.²²⁷ Hence, in the short-term, they are focused primarily on one strategy—sea-denial—and developing capabilities that support this strategy. Ballistic missiles with terminal guidance, surface vessels with supersonic anti-ship cruise missiles, and attack submarines capable of launching cruise missiles while submerged constitute several layers of counter-carrier capability and would significantly affect the speed with which the United States could respond in a crisis.²²⁸ Regarding the PLA Navy's submarine force, Mr. Cooper told the Commission, "In a protracted head-to-head fight [with the U.S. Navy], the PLA would lose these submarines; but they could be quite effective in slowing U.S. response to a short, limited objective fight on China's periphery."

However, the PLA is still bound by significant limitations, principally in the areas of anti-submarine warfare²²⁹ and C4ISR integration. The PLA is attempting to remedy its C4ISR shortfall by developing indigenous and procuring foreign systems, but it currently lacks the architecture and systems integration required for precision strikes necessary to attack and sink an aircraft carrier.²³⁰

If the PLA can sustain its pace of modernization, in the next decade it is likely to introduce greater numbers of quieter, more lethal nuclear submarines, and conventional submarines equipped with air-independent propulsion allowing for longer submergence; more advanced fighter, ground-attack, airborne early warning, air-to-air refueling, and heavy lift aircraft; ballistic missiles with terminal guidance; and perhaps one or two aircraft carriers²³¹ or air capable ships.²³² The PLA also is likely to improve its deep-water anti-submarine mining capabilities and perhaps acquire strategic bombers from Russia.²³³ Significantly, the PLA also is likely to develop and operationalize an integrated C4ISR architecture capable of joint targeting.

U.S. armed forces arguably are the best equipped in the world by most measures. The Aegis radar air defense system on U.S. surface vessels, *Seawolf*- and *Virginia*-class nuclear submarines, space-based assets, and airborne early warning aircraft, among other systems, continue to be "the gold standard" in their respective categories. U.S. joint targeting and precision-strike capabilities are unmatched, made possible by an integrated C4ISR architecture connecting aircraft, ships, satellites, and ground forces through a variety of data links.

U.S. armed forces are seeking to develop and implement enhanced littoral operations, effective theater ballistic missile defense capability, an integrated anti-submarine network, and cutting edge air superiority and ground attack aircraft. For example, the introduction of the littoral combat ship and the *Zumwalt*-class DDG1000 will provide the U.S. Navy with a stealthy force capable of sophisticated anti-submarine warfare and fire-support operations. Fielding the F/A-22 air superiority fighter and the F-35 Joint Strike Fighter, with their stealth, range, and maneuverability, will substantially increase the lethality of air and ground attack operations.

The trends in both Chinese and U.S. armed forces weapons and ancillary systems development and the projected deployment dates for these systems reveal a window of vulnerability²³⁴ for the United States between 2008 and 2015. Many Chinese modernization programs focused on Taiwan, such as submarines, destroyers, and cruise and maneuverable ballistic missiles, will be deployed around 2008, while some U.S. capabilities to defeat a Chinese anti-access strategy, such as ballistic missile defenses, littoral strike assets, and an integrated anti-submarine warfare network, may not be ready for deployment until 2015.²³⁵