CHAPTER 10

China's Perspective on Non-Strategic Nuclear Weapons and Arms Control

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> *China has succeeded in building a modest-sized nuclear arsenal of impressive destructive power and technological sophistication. It consists of bombers and land- and sea-based ballistic missiles with fission and fusion weapons ranging from about 20 kilotons to 3.3 megatons in yield. We estimate that approximately 700 warheads of all types were produced from 1964 to 1992. About 300 are currently deployed with bomber and missile forces and another 150 are for tactical weapon systems.*[1]

Introduction

During the November 2000 conference on dealing with non-strategic nuclear weapons (NSNW), Brad Roberts challenged the participants to go beyond looking at the issue strictly through a U.S.-NATO-Russian lens.[2] He stressed, "If there is an arms control approach to NSNW, then it must encompass China and perhaps other countries in Asia."

Since the general focus of the conference (as with most arms control discussions) was on U.S.-Russian issues, the purpose of this paper is to discuss China's perspective on NSNW and arms control.[3] This is a daunting task given the lack of transparency surrounding the People's Republic of China's (PRC) overall nuclear weapons program, Beijing's reluctance to discuss its nuclear forces, inconclusive open source information on Chinese NSNW, and the lack of a universal definition of NSNW. The China's People's Liberation Army (PLA) refers to NSNW as tactical nuclear weapons (TNW) or theater and tactical nuclear weapons. The PLA defines TNW (*zhanshu hewuqi*) as follows:[4]

> Tactical nuclear weapons are used to support troops in combat, and to directly affect the enemy's actions. In general, TNW systems are less powerful nuclear weapons delivered from shorter ranges by air or ground launch systems and have a command and control organization. TNW systems include short-range surface-to-surface missiles, bombs dropped by tactical bombers, ship-to-ship and ship-air missiles, antisubmarine missiles, depth charges, artillery shells, and land mines.

For purposes of this paper, China's NSNW include all nuclear weapons excluding intercontinental ballistic missiles (ICBMs).[5]

This paper will address what is known about China's nuclear program to include the evolution of the PRC's nuclear doctrine, Beijing's arms control involvement, history of China's NSNW, the PLA's Second Artillery Corps, and potential scenarios where NSNW could be used. It will not address other Asian countries' views of China's NSNW and arms control.
Although the broad issues of human rights, trade, WMD and missile proliferation, and national and theater missile defense tend to dominate the headlines today, the United States has been concerned with China's secretive nuclear weapons program since the 1950s. General Douglas MacArthur advocated a nuclear attack on China during the early stages of the Korean war,[6] and President Lyndon B. Johnson considered bombing China prior to the PRC's first nuclear detonation in October 1964 to stop the PRC from becoming a nuclear power.[7] Since the 1960s, Beijing has consistently used its domestic development and proliferation of nuclear weapons and ballistic missile technology as a political lever against the United States, especially concerning the issue of Taiwan.[8] Beijing's use of "missile diplomacy" against Taiwan in 1995-1996, the increased deployment of ballistic missiles opposite Taiwan since then, and allegations that China stole U.S. nuclear weapons secrets has significantly raised the level of concern about China's nuclear capabilities.

Although Beijing has become a participant in international arms control negotiations, China's strategic arms control focus has been on the arsenals of the United States and Russia. While China has become a signatory to several international nonproliferation treaties, China has not made public statement about the numbers or types of weapons in its arsenal; nor does it officially acknowledge possession of tactical weapons.[9] Furthermore, Beijing has been reticent to include any discussion of, or limitations on, China's nuclear force. Over the past several years, Washington and Beijing have had "talks" and a formal dialogue on arms control and nonproliferation, but these have not been categorized as negotiations. These talks have routinely been interrupted by events like the errant bombing of China's embassy in Belgrade during the 1999 air war over Serbia.

China's Nuclear Doctrine

China's nuclear doctrine has evolved since the 1950s as part of the PRC's overall military doctrine. During a November 1999 conference on China's weapons of mass destruction (WMD), Bates Gill and James Mulvenon presented a paper on "The Chinese Strategic Rocket Forces: Transition to Credible Deterrence,"[10] which reviewed China's nuclear doctrine and suggested that there are three separate components to Beijing's current strategy.

Gill and Mulvenon cite Iain Johnston's observations that "for about thirty years after China exploded its first nuclear weapon there was no coherent, publicly articulated nuclear doctrine."[11] In a similar vein, others have noted that China's nuclear weapons program "proceeded without strategic guidance" and that "until the early 1980s, there were no scenarios, no detailed linkage of the weapons to foreign policy objectives, and no serious strategic research."[12] While the Chinese began a more serious effort to develop a coherent nuclear doctrine and strategy from the mid-1980s, there remains today a paucity of knowledge about China's actual nuclear weapons doctrine, compelling analysts to glean deductively from China's publicly available statements, its internal military writings, and what is known about Chinese

nuclear weapon deployments and research programs and the purposes and intentions behind them.

Declaratory Policy

Gill and Mulvenon observe that three principal features stand out which help define the public face of Chinese nuclear weapons doctrine. First, public statements consistently reiterate the "defensive" purpose of Chinese nuclear weapons. China's long-held "no-first-use" policy serves as the foundation of this aspect of China's declared defensive nuclear posture.[13] The second distinctive feature of China's nuclear weapons doctrine has been the maintenance of a qualitatively and quantitatively "minimum deterrent,"[14] characterized by slow and often problematic nuclear force modernization. Third, as to the targeting of nuclear weapons, China claims it will not use them against non-nuclear weapon states (negative security assurances),[15] and probably would retaliate against countervalue targets.

Gill and Mulvenon point out, however, that there are a number of questions concerning China's no-first-use pledge. First, such a pledge is highly symbolic, since it is not verifiable and any violation of the pledge would not be detected until it is too late. Second, over the years there have been some indications that China's pledge may not be relevant to the first-use of nuclear weapons on Chinese soil. Faced with the threat of a conventional Soviet invasion in the 1980s, Beijing's military strategists argued that the first-use of nuclear weapons on Chinese territory would not have violated its pledge. Although the former Soviet threat has gone, the idea that no-first-use does not apply to Chinese national territory causes concern in the context of Taiwan, which China considers an integral part of the mainland.

Of note, China has apparently changed its views recently on the use of nuclear weapons as a deterrent. The PRC's October 2000 *Defense White Paper* states, "China maintains a small but effective nuclear counterattacking force in order to deter possible nuclear attacks by other countries." Of the three white papers issued since 1995, this is the first time the Chinese have stated that their nuclear forces is for deterrence.[16] The 1998 *Defense*

White Paper stated, "The major nuclear powers should abandon the nuclear deterrence policy."[17] The 2000 white paper does not make any mention about other countries' deterrence policy.

Minimum Capability

Gill and Mulvenon state that the number and types of weapons China deploys, Chinese weapon development cycles, and new nuclear programs are areas where a considerable amount of open source data is available. In reviewing this empirical record, they point out that one of the most intriguing aspects of China's nuclear weapons program has been its quantitatively and qualitatively limited nature over time. These limitations result in China's traditional minimum deterrent characterized in practice by a relatively small number of warheads, technically and numerically limited delivery vehicles, persistent concerns over the arsenal's survivability, reliability and penetrability, and a limited program of research, development and testing.

From the perspective of domestic politics, it is important to recognize first and foremost that in the critical decades that Chinese nuclear weapons were first developed, Chinese nuclear weapons decisions were firmly dominated by the views and statements of Mao Zedong and a small number of other leaders under the powerful political sway of Maoist political ideology and rhetoric. Mao's own publicly expressed opinions about nuclear weapons served as the guiding principles for the development of the Chinese arsenal. Lewis and Xue have derived seven major principles from official Maoist statements in the 1960s and 1970s which helped define the future parameters of Chinese nuclear deployments and doctrine: 1) no-first-use; 2) no tactical nuclear weapons; 3) "small but better"; 4) "small but inclusive"; 5) minimum retaliation; 6) quick recovery; and 7) soft-target kill capability.[18] A recent study by a Chinese missile scientist argues that many of these sayings continue to carry great weight in determining the fundamental quantitative and qualitative parameters of China's nuclear weapons arsenal.[19]

Although the Chinese have not clearly defined their doctrine as such, Gill and Mulvenon postulate that for the future, the

doctrine and force structure of China's nuclear force must be analyzed at three distinct levels:

- A posture of credible minimum deterrence with regard to the continental United States and Russia;
- A more offensive-oriented posture of "limited deterrence" with regard to China's theater nuclear forces; and
- An offensively-configured, preemptive, counterforce warfighting posture of "active defense" or "offensive defense" for the PLA's conventional missile forces.

Based on discussions with other analysts, however, any move toward a counterforce (military targets) versus a countervalue (civilian targets) doctrine presupposes a greater quantity of more accurate missiles.

Tactical Nuclear Weapons Doctrine

While lots of attention has been paid to China's strategic nuclear force doctrine, less attention has been paid to tactical nuclear doctrine. Iain Johnston states in a 1995 *International Security* paper that Chinese strategists in the 1980s and 1990s have been relatively clear about their preference for theater and tactical nuclear weapons.[20] Initially in the 1970s and early 1980s, Chinese writings on TNW tended to argue that these capabilities were essential to stop a Soviet armored blitzkrieg across the northern and western borders, especially since the PLA Air Force's strike aircraft were incapable of delivering TNW against Soviet tanks. However, Chinese research on TNW was relatively underdeveloped among Chinese strategists and the PLA lacked training under nuclear conditions.

Johnston further states that China's emphasis since the early 1990s on local, limited wars under high-tech conditions has lent itself to further study of TNW. He cites various PLA analysts who have written, "Even if the war were a conventional one, it should still be considered a war under nuclear conditions, since nuclear weapons would help deter both conventional and, if the opponent was a nuclear state, nuclear escalation. Among the capabilities needed to fight limited border wars are theater and

tactical missiles, including both cruise and ballistic missiles."[21] These types of statements are what Paul Godwin has called China's "aspirational doctrine" versus "operational doctrine."[22]

In 1998, Mel Gurtov and Byong-Moo Hwang discussed China's tactical nuclear doctrine following the Gulf War.[23] They cite one PLA analyst who wrote, "When manpower, firepower, and military equipment of conventional troops are short, or when they are reduced to inferiority, deployment or use of tactical or war-zone nuclear weapons can make up for and readjust conventional forces." They note, however, disagreements among some analysts who advocate "China only wants to pursue a principle….to have what others have" and others who are opposed to the use of tactical nuclear weapons to make up for inferior PLA conventional forces.

According to Brad Roberts, the debate within China about how the PLA might use nuclear weapons has changed rather dramatically in the last couple of years, especially following the Kosovo War.[24] Now there are more voices participating than ever before, including many from outside the mainstream professional military, and their views of whether or how to use nuclear weapons are widely divergent. Furthermore, there is all sorts of speculation about how to use nuclear weapons to scare away America – or to defeat its conventional forces in the Taiwan Strait without inciting U.S. escalation.

Arms Control and Disarmament

There are differing views of China's arms control and disarmament record, depending upon where one sets the baseline. On one hand, China has signed on to several international arms control treaties over the past decade, but on the other hand Beijing has been vague in discussions about reducing its own nuclear arsenal.

China's Views of Arms Control
China's involvement in multilateral arms control has been largely a reluctant response to international political pressure. Nevertheless, there is increasing support in Beijing for the view

that China obtains security benefits from participation in international arms control regimes. In formulating their arms control and nuclear modernization policies, the Chinese are reactive to China's perceived "threat environment," which includes Beijing's assessment of U.S. strategic intentions toward China.

Chinese views of strategic nuclear arms control have evolved significantly over the last three decades and are still in flux. In the 1970s, Beijing condemned the U.S.-Soviet Strategic Arms Limitations Talks as "sham disarmament" providing a cover for continuation of the U.S.-Soviet arms race.[25] The Chinese were especially concerned that the superpowers might collaborate against China, including possible joint strikes on Chinese nuclear weapons facilities, or that the United States might accommodate the Soviet Union's rising power, leaving the Russians free to increase military pressure on China. In the 1980s, the Chinese came to see advantages for Beijing in "free-riding" on arms control agreements that placed restrictions on other powers to China's benefit, including the various accords between Moscow and Washington on reductions of strategic nuclear forces, elimination of intermediate-range nuclear forces, and limitations on anti-ballistic missile systems.

According to Garrett and Glaser, China officially holds the position that it will eventually join in strategic nuclear arms reduction talks with the other declared nuclear powers.[26] However, the Chinese have intentionally left vague their position on the necessary preconditions for Chinese participation in five-power nuclear arms reductions talks. Beijing provided a general guidepost in January 1992 when a Chinese foreign ministry spokesman indicated that Beijing's requirements for joining five-power nuclear arms reductions talks was an undefined "parity" of nuclear forces. "China will naturally take part in the process of nuclear disarmament and join efforts for the complete destruction of nuclear weapons once the United States and Russia reduce their nuclear capacity to a level matching that of China."[27]

Since the mid-1980s, the Chinese have recognized increasing political and security benefits from participation in multilateral nuclear arms control negotiations and agreements. In response to international concerns about the PRC's proliferation of WMD technology, Beijing has become progressively involved in several international nonproliferation agreements and has promulgated various domestic export control regulations. These agreements include the following:

- 1984: Joined the International Atomic Energy Agency (IAEA);
- 1992: Acceded to the Nuclear Nonproliferation Treaty (NPT);
- 1993: Signed and ratified the Chemical Weapons Convention (CWC);
- 1994: Statements on fissile material production;
- 1996: Statement on safeguarded nuclear transfers;
- 1996: Signed the Comprehensive Test Ban Treaty (CTBT);
- 1997: Joined the Zangger Committee.[28]

Chinese leaders, officials, and foreign policy institute analysts still view the world in largely balance-of-power, *realpolitik* terms, including "self-help" in security. This orientation underlies China's foreign policy and military strategy in general and its nuclear weapons program in particular. The Chinese have learned from the United States and the Soviet Union that nuclear weapons enhance national prestige and bargaining leverage, deter pressure and threats, and can potentially influence the outcome of crises and diplomatic confrontations. They have also drawn the lesson from the history of U.S.-Soviet arms control negotiations in the 1970s and 1980s that continued arms competition and further qualitative enhancement of nuclear forces go hand-in-hand with arms control agreements. Finally, there is widespread support in China for the view that development of a strong military capability, including substantial nuclear forces, will enhance China's comprehensive national strength, thus enabling Beijing to assume its rightful place as a great power. Beijing is also realizing, and concerned, that India may have learned the same lessons.

Arms Control Transparency
Although China has made public statements about arms control and disarmament, uncertainty about Chinese nuclear weapons capabilities, strategic intentions, and the long-range goals of China's nuclear modernization program is exacerbated by Beijing's lack of transparency in the military sphere. While the PLA became more involved in multilateral meetings and international exchanges during the 1980s,[29] China's neighbors began pressing Beijing to provide more transparency on its national defense policy. Although some progress is being made in this area, China still lags behind some of its Asia-Pacific neighbors in providing military transparency through publication of defense white papers.[30]

As tensions mounted in the Taiwan Strait in late 1995, Beijing issued its first *White Paper on Arms Control and Disarmament*. The twenty-page paper, released during the negotiating endgame of the Comprehensive Test Ban Treaty and while China was still conducting nuclear tests,[31] attempted to defuse concerns about a "China Threat" and accusations that Beijing was supplying WMD or related technologies to some of its neighbors (i.e., Pakistan and Iran). In July 1998, Beijing published its first defense white paper, *China's National Defense,*[32] followed by another in October 2000. Although these did not contain as much detailed information as some countries had hoped, they were a good first effort at providing more transparency.

U.S.-China NSNW Arms Control Discussions
Based on discussions with several analysts, the prospects of involving China in discussions on NSNW arms control in the near future are almost non-existent. As a starting point, China does not even acknowledge that it has non-ballistic missile tactical nuclear weapons. In addition, China is still unwilling to even discuss any reductions of its own ballistic missile force, while it continues to modernize its overall force qualitatively and quantitatively. According to one U.S. State Department arms control official,

> There have been no bilateral negotiations on nuclear arms control between the U.S. and China, although the U.S. has proposed a regular "dialogue" on nuclear arms control issues to parallel the on-going dialogue on proliferation. Chinese officials have, at various times, indicated that the disparity between U.S. and Chinese strategic forces is so great that there is, in practice, nothing to negotiate until U.S. (and Russian) strategic nuclear inventories are significantly reduced. They have also emphasized their view that transparency, monitoring, or verification provisions that might be expected in such negotiations are not in China's interest. They have also reiterated China's own long-standing nuclear disarmament proposal, which calls on states to "abandon" nuclear deterrence, adopt a no-first-use policy, withdraw all nuclear weapons from other countries, halt missile defense research, and conclude a convention on the prohibition and destruction of nuclear weapons.[33]

China's Ballistic Missiles

Current Force

Beijing's ballistic missile force consists overwhelmingly of short- and medium-range missiles that are either dual-capable or armed with conventional warheads,[34] backed up by China's strategic nuclear doctrine that calls for a survivable long-range missile force that can hold a portion of the U.S. population at risk in a retaliatory strike.[35] China has the ability to use these tactical ballistic missiles against its neighbors and U.S. forward-deployed forces in the Asia-Pacific region.[36]

There are three basic trends taking place within China's overall missile force: 1) while the older medium-range ballistic missiles (MRBMs) and ICBMs use liquid propellants, the newer missiles, including short-range ballistic missiles (SRBMs), all use solid propellants; 2) conventional SRBMs are now being assigned to ground force group armies; and 3) China is developing and

deploying more sophisticated cruise missiles with its naval and air forces.

MRBMs

China began deploying its first MRBM, the DF-2/CSS-1 (range 1,250 km) in 1966, but all of these missiles were retired in 1989.[37] Based on their deployment location, they were most likely targeted against Japan and U.S. facilities in Japan. China began fielding its second generation MRBM, the DF-3/CSS-2 (range 2,800 km) in 1971.[38] The DF-3/CSS-2 is probably intended for relatively large population targets in central and eastern Russia.[39]

After producing land-based MRBMs, China sought diversity and reliability by developing and fielding additional new systems in the mid-1980s. In 1985, China began fielding a mobile MRBM, the DF-21/CSS-5 (range 1,800 km). China is also analyzing a range of sophisticated missile defense countermeasures, including saturation, maneuvering reentry vehicles, shaping, stealth, decoys, on-board jammers, multi-axis attacks, and depressed trajectories to provide greater survivability for its MRBM force.[40] The U.S. intelligence community estimates that the PRC has 40 DF-3 and 35 to 50 DF-21 MRBMs, but all of the DF-3s are expected to be phased out by 2002.[41]

SRBMs

There have been various estimates about the size of China's current and future SRBM force opposite Taiwan. A 1999 National Intelligence Council (NIC) report emphasized that China is significantly improving its theater missile capabilities and is increasing the size of its SRBM force deployed opposite Taiwan.[42] The current trend indicates an increase of about fifty missiles per year,[43] building on a base force of some 30 to 50 DF-15/M-9/CSS-6 (500 km) and DF-11/M-11/CSS-7 (280 km) SRBMs in 1995.[44] The primary factors that will influence the eventual size and composition of this force include the political situation (domestic, regional, and international), doctrinal considerations, strategic and tactical requirements, technology developments, production capacity, and the PLA's organizational structure. Any or all of these factors could cause

adjustments up or down in the size and deployment rate of the force over the next ten to fifteen years.[45]

Non-Ballistic Missile Tactical Nuclear Weapons

The most important question in this paper is whether or not China has any non-ballistic missile tactical nuclear weapons. The answer is inconclusive, at least in open source material. Since the Chinese do not acknowledge having TNW and have not declared how many total nuclear weapons they have, Western analysts have had to speculate as to the number of non-ballistic missile tactical nuclear weapons in China's arsenal.

Speculation that China has tactical nuclear weapons has focused on PLA exercise scenarios that were conducted in a simulated tactical nuclear weapon environment and on the types of nuclear tests China has conducted. Some of the most notable exercises, including command post exercises, took place during the 1980s north of Beijing along the most likely Soviet invasion routes. Gurtov and Hwang have written that these exercises were conducted by the group armies, naval fleets, and the General Staff Department's Chemical Defense Department.[46]

According to Garrett and Glaser, Chinese newspaper articles in 1979 and 1982 discussed the use of Chinese tactical nuclear weapons against a Soviet attack.[47] A 1979 *Liberation Army Daily* article analyzed the battlefield utility of TNW and suggested that the PLA could use TNW without triggering a massive Soviet attack on Chinese cities. The author, Xu Baoshan, argued that "international reaction would serve as a greater constraint on escalation from TNW to strategic weapons than from conventional weapons to TNW," but he noted that PLA planning had been based on the opposite assumption. Xu also noted, "given the current situation, the PLA should make emotional as well as material preparation for Soviet use of TNW in the initial stages of a future war." In June 1982, the PLA held its first publicly acknowledged maneuvers involving the use of TNW. In retaliating against Soviet first-use of TNW, a *Ningxia Daily* article said, "Our troops' nuclear strike capability zeroed in on the targets, took the enemy by surprise and dealt his

artillery positions and reserve forces a crushing blow. The exercise was characterized as implementing our army's new task in organizing training under modern conditions." The article did not specify the exact types of TNW used.

The most often quoted source of data on China's TNW is *Nuclear Weapons Databook, Volume V: British, French, and Chinese Nuclear Weapons* written in 1994 by Robert S. Norris, Andrew S. Burrows, and Richard W. Fieldhouse.[48] Almost every article since 1994 that mentions the number and types of China's TNW can be traced back to the information in this book. Based on their calculations, China had at that time "approximately 700 warheads, including about 300 deployed with bomber and missile forces and another 150 for tactical weapon systems, including artillery shells and atomic demolition munitions." They based their estimate partly on the fact that China had conducted several nuclear tests with yields below 20 kilotons and conducted the military exercises noted above in which Beijing reportedly simulated the use of tactical nuclear weapons. In addition, some of the nuclear devices had been air dropped by H-6 bombers and A-5 ground attack aircraft.[49] Although China has used its H-6 bombers during nuclear testing and has devoted some effort to developing a nuclear bomber capability, its bombers are few in number, aged, and highly vulnerable to air defenses.[50]

The authors cite a 1984 Defense Intelligence Agency handbook on the PLA which claimed that "China may be considering the feasibility of supplementing its strategic nuclear arsenal with tactical nuclear weapons."[51] China appears to have embarked on the development of distinctly tactical nuclear weapon systems, such as short-range missiles and artillery, but the evidence is very sketchy and it is impossible to pinpoint the types or numbers. Several weapon systems, such as SRBMs and attack aircraft with nuclear bombs, can be used in tactical nuclear roles if China so chooses. Even so, other authors have stated that there is no firm evidence that China has deployed non-ballistic missile tactical nuclear weapons today.[52]

Although the *Nuclear Weapons Databook* remains the most quoted source on China's TNW, one of the authors, Robert S. Norris, provided the following assessment update in November 2000,

> Information about China's tactical nuclear weapons is limited and contradictory, and *there is no official evidence of their existence*. China's interest in tactical weapons may have been spurred by worsening relations with the Soviet Union in the 1960s and 1970s. Several low-yield nuclear tests in the late 1970s—and a large military exercise in June 1982 simulating the use of tactical nuclear weapons—suggests that they may have been developed.[53]

Command and Control

One of the key issues that has not been addressed in open source material for China's TNW is command and control. While it is common knowledge that the Second Artillery Corps' nuclear weapons come directly under the control of the Chinese Communist Party Central Committee's Military Commission (CMC),[54] there is little or no open source material on the command and control aspects of China's non-ballistic missile TNW (i.e. artillery and air dropped weapons). If China does in fact have tactical nuclear weapons assigned to its ground and air forces, then these weapons and the units that employ them would most likely be controlled directly by the CMC. Furthermore, these weapons would most likely be housed in special facilities under tight security near the units, and there would be more indications that the PLA has conducted simulated training with them since the early 1980s. This is not to say that this is not the case, but there has been no open source reporting on this type of activity.

Cruise Missiles

Besides ballistic missiles, the PLA is acquiring stand-off weapons such as antiship cruise missiles (ASCMs), long-range land-attack cruise missiles (LACMs), and air launched cruise missiles (ALCMs) that would be useful in countering potential adversaries operating on naval platforms, from bases in the East

and South China Seas, or from Taiwan.[55] China's LACM program appears to have a relatively high development priority and is being aided by an aggressive effort to acquire foreign cruise missile technology and subsystems, particularly from Russia.[56] The first LACM to enter production probably would be air-launched and could be operational in the next few years. There are no indications that these weapons will carry a nuclear warhead.[57]

Theater Missile Defense

At the same time China has continued to modernize its SRBM and MRBM force over the past few years, Beijing has actively tried to persuade Washington, Japan, and Taiwan from deploying ballistic missile defenses that could counter China's missile force. Ambassador Sha Zukang, Director General of the PRC's Department of Arms Control & Disarmament in the Ministry of Foreign Affairs, has repeatedly noted, "Theater missile defense (TMD) will have negative impacts on regional strategic stability. If a country, in addition to its offensive power, seeks to develop advanced TMD in an attempt to attain absolute security and unilateral strategic advantage for itself, other countries will be forced to develop more advanced offensive missiles."[58]

China has objected most vigorously against the deployment of TMD in Taiwan. From Beijing's perspective, the transfer of any TMD systems to Taiwan is objectionable for six major reasons:[59]

- TMD transfers would be a harmful intrusion on internal Chinese affairs and as a violation of the three Joint Communiqués governing U.S.-Chinese relations;[60]
- TMD transfers to Taiwan would be steps toward the re-establishment of a U.S. military alliance with Taiwan;
- TMD transfers to Taiwan could lead to a joint Northeast Asia missile defense network including the United States, Japan, and South Korea;
- TMD transfers would complicate China's military options and reduce the military effectiveness of China's missile forces;
- TMD transfers would encourage those who seek independence within Taiwan; and

- TMD transfers of technology to Taiwan would help Taipei develop offensive ballistic missile programs of its own.

In late 2000, a report co-sponsored by the Council on Foreign Relations, National Defense University, and the Institute for Defense Analyses, entitled *China, Nuclear Weapons, and Arms Control: A Preliminary Assessment*, concluded that China will continue to modernize its ballistic missile force for the foreseeable future, but the ultimate shape of the force remains an open question.[61] While the report focused primarily on China's strategic missile force, especially in terms of its relationship to U.S. national missile defense, the same conclusions can logically be applied to the PRC's SRBMs and MRBMs in relation to the U.S. theater missile defense program.

PLA Second Artillery Corps

The largest and most important leg of China's nuclear triad is the Second Artillery Corps (strategic rocket forces). The other legs include one nuclear-powered ballistic missile submarine, a Xia-class SSBN, and an undetermined number of H-6 (Tu-16) medium-range bombers with "little or no intercontinental capability."[62] Unlike the situation for the PLA's conventional ground, naval, and air forces, there is very little substantive information about the organizational structure of the Second Artillery Corps, which was established in July 1966 and placed under the direct control of the Central Military Committee. Today, the Second Artillery Corps, with an estimated 90,000 personnel, consists of headquarters elements,[63] six division-level launch bases, an engineering design academy, four research institutes, two command academies, and possibly an early warning unit.[64] As the key operational strike units, brigades are likely only assigned one type of missile to facilitate command and logistics.

According to Mark Stokes, China's six missile bases have at least thirteen brigades, which are usually structured by the type of missiles.[65] The PLA's theater missiles will be deployed in at least seven of the brigades. In addition, the PLA is now

beginning to replace some of its conventional artillery pieces with M-11 conventional SRBMs within the two ground force group armies in the Nanjing Military Region opposite Taiwan.[66] These missiles will belong to the military region commander, not to the Second Artillery.

A close review of the PLA's organizational structure for the Second Artillery Corps provides valuable clues to the future structure of China's ballistic missile force. According to a 1997 Department of Defense report, "China probably will have the industrial capacity, though not necessarily the intent, to produce a large number, perhaps as many as a thousand, new missiles within the next decade."[67] This report did not clarify the types of missiles. However, if China were to increase the number of missiles as suggested in this report and by others,[68] the Second Artillery would have to increase the number of bases, increase the number of brigades per base, increase the number of battalions per brigade, and/or increase the number of reserve missiles.

Possible Employment Scenarios

Theoretically, the PRC could become involved in conflicts with any of its neighbors in the future, including Russia,[69] India, Japan, and Korea, as well as with Taiwan. Depending upon the situation, the United States could become involved. This section will deal with only two of these possible scenarios – Taiwan and India.

Taiwan

Admiral Dennis Blair, Commander of U.S. forces in the Pacific, pointed out during a visit to Hong Kong in July 2000 that the current Asian flashpoints involve a series of distinct regional disputes, including the Taiwan Strait.[70] Analysts throughout the region surmise that the most likely scenario whereby the United States could be engaged in a nuclear exchange with China is over Taiwan. Beijing's ultimate goal in intimidating Taiwan through military means is to achieve Taiwan's reunification with the mainland[71] The immediate task, however, has been to keep

Taiwan from moving further along the path toward independence and to force Taipei to accept the "one-China" principle.

The PLA's acquisition of M-9/11 SRBMs over the past decade, coupled with repeated statements that "China will not commit itself not to resort to force," have emphasized Beijing's willingness to try to intimidate Taiwan.[72] While China has had MRBMs and ICBMs deployed since the early 1980s, the equanimity with which the United States and U.S. friends and allies in Asia viewed Beijing's missile capabilities and belligerence toward Taiwan changed in 1995 and 1996, when the PLA launched ten SRBMs to impact points near Taiwan in a provocative attempt to influence the democratic presidential elections there. The possibility of a nuclear exchange was raised in July 1995, when a Hong Kong newspaper reported, "According to a military source on the mainland, two military exercises within a month conducted by the PLA were designed to make preparations for using small tactical nuclear weapons in actual battles at sea, as well as to suppress the appeal for Taiwan independence."[73] These actions by Beijing have directly attributed to Taiwan's desire to acquire a TMD capability.

Stokes states that the PLA's missile attack strategy would include conventional SRBMs and LACMs against critical facilities, such as key airfields and command, control, communication, computer, and intelligence (C4I) nodes, and naval facilities.[74] PLA writings indicate a requirement for three raids, including about 400 theater missiles (a mix of SRBMs, possibly MRBMs, and/or LACMs) in the opening stages of a conflict. Following each launch, the launchers would be moved to a different location. The remaining theater missiles would be held in reserve. This targeting strategy would greatly complicate Taiwan's ability to conduct military operations. The Pentagon concludes that China could, however, encounter problems coordinating missile firings with other concurrent military operations, such as air and maritime engagements.[75]

U.S. Involvement

During the early 1990s, Chinese analysts were split about possible U.S. involvement in a conflict with Taiwan, based on

the "Somalia analogy," whereby they postulated the United States did not have the resolve to fight a war that risked losing American lives.[76] However, following U.S. intervention in Kosovo, the PLA today assumes the U.S. military will definitely be involved in any future conflict with Taiwan.[77]

During a speech in October 2000, General Zhang Wannian, vice-chairman of the CMC, reportedly stated,

> During the period of the 10th Five-Year Plan [2001-2005], it is certain that war will break out in the Taiwan Strait. To ensure victory in the war, the PLA will strike the first blow. It will first paralyse the power installations and the combat ability of Taiwan's fighter jets. The PLA possesses some weapons that can kill and wound soldiers who are using weapons or hiding in buildings without destroying the weapons, equipment or buildings. This will minimize the damage on Taiwan.[78]

The newspaper report further stated, "Zhang did not reveal whether the weapons used to paralyse the power installation were similar to graphite bombs used by the U.S. troops to attack Yugoslavia, or neutron bombs that can harm people without destroying buildings. At present, the mainland possesses these two kinds of weapons." In reference to the 1999 Cox Report's assertion that China stole plans for the neutron bomb from the United States, Zhao Qizheng, Director of the State Council's Information Office, said, "China has mastered in succession the neutron bomb design technology and the nuclear weapon miniaturization technology as early as in 1970s and 1980s."[79] While the Cox report and Zhao's statement indicate China has developed a neutron bomb,[80] there are no open source reports about the actual deployment of this type of weapon.

Although China's overall military equipment is still inferior to that of the United States, analysts in both countries have written about China's growing asymmetrical warfare capabilities. Specifically, China's modernizing navy, with its Russian-built Kilo-class submarines and Sovremenny-class destroyers armed

with nuclear-capable SS-N-22 supersonic cruise missiles,[81] and the increasing number of SRBMs, have strengthened Beijing's area denial capability versus the U.S. Navy. Unlike the situation during the Gulf War and the Kosovo War where the United States had bases from which to prosecute the war, the United States military is hampered in the Pacific by what the U.S. Pacific Command calls "the tyranny of distance" and the lack of a significant number of permanent and deployment bases.

As Peter Rodman of the Nixon Center states, "China does not have to defeat the United States in a war in order to seize Taiwan. It merely must prevent the United States from intervening. China's new weapons alone are enough to increase the inhibitions of an American president who contemplates getting involved in a Taiwan crisis."[82] The issue of China's area denial or anti-access strategy has become a focal point for analyzing the current military situation in the region.

While most scenarios involve a conventional weapons conflict across the Taiwan Strait, there is always the possibility of Beijing escalating to the use of nuclear weapons. One of the most likely scenarios that could lead China to use its TNW is if an attack on Taiwan was failing to the point that the situation threatened the communist regime itself. Over the years, the Party's leaders have shown their concern about spontaneous demonstrations against them, including the 1989 Tiananmen massacre, 1996 demonstrations against Japan regarding the Diaoyu Islands,[83] the crackdown on the Falun Gong that began in early 1999, and demonstrations against the U.S. Embassy in Beijing following the inadvertent bombing of the Chinese Embassy in Belgrade in May 1999.[84]

Since two U.S. aircraft carrier battle groups were dispatched to the Pacific near Taiwan in 1996, one of the most discussed scenarios in Western writings is a possible Chinese nuclear attack on aircraft carriers assisting Taiwan. This type of attack could come in the opening stage of a conflict to keep the U.S. from coming to Taiwan's aid, or after the U.S. had already become engaged in active support for Taiwan. The likelihood of

this type of attack would depend on many variables, including the overall political atmosphere at the time.

India

In New Delhi, where perception often seems to become reality, there is little question about whether China has tactical nuclear weapons. On May 11 and 13, 1998, India's new coalition government detonated several nuclear devices.[85] One week before the tests, George Fernandes, India's outspoken Defense Minister, stated that China was "encircling" India, was India's "potential threat number one," and "China's nuclear weapons were stockpiled in Tibet right along India's borders." Some newspapers reported this statement as "China has deployed missiles with nuclear warheads in Tibet targeting India." Former Indian Foreign Secretary J.N. Dixit, in a 5 May 1998 op-ed article in *The Hindu*, even stated, "We have been generally aware of the 'tactical' missiles in Tibet."[86]

Pravin K Sawhney, an Indian security analyst, sums up India's views in a 1 August 2000 *Jane's Intelligence Review* article, where he states,[87]

> Within China's nuclear arsenal of nearly 500 warheads, 200 are strategic and the rest tactical.[88] These nuclear weapons are deployed at about twenty locations, including the Tibet Autonomous Region.[89] The PLA has conducted military exercises simulating the use of tactical weapons and has recently claimed to have mastered the technology to produce neutron bombs. The threat of China incorporating tactical nuclear weapons as part of its warfighting doctrine is greater than ever. Indian planners assume that the PLA could employ low-yield tactical nuclear weapons without fear of collateral damage in the disputed Himalayan ranges. Moreover, China's no-first-use policy does not clarify whether this doctrine applies to disputed territories that China considers its own.

Conclusion

The evidence available in open source material is not conclusive that China has tactical nuclear weapons beyond those for delivery by ballistic missiles. This does not mean, however, that countries like India do not believe China has TNW. Most of the open source references can be traced to as single source, the 1994 *Nuclear Weapons Databook, Volume V: British, French, and Chinese Nuclear Weapons.* Although China conducted nuclear tests consistent with low yields for tactical nuclear weapons and the PLA conducted simulated exercises under TNW conditions during the early 1980s, there is a lack of information about the actual deployment of these weapons in the PLA. Deployment with the ground, naval, and air forces would entail special command and control structures and weapons handling facilities, which have not been reported in open source material – but this does not mean they do not exist.

The PRC is faced with various dilemmas concerning its nuclear doctrine. While Beijing is on a path toward greater involvement in international arms control and disarmament, China is being confronted with new challenges on its borders, including India's nuclear capabilities, increasing tensions with Taiwan that could lead to a war with the United States, and the presence of American theater and national missile defense systems. These challenges have led to a vigorous debate within China on the issue of their no-first-use doctrine.[90]

During the 1980s, the PLA conducted exercises focusing on the use of tactical nuclear weapons during a Soviet armored thrust toward Beijing. Although that threat no longer exists, China has been building up its SRBM and MRBM capability with conventional warheads geared toward a Taiwan conflict scenario involving the United States. Whether or not Beijing would turn to nuclear weapons in a Taiwan conflict is strictly scenario dependent. The PLA is also in the process of shifting its MRBM and ICBM force from fixed-site, liquid-fueled missiles to mobile, solid-fuel missiles to enhance their survivability. The PRC is also adding flexibility by developing the next generation of cruise missiles that could utilize nuclear warheads. These

changes have led to discussions about changing from a minimum deterrence to a limited deterrence posture.

Regardless of the specific doctrine Beijing chooses to ascribe to, the United States is now confronting a China with an increasing nuclear capability and an unwillingness to discuss arms control limitations for its own forces. Recent transcripts about the Chinese decision-making process that led to the PLA crushing peaceful demonstrators in Beijing in June 1984 show that regime maintenance is a fundamental principle for China's leaders when faced with the possibility of losing their grip on power.[91] Therefore, it is not inconceivable that China's leaders would resort to the use of nuclear weapons if the situation warranted.

Endnotes

[1] Robert S. Norris, Andrew S. Burrows, Richard W. Fieldhouse, *Nuclear Weapons Databook, Volume V: British, French, and Chinese Nuclear Weapons* (New York: Westview Press, 1994), 324.
[2] This theme is emphasized in Robert Manning, Ronald Montaperto, and Brad Roberts, *China, Nuclear Weapons, and Arms Control: A Preliminary Assessment*, Chairmen's Report on a roundtable jointly sponsored by the Council on Foreign Relations, the National Defense University, and the Institute for Defense Analysis (New York: Council on Foreign Relations, 2000).
[3] The author would like to thank Brad Roberts, Iain Johnston, Bates Gill, James Mulvenon, Evan Medeiros, Paul Godwin, Bonnie Glaser, Banning Garrett, Dunbar Lockwood, Peter Almquist, and Stan Norris for their assistance and permission to use lengthy portions of material they have previously published on this complicated subject.
[4] *Zhongguo Junshi Baike Quanshu* [Chinese Military Encyclopedia], Beijing, Academy of Military Science Publishers, July 1997, Vol 6-1107. Besides providing the definition of TNW, the encyclopedia discusses the history of U.S. and Soviet TNW systems. Unlike the article on strategic nuclear weapons which acknowledges that China has them, there is no mention of the PLA having TNW or of China developing these weapons.
[5] There is a lack of consistency in Western reporting, including testimony on Capitol Hill, on whether some of China's missiles are medium-range or intermediate-range. This paper refers only to medium-range ballistic missiles. See Shirley A. Kan, "China: Ballistic

and Cruise Missiles," Congressional Research Service Report for Congress, 97-391F, Updated 28 September 1998. The U.S. classification of ballistic missiles states SRBMs have a range of 70-1000 km (43-620 miles), MRBMs 1001-3000 km (621-1860 miles), IRBMs 3001-5000 km (1861-3100 mi), and ICBMs 5001+ km (3101+ miles).

[6] William Manchester, *American Caesar: Douglas MacArthur 1880-1964* (New York: Laurel Books, 1982). Sheila Tefft, "China Tests Nuclear Device – As Well As World's Resolve," *The Christian Science Monitor*, 16 May 1995.

[7] Jim Mann, "U.S. Considered '64 Bombing to Keep China Nuclear-Free," *Los Angeles Times*, 27 September 1998. According to Major General Wu Jianguo, former associate professor and dean of the PLA's Antichemical Warfare Academy, President Eisenhower ordered the Pentagon to formulate a nuclear program aimed at China, and Soviet President Brezhnev considered initiating a nuclear attack on China during the 1969 border conflict to attempt to ruin China's nuclear facilities. See Wu Jianguo, "Nuclear Shadows on High-Tech Warfare," in Michael Pillsbury, ed., *Chinese Views on Future Warfare*, National Defense University Press, September 1998, 142-143. According to Joseph C. Anselmo, in 1996 the head of U.S. Strategic Command [Air Force General Eugene Habiger] said the U.S. had threatened to use nuclear weapons on five occasions, including 1969 when the Russians asked the United States if it would join them in an attack against the Chinese. Others cited President Eisenhower's threat to use tactical nuclear weapons in 1953, which was apparently aimed at getting China and North Korea to agree to a Korean War cease-fire, and 1954 and 1958 to deter communist China from invading Quemoy and Matsu, offshore islands held by Chinese nationalist forces. See Anselmo, "U.S. General: Nuclear Deterrence Offsets Need for Missile Defense," *Aviation Week and Space Technology*, 2 September 1996, Vol. 145, No. 10; Pg. 68; James Pringle writes that in 1969, on Damanski island (Zhenbao in Chinese) in the Ussuri River, there was a fight between Chinese and Russian troops that started with fists, graduated to small arms, escalated to tank and artillery fire, and might have ended with a nuclear war had not Richard Nixon warned Leonid Brezhnev that the United States would not remain indifferent to a Soviet attack on China. Next to the Cuban missile crisis, many observers believe, this was the moment the world came closest to nuclear war. Brezhnev believed Chinese armies were poised to invade from Manchuria. Mao Tse-tung, expecting a Soviet nuclear strike, ordered the Chinese population in Harbin, capital of China's northernmost province of Heilongjiang, and

in Peking itself to dig deep tunnels and store grain. Pringle, "Closed Minds Prevail on Open Frontier," *The Times*, 6 July 1996.
[8] In this context, missiles include complete systems, technology, or components.
[9] Manning, Montaperto, and Roberts, *China, Nuclear Weapons, and Arms Control: A Preliminary Assessment*, 17-18.
[10] Bates Gill and James Mulvenon, "The Chinese Strategic Rocket Forces: Transition to a Credible Deterrence," *China and Weapons of Mass Destruction: Implications for the United States*, National Intelligence Council, Conference Report, 5 November 1999.
[11] Alastair Iain Johnston, "Prospects for Chinese Nuclear Force Modernization: Limited Deterrence Versus Multilateral Arms Control," *China Quarterly,* June 1996: 552.
[12] John Wilson Lewis and Hua Di, "China's Ballistic Missile Programs: Technologies, Strategies, Goals," *International Security*, Fall 1992, 6-7.
[13] China's no-first-use pledge: "China undertakes not to be the first to use nuclear weapons at any time or under any circumstances." China's National Statement On Security Assurances, 5 April 1995.
[14] Some authors call this "minimal deterrent."
[15] China's negative security assurances: "China undertakes not to use or threaten to use nuclear weapons against non-nuclear-weapon States or nuclear-weapon-free zones at any time or under any circumstances. This commitment naturally applies to non-nuclear-weapon States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons or non-nuclear-weapon States that have undertaken any comparable internationally binding commitments not to manufacture or acquire nuclear explosive devices." China's National Statement On Security Assurances, 5 April 1995.
[16] "China's National Defense in 2000," *Xinhua*, 16 October 2000.
[17] *China's National Defense*, (Beijing: Information Office of the State Council of the People's Republic of China, July 1998).
[18] Lewis and Xue, *China's Strategic Seapower*, 232-33.
[19] Hua Hongxun, "China's Strategic Missile Programs: Limited Aims, Not 'Limited Deterrence,'" *Nonproliferation Review*, Winter 1998,:60-68.
[20] Alastair Iain Johnston, "China's New 'Old Thinking': The Concept of Limited Deterrence," *International Security*, Winter 1995/96, 26-29.
[21] *Ibid*.
[22] Paul H.B. Godwin, "From Continent to Periphery: PLA Doctrine, Strategy, and Capabilities Toward 2000," in David S. Shambaugh and Richard H. Yang, eds. *China's Military in Transition* (Oxford: Clarendon Press, 1997), 284-312.

[23] Mel Gurtov and Byong-Moo Hwang, *China's Security: The New Roles of the Military* (Boulder: Lynne Rienner Publishers, 1998), 128-129.
[24] Correspondence with Brad Roberts, December 2000.
[25] For an analysis of Chinese views of the U.S.-Soviet strategic arms negotiations in the early 1970s, see Michael Pillsbury, *Salt on the Dragon: Chinese Views of the Soviet-American Strategic Balance*, Rand study P-5374 (Santa Monica: Rand Corporation, February 1975).
[26] Banning N. Garrett and Bonnie S. Glaser, "Chinese Perspectives on Nuclear Arms Control," *International Security*, Winter 1995/96, 43-78. The Chinese have waffled since 1981 in their official position on terms for Chinese participation in strategic nuclear arms reductions talks with the other four declared nuclear powers. See Alastair Iain Johnston, "Learning Versus Adaptation: Analyzing Change in Chinese Arms Control Policy," paper prepared for American Political Science Association Annual Conference, New York, September 1994, pp. 42-43 and footnote 33 on p. 43.
[27] Zhongguo Xinwen She, January 30, 1992, cited in "China-U.S.-CIS: Beijing Defines Nuclear Disarmament Conditions," FBIS-Trends, FB TM 92-005, February 5, 1992, p. 46. In June 1994, Australian Deputy Prime Minister Brian Howe during a visit to Beijing said he was told by Chinese officials that the ball was in the court of the other nuclear powers to reduce their stocks to achieve "a situation of parity." AFP June 13, 1994, FBIS-CHI-94-114, June 14, 1994, p. 15.
[28] The Vienna-based Zangger committee, founded in 1971 and consisting of thirty-three nuclear or nuclear-related export countries, is the first international organization formed to control nuclear technology. The committee's goal is to strengthen consultation and cooperation on issues of nuclear nonproliferation and export control under the principles of the NPT.
[29] See Kenneth Allen and Eric McVadon, *China's Foreign Military Relations*, The Henry L. Stimson Center, October 1999, p. 25-25, for a discussion of the PLA's role in arms control.
[30] Japan has published its *Defense of Japan* white paper annually for over two decades, South Korea began publishing an annual *Defense White Paper* in 1988, Taiwan has published its *National Defense Report* every two years since 1992, and Mongolia issued its first *Defense White Paper* in 1997. Other countries in Southeast Asia have also published their own white papers.
[31] China conducted 45 nuclear tests between October 1964 and July 1996. Information provided by Evan Medeiros at the Monterey Institute of International Studies.

[32] *China's National Defense*, 32-34. The 1998 defense white paper was not Beijing's first attempt at military transparency. In 1985, the PLA began publishing the *Shijie Junshi Nianjian* [World Military Yearbook], which provided an overview of militaries around the world. The section on the PLA was only seventeen pages and provided almost no useful information. Each subsequent yearbook has provided greater amounts of detail on matters like organization and training. The Academy of Military Science has also published journals with numerous papers on military trends and how they affect the PLA.
[33] Interview in January 2001.
[34] Manning, Montaperto, and Roberts, *China, Nuclear Weapons, and Arms Control: A Preliminary Assessment*, 2. Although the monograph states China has intermediate-range ballistic missiles, this paper consistently uses medium-range ballistic missiles.
[35] "Statement for the Record to the Senate Subcommittee on International Security, Proliferation, and Federal Services on The Ballistic Missile Threat to the United States," Robert D Walpole, National Intelligence Officer for Strategic and Nuclear Programs, 9 February 2000.
[36] The PLA has additional nuclear warheads in storage. China is not currently believed to be producing fissile material for nuclear weapons, but it has a stockpile of fissile material sufficient to increase or improve its weapon inventory. Office of the Secretary of Defense, *Proliferation: Threat and Response 1997*, 25 November 1997.
[37] *Nuclear Weapons Databook, Volume V: British, French, and Chinese Nuclear Weapons*, 324-358.
[38] Shirley A. Kan, "China: Ballistic and Cruise Missiles," Congressional Research Service Report for Congress, 97-391F, Updated 28 September 1998. Although some media reports state that China has IRBMs, this is not the case. China only has SRBMs, MRBMs, and ICBMs.
[39] *Nuclear Weapons Databook, Volume V: British, French, and Chinese Nuclear Weapons*, 324-358. China shocked the world in 1988 by exporting 30-35 DF-3/CSS-2 missiles to Saudi Arabia in 1988. For the origins of the DF-3 sale see Lu Ning, *The Dynamics of Foreign-Policy Decision-making in China*, (Boulder, CO: Westview Press, 1997,) 113-117; and John W. Lewis, Hua Di, and Xue Litai, "Beijing's Defense Establishment: Solving the Arms-Export Enigma," *International Security*, Spring 1991.
[40] Mark Stokes, "Weapons of Precise Destruction: PLA Space and Theater Missile Development," *China and Weapons of Mass Destruction: Implications for the United States*, Conference Report, 5 November 1999, 203-205.

[41] "Ballistic Missile Threat Evolves," *International Defense Review*, 1 October 2000.
[42] National Intelligence Council, "Foreign Missile Developments and the Ballistic Missile Threat to the United States through 2015," September 1999.
[43] "U.S. Calls in China's Ambassador over Taiwan," *Agence France Presse*, 16 March 2000. A full copy of his speech given at the Carnegie Endowment for International Peace can be found at http://www.pacom.mil/ref/2000/sst/CARNEG.htm.
[44] Tony Walker and Stephen Fidler, "China builds up missile threat: Deployment against Taiwan poses policy headache as Clinton prepares to meet premier Zhu," *Financial Times*, 10 February 1999. Bill Gertz, "China strengthens position near Taiwan," *Washington Times*, 26 February 1999. These articles cited unnamed U.S. intelligence sources who said Beijing plans to increase the number of SRBMs opposite Taiwan to 650 missiles by 2005. See "China's Strategic Arsenal," *Jane's Intelligence Review*, 1 December 1999, for the missile designators and ranges.
[45] Prepared Testimony of Vice Admiral Thomas R. Wilson Director, Defense Intelligence Agency Before the Senate Intelligence Committee, *Federal News Service*, 2 February 2000. Vice Admiral Wilson told the Senate Intelligence Committee that by 2015, Chinese forces will be much better equipped, possessing more than a thousand theater-range missiles. This figure most likely includes MRBMs as well as SRBMs.
[46] Mel Gurtov and Byong-Moo Hwang, *China's Security: The New Roles of the Military* (Boulder: Lynne Rienner Publishers, 1998), 129.
[47] Banning N. Garrett and Bonnie S. Glaser, *War and Peace: The Views from Moscow and Beijing*, Policy Papers in International Affairs Number 20, Institute of International Studies, University of California, Berkeley, 1984, 124-126. Xu Baoshan, "We Must Be Prepared to Fight Nuclear War in the First Stages of any Future War," *Jiefangjun Bao*, 16 September 1979; and "The Might of Helan Shan Shakes," *Ningxia Ribao*, 29 June 1982, FBIS-China, 3 August 1982. The *Ningxia Daily* reported the exercise and published a photograph of a mushroom cloud with the caption, "An 'atomic bomb' exploding deep in the ranks of the 'enemy'." Associated Press, "China Simulates Atomic Blast in War Games Aimed at Soviet," *The New York Times*, 14 July 1982. The NYT article cited Western military sources who said the exercise was held in the remote Ningxia region, 435 miles south of the border of Soviet-allied Mongolia, and involved several hundred thousand men.

[48] *Nuclear Weapons Databook, Volume V: British, French, and Chinese Nuclear Weapons*, 324.
[49] The H-6 is a Chinese copy of the Soviet Tu-16 bomber, and A-5 (aka Q-5) is a Chinese variant of the Soviet Mig-19.
[50] Robert G. Sutter, *Chinese Nuclear Weapons and Arms Control Policies: Implications and Options for the United States*, CRS Report 94-422S, Washington, D.C., Congressional Research Service, March 25, 1994.
[51] *Handbook of the Chinese People's Liberation Army*, Washington, D.C., Defense Intelligence Agency, DDB-2680-32-84, November 1984, 69. DIA's July 1976 *Handbook on the Chinese Armed Forces* (p. 3-15), states there was not confirmed nuclear doctrine and that China did not have tactical nuclear weapons at that time. The U.S. Department of Defense has produced the following reports for Congress since 1997 on Chinese missile capabilities, none of which address tactical nuclear weapons: "Selected Military Capabilities of the People's Republic of China," Report to Congress Pursuant to Section 1305 of the Fiscal Year 1997 National Defense Authorization Act, April 1997; "Report to Congress on Theater Missile Defense Architecture Options in the Asia-Pacific Region," 14 April 1999; and Department of Defense, "Report to Congress Pursuant to the FY99 Appropriations Bill," 1 March 1999. This report addresses Taiwan's ability to defend against current and emerging PLA capabilities. See also Secretary of Defense, "Report on the Current and Future Military Strategy of the People's Republic of China," Report to Congress Pursuant to the FY2000 National Defense Authorization Act, 23 June 2000, in an update of the 1999 report.
[52] Gurtov and Hwang, *China's Security: The New Roles of the Military*, 129.
[53] Robert S. Norris and William M Arkin, "Chinese Nuclear Forces, 2000," *Bulletin of the Atomic Scientists*, 1 November 2000, 78. Whereas the 1994 Databook indicated that all of China's bombers (H-5, H-6, and H-7) and A-5 ground attack aircraft were included as tactical nuclear weapons carriers, the 2000 article states, "Bombers. China's bomber force is antiquated, based on Chinese-produced versions of outdated Soviet aircraft. With retirement of the Hong-5—a redesign of the Soviet Il-28 Beagle medium-range bomber—the main bomber is the Hong-6, based on the 1950s-vintage Soviet Tu-16 Badger medium-range bomber. Under a licensing agreement the Chinese began producing the H-6 in the 1960s. It was used to drop live weapons in two nuclear tests: a fission bomb in May 1965, and a multi-megaton bomb in June 1967. For more than a decade China has been developing

a supersonic fighter-bomber – the Hong-7 (or FB-7) – at the Xian Aircraft Company. The plane is not thought to have a nuclear mission."

[54] *Shijie Junshi Nianjian* [World Military Yearbook], published by PLA Press, Beijing, 1988, 5. The Navy and Air Force also come under the control of the CMC, but their chain-of-command goes through the General Staff Department.

[55] Department of Defense, "Report to Congress Pursuant to the FY99 Appropriations Bill," 1 March 1999.

[56] *Ibid*.

[57] Dennis J. Blasko, "Chinese Military Modernization: An Assessment," *News World Communications*, 1 October 1999.

[58.] Ambassador Sha Zukang's speech at The Carnegie Endowment for International Peaces 7th International Non-Proliferation Conference, January 1999.

[59.] Sha Zukang, "U.S. Missile Defence Plans: China's View," *Disarmament Diplomacy,* Issue No 43. Luo Jie and Ye Bian, "U.S. Missile Defense Will Bring No End of Trouble for the Future: Sha Zukang on Topics Including International Disarmament Situation and TMD," *Beijing Shijie Zhishi,* No 13, 1 July 1999, p. 8-9, (*FTS19990717000027*, 19 July 1999).

[60.] The three joint communiqués are: the February 28, 1972 Joint Communiqué (commonly known as the Shanghai Communiqué) which established liaison offices in the United States and China; the January 1, 1979 "Joint Communiqué on the Establishment of Diplomatic Relations between the United States and the People's Republic of China"; and the August 17, 1982 "United States-China Joint Communiqué on United States Arms Sales to Taiwan." On April 10, 1979, the U.S. Congress passed the Taiwan Relations Act (Public Act 96-8).

[61] Manning, Montaperto, and Roberts, *China, Nuclear Weapons, and Arms Control: A Preliminary Assessment*, 2.

[62] *Ibid,* 2. Although the H-6 was used during several nuclear tests, there are no open source indications that the H-6 is a serious part of the PRC's nuclear delivery program today.

[63] There is very little information available about the administrative structure for the Second Artillery Corps. However, prior to 1998, there were four first-level departments: Headquarters, Political, Logistics, and Technical Equipment. The latter was responsible for equipment research and development, maintenance, repair, and procurement. Following the creation of the General Equipment Department in 1998, the Technical Equipment Department changed its name to the Equipment Department (zhuangbeibu). *Shijie Junshi Nianjian* [World Military Yearbook], PLA Press, Beijing, 1987-1999.

[64] Mark Stokes, "Weapons of Precise Destruction: PLA Space and Theater Missile Development," *China and Weapons of Mass Destruction: Implications for the United States*, Conference Report, 5 November 1999, 203-205. Bases are located at Shenyang (80301 Unit); Huangshan (80302 Unit); Kunming (80303 Unit); Luoyang (80304 Unit); Huaihua (80305 Unit); and Xining (80306 Unit). The Second Artillery has one engineering design academy and four research institutes to solve problems associated with operations, TELs, and logistics (First Institute), command automation, targeting, and mapping (Third Institute), and missile and warhead engineering design (Academy of Engineering Design). The Second Artillery's Command College in Wuhan prepares officers for leadership positions within headquarters elements and launch brigades. The Engineering College in Xian educates technicians associated with equipment and technology departments at various headquarters and field units. General Second Artillery organizational information is drawn from numerous sources, to include open and internal (*junnei*) Chinese publications and from discussions while assigned as the assistant air attaché in Beijing, China from 1992-1995. Also see *PLA Directory of Personalities*, USDLO Hong Kong, 1996, pp. 48-51; Bill Gertz, "New Chinese Missiles Target All of East Asia," *Washington Times*, 10 Jul 97, p. 1; Hisashi Fujii, "Facts Concerning China's Nuclear Forces," *Gunji Kenkyu*, Nov 95, in FBIS-CHI-96-036; "Guangrong Bang" (Outstanding Units), *Flying Eagle* (*Changying)*, 3 Nov 93; "Guangrong Bang" (Outstanding Units), *Flying Eagle*, May 1992; Lewis and Xue, p. 213footnote; and Nuclear Weapons Databook, Vol. 5, pp. 324-335. Among sources, *Flying Eagle*, one of a handful of Second Artillery-associated publications, is most useful in piecing together the organizational structure. Second Artillery organizational issues are also discussed in author's *Strategic Modernization* monograph.

[65] Stokes, "Weapons of Precise Destruction: PLA Space and Theater Missile Development," 215-217.

[66] Bill Gertz, "China Targets Taiwan with 2nd Missile Base; Can Now Hit All Military Posts on the Island, Pentagon Says," *The Washington Times*, 8 December 1999. China began deploying SRBMs at two new bases, Yongan and Xianyou, opposite Taiwan in 1999. Media reports have not clarified whether these bases belong to a group army or to the Second Artillery Corps. Taiwan sources familiar with the PLA believe that the 300-kilometer DF-11 has already been fielded by at least two PLA ground force group armies. In addition, a 29 March 1999 edition of *Jiefangjun Bao* discusses the conversion of an unidentified Nanjing Military Region artillery unit to an SRBM brigade. The conversion began in early 1997.

[67] U.S. Department of Defense, "Selected Military Capabilities of the People's Republic of China," report to Congress pursuant to Section 1305 of the FY97 National Defense Authorization Act, April 1997. Found in Bates Gill and James Mulvenon, "The Chinese Strategic Rocket Forces: Transition to a Credible Deterrence," *China and Weapons of Mass Destruction: Implications for the United States*, Conference Report, 5 November 1999, 46-48.
[68] In an interview in July 2000, one Taiwan military official indicated China could have as many as 120 ICBMs by 2010.
[69] One of the most discussed scenarios that could lead to a future conflict with Russia is China's expansion into the Russian Far East. Zhores A. Medvedev has written about the decreasing Russian population and the increasing Chinese population in the Russian Far East and concern that "the district does not become a Chinese republic." He states that since 1990 approximately one million Russians, about five per cent of the population, have left the Far East. While they have been leaving, traders, workers and farmers from the PRC have entered the southern districts of Russia's eastern regions – both legally and illegally. No one knows exactly how many Chinese live in Russia. Spring 1994 estimates presented to the Duma varied from 300,000 to two million people. If the trend continues, the Chinese could form the majority of the population in the regions bordering China (Chitinskaya, Amurskaya, Khabarovskaya and the Maritime province) within twenty years. Zhores A. Medvedev, "Sino-Russian Boarders: Perspective," *The Times Higher Education Supplement*, 13 January 1995.
[70] Robert Keatley, "Navigating a Course of Peace," *South China Morning Post*, 24 July 2000.
[71] Information on China-Taiwan relations is taken in part from "Theater Missile Defenses in the Asia-Pacific Region," The Henry L. Stimson Center Working Group Report, June 2000. Ken Allen was the lead author for this study.
[72] *White Paper on China's National Defense* (Beijing*:* Information Office of the State Council of the People's Republic of China, July 1998).
[73] Ma Tien-lung, "Further Military Exercise in the East China Sea is Designed to Test Small Tactical Nuclear Weapons," *British Broadcasting Corporation*, 19 August 1995, from *Hong Kong Ping Kuo Jih Pao*, 18 July 1995.
[74] Mark A. Stokes, "China's Strategic Modernization: Implications for the United States," U.S. Army Strategic Studies Institute, September 1999; and Mark A. Stokes, "PLA Strategic Warfighting in the 21st Century: Space and Theater Missile Development," a paper presented

at the Conference on the People's Liberation Army, September 1999. Stokes is currently Country Director for China and Mongolia, Office of the Assistant Secretary of Defense for International Security Affairs, and served as the Assistant Air Attaché in Beijing from 1992-1995.
[75] Department of Defense, "Report to Congress Pursuant to the FY99 Appropriations Bill," 1 March 1999. This report addresses Taiwan's ability to defend against current and emerging PLA capabilities. The report addresses PLA and Taiwan force planning, strategy, and doctrine; and projected PLA and Taiwan capabilities in 2005.
[76] Richard K. Betts and Thomas J. Christensen, "China: Getting the Questions Right," *The National Interest*, Winter 2000/2001.
[77] Richard Halloran, "China a Long Shot in Taiwan Attack; Military Experts Say Beijing Not Ready for Battle," *The Washington Times*, 3 September 1999.
[78] "Chinese Military Commission Official Predicts War with Taiwan within Five Years: The PLA Possesses Neutron Bombs and Graphite Bombs," *British Broadcasting Corporation*, Summary of World Broadcasts, 21 November 2000, *Tung Fang Jih Pao* web site, 19 November 2000.
[79] "China Further Refutes Cox Report," *Xinhua*, 15 July 1999.
[80] William J. Broad, "Spies vs. Sweat: The Debate Over China's Nuclear Advance," *The New York Times*, 7 September 1999.
[81] There are no indications Russia has transferred the nuclear-capable version of the SS-N-22.
[82] Kenneth R. Timmerman, "Q: Has Clinton's China Policy Put U.S. National Security at Risk? Yes: Under Lax Export Controls and Reckless Sharing of Information, Clinton/Gore Have Armed a New Enemy," *Insight on the News*, 6 November 2000.
[83] David Aikman, "China Nationalism Replaces Communism as a Reason to Worry," *The American Spectator*, December 1996. China's Authorities were surprised by the outburst of nationalist feeling expressed in September 1996 by Hong Kong Chinese over the sovereignty of the Diaoyu Islands, which are uninhabited yet claimed by both China and Japan. In mid-October, Chinese cities were told not to permit any further demonstrations in support of the nation's Diaoyu claims. Universities and colleges were also instructed to prohibit anti-Japanese protests. Officials feared an "uncontrollable accident" in circumstances of emotional expression – a euphemism for the possibility that demonstrations might turn into anti-government protests at the weaknesses of China's foreign policy itself.
[84] "Chinese Anger at NATO Bombing Being Channeled by Communist Leadership," *Agence France Presse*, 9 May 1999.

[85] Kenneth W. Allen, "Nuclear Weapons and Sino-Indian Relations," News Advisory, Henry L. Stimson Center, l June 15, 1998.
[86] Fernandes' comments concerning Chinese nuclear missiles "in Tibet" have considerable credibility in India, which considers "historical" Tibet to include the Tibetan Autonomous Region and Qinghai Province (located between Tibet and Xinjiang).
[87] Pravin K Sawhney, "Evolving nuclear environment moulds India's military strategy," *Jane's Intelligence Review*, Vol. 12; No. 8, 1 August 2000.
[88] The article did not cite the source for this information, but it is most likely an extrapolation of the information from the 1994 volume noted above.
[89] On May 11 and 13, 1998, India's new coalition government detonated several nuclear devices. In a letter to President Bill Clinton on May 13, Prime Minister Atal Bihari Vajpayee asserted that India's nuclear tests were justified due to a deterioration in India's security environment. Without naming China specifically, he stated "We have an overt nuclear weapon state on our borders, a state which committed armed aggression against India in 1962." One week before the tests, George Fernandes, India's outspoken Defense Minister stated that China was "encircling" India, was India's "potential threat number one," and "China's nuclear weapons were stockpiled in Tibet right along India's borders." Some newspapers reported this statement as "China has deployed missiles with nuclear warheads in Tibet targeting India." Fernandes' comments concerning Chinese nuclear missiles "in Tibet" have considerable credibility in India, which considers "historical" Tibet to include the Tibetan Autonomous Region and Qinghai Province (located between Tibet and Xinjiang). For example, former Indian Foreign Secretary J.N. Dixit, in a 5 May 1998 op-ed article in *The Hindu*, stated that "we have been generally aware of the 'tactical' missiles in Tibet."
[90] Interview with Chinese military and arms control officials.
[91] Andrew J. Nathan and Perry Link, ed., *Tiananmen Papers: The Chinese Leadership's Decision to Use Force Against Their Own People – In Their Own Words*, Public Affairs, 9 January 2001.