Nuclear Deterrence Over Taiwan

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Since 1950 the US security commitment to Taiwan, which began as an explicit defense guarantee and later evolved into an ambiguous deterrence strategy, has prevented China from “liberating” Taiwan. Immediately after the Korean War broke out in 1950, President Harry Truman sent the 7th fleet to the Taiwan Strait to guard against a military confrontation in that region. From then on, Taiwan has depended upon the US military for its protection. Beginning with its signing in 1954, the US-ROC Mutual Defense Treaty guaranteed Taiwan’s security and survival for the next two decades. During the 1970s and 1980s, the US and China tacitly agreed to put aside the Taiwan issue in order to form a strategic partnership to counter the threat posed by the former Soviet Union. The Taiwan issue resurfaced in 1995 when the US approved President Lee Teng-Hui’s visit to Cornell University, a move that led to China’s aggressive missile tests off the coast of Taiwan the following year. During the March 1996 Taiwan Strait crisis, the US surprised China when President Clinton decided to dispatch two carrier battle groups to the Taiwan Strait area, signaling US resolve to ensure a peaceful resolution of the Taiwan issue. Then, immediately after the crisis, the US and Japan signed the Japan-U.S. Joint Declaration on Security, which the Chinese government interpreted as an attempt by the US to contain China. China was further shocked to learn from the release of the Nuclear Posture Review, a secret report presented in December 2001 by the US Defense Department to Congress, that the US might use nuclear weapons against China in an
“immediate” contingency involving “a military confrontation over the status of Taiwan.”\(^1\)

In response to the moves made by the US to deter or to contain China, China began to reevaluate its national security priorities in general and to study how to deter the US from intervening in the Taiwan Strait in particular.

The military superiority of the US over China is the obvious reason why the US has been successful in intervening in the Taiwan Strait for over 50 years. However, in recent years concerns of a “China threat” have become increasingly evident in American policy circles. These anxieties stem from the fact that China has indeed been preparing itself in case another crisis occurs in the Taiwan Strait. If China can convince the US that it is too costly to intervene in another China-Taiwan crisis, then the status quo in the Taiwan Strait will shift considerably in China’s favor.

Although China’s military preparations for another US intervention in the Taiwan Strait include both conventional and nuclear forces, this paper focuses only on China’s nuclear strategy deliberations and nuclear weapons development. In Section 1, I discuss the circumstances and factors that constitute the basis for China’s reconsideration of its nuclear strategy and argue that it is clearly in China’s interest to adopt a “limited deterrence” doctrine. In Section 2, I provide an assessment of China’s nuclear capability and show that China’s nuclear threat to the US is much greater than we previously thought. In Section 3, I study the political implications of China’s nuclear threat to the US.

1. The Taiwan Issue and China’s Nuclear Doctrine

\(^1\) “Nuclear Posture Review [Excerpts], posted by Globalsecurity.org, [http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm](http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm). See also an article on this topic published
The original motivation for China to develop its nuclear weapons and missile program came in the 1950s when the US threatened to use nuclear weapons against China.\(^2\) However, as the international environment changed in the 1960s, relations between China and the former Soviet Union drastically deteriorated and China redirected its nuclear power, which originally targeted the US, against the former Soviet Union. Moreover, beginning in the 1970’s, Sino-US relations began to stabilize as the original hostility between the US and China was dispelled once the former Soviet Union became China’s major security threat. Sino-US relations continued to improve through the 1980s primarily because the US and China found much common ground in countering the threat posed by the former Soviet Union. Under these circumstances, there did not exist any compelling reason for China to expend massive amounts of resources to establish a nuclear deterrence threat against the US.\(^3\) As of the early 1990s, China had deployed, in what amounts to a mere symbolic display of national strength, only four US-targeted Dongfeng No. 5 (DF-5) ICBMs.

China’s perception of its security situation changed considerably after the 1995-96 Taiwan Strait crisis. The PLA began to realize that it was possible for the US to become involved in future Taiwan Strait conflicts, thus increasing the possibility of armed conflict or even a general war between China and the US. The PLA, therefore, began to make preparations for a war with the US.\(^4\)


\(^4\) In the summer and fall of 1996, the PLA held several high-level, large-scale military meetings to deliberate about the new developments in Taiwan Strait situation. One of the main issues discussed was
The first time China threatened to fire long-range nuclear missiles at the United States occurred during the 1995-6 Taiwan Straits crisis when Chinese Lt. Gen. Xiong Guangkai, the PLA’s top intelligence and foreign policy official, privately issued a warning to the then assistant secretary of defense, Charles Freeman. According to Freeman’s own account of this meeting, when advised that the US would respond militarily to a Chinese attack on Taiwan, Gen. Xiong offered the following response:

"No you won't. We've watched you in Somalia, Haiti and Bosnia, and you don't have the will. In the 1950's, you three times threatened nuclear strikes on China, and you could do that because we couldn't hit back. Now we can. So you are not going to threaten us again because, in the end, you care a lot more about Los Angeles than Taipei."

Although Xiong Guangkai’s comments represent the most visible and widely quoted of any such threat, an authoritative article that prefigured Xiong’s remarks had already been published in the August 1, 1995 issue of the PLA Daily (jiefangjunbao). According to the authors, nuclear weapons force countries to be flexible about their national interests: “In this nuclear age, ...[w]hen confronted with a nuclear strike, no conflict or temptation of strategic interest is worth the risk of suffering a nuclear strike on one’s own soil. Hence, in facing the challenges of nuclear deterrence in today’s nuclear age, countries should use consultation and discussion to alleviate conflicts of interest.” In other words, the authors believe that China could use nuclear threat to compel the US to change its interests in the Taiwan Strait. Since then, China has issued a number of

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how to fight against an American army. See edited volume by the Teaching and Research Office of Troops and Arms, Department of Science Research of the National Defense University, *Combined battles with joint troops and arms in high technology condition*, (Beijing: National Defense University Press, 1997); the Office of Battles, Department of Science Research of the National Defense University, *Battle theory study in high technology condition*, (Beijing: National Defense University Press, 1997).

similar warnings. For example, the *PLA Daily* published an article on February 28, 2000, as a US aircraft carrier and two cruise-missile destroyers began exercises off Japan, warning the US that China could resort to long-range missile attacks on the United States during a regional conflict: "China is neither Iraq nor Yugoslavia but a very special country, ... it is a country that has certain abilities of launching strategic counterattacks and the capacity of launching a long-distance strike."

These warnings hint at a shift in China’s nuclear strategy. Since detonating its first atomic bomb in 1964, the Chinese government has consistently maintained that the purpose of its nuclear weapons program is merely to counter nuclear threats and nuclear blackmail. Chinese nuclear strategy was not, however, originally developed for the purpose of deterring other countries from effectively launching a conventional assault on China. Liu Hua-qiu, Director of the Program on Arms Control and Disarmament in China’s Defense Science and Technology Information Center, explicitly called attention to this distinction between minimum and limited nuclear deterrence: “China’s nuclear weapons are not intended to contain every form of warfare. Instead, they are intended to counter nuclear war . . . This differs from the nuclear deterrence strategies of the US, Russian, England, and France, because the nuclear strategies of those countries include deterring conventional assaults.”

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7 Liu Huaqiu, “Zhongguo he jun kong zhengce pingxi” (Evaluation of China’s Nuclear Military Control Policy), *xiandai junshi* (Modern Military), No. 11 (1995). It is worth pointing out that Liu Huaqiu’s viewpoint is most likely influenced by John M. Collins. John M. Collins’ book, *Grand Strategy: Principles and Practices*, Naval Institute Press: Annapolis, Maryland, 1973. The PLA is profoundly inspired and deeply influenced by this book. Then the PLA Academy of Military Science translated it into Chinese and published it in January 1978, John Collins, *Grand Strategy (Chinese Version)*, Beijing: Academy of Military Sciences Press, 1978, marked as “for internal circulation only”. Give that, at the time, China still tightly controlled the influence of foreign thought and culture, the publication of this book was obviously due to the fact that China’s political and military leadership was heavily influenced by it. According to
In recent years, however, Chinese military strategists have begun to discuss the limitations of minimum nuclear deterrence and its unsuitability for China’s goals. A minimum deterrence power has two options when facing an opponent that is using tactical nuclear weapon to attack the other’s military targets: it can either instigate a nuclear counterstrike resulting in mutual assured destruction or it can simply stand by as its military targets get destroyed. Borrowing from Thomas Schelling’s concept of slippery slope, a nuclear power needs to possess the capability to escalate conflict just slightly in order to make its nuclear deterrence credible. Furthermore, some Chinese strategists are convinced that “limited deterrence” would enable China to deter not only strategic nuclear war but also conventional war, which would, if true, have the obvious and important impact of enabling China use high-tech conventional warfare to deter the US from intervening in Taiwan’s affairs. Thus, from a purely strategic standpoint, it is in China’s interest to shift from “minimum deterrence” to “limited deterrence.”

Vladimir Putin’s adoption a new national security strategy in January 2000 underscores the justification for China’s reconsideration of its nuclear strategy. Russia’s new strategy lowers the threshold at which Russia may resort to nuclear weapons. According to Russia’s previous nuclear doctrine, nuclear weapons could, in Yeltsin’s words, only be used “in the case of a threat to the very existence of the Russian

statements by China’s military personnel, this book became fashionable for a time in the PLA and played an important role in inspiring the PLA’s thinking regarding nuclear strategy.

Federation as a sovereign state.” But under the modified security strategy, Russia will not only use nuclear weapons in response to a nuclear attack, but also in response to a conventional attack when there is no other way out.

China has paid close attention to Putin’s new military strategy, and many Chinese military strategists have concluded that the reason Russia lowered its nuclear threshold was because Russia’s weak economy could not afford it to improve its conventional forces in the short run. In order to counter the threat posed by NATO expansion and to deter the US or NATO from intervening in the affairs of its neighboring countries, Russia had to revise its nuclear doctrine. In an essay published in the *PLA Daily* appraising Russia’s new military strategy, Hu Siyuan, a famous Chinese military strategist, declared that Russia’s new nuclear doctrine could effectively counter the American hegemonic power. Indeed, the more directly relevant lesson that China’s military learned from Russia’s new nuclear doctrine is that once Russia revised its nuclear strategy the West turned a blind eye to what was happening in Chechen. There is no question that Chinese military strategists long to establish a similar counterforce that could effectively deter the US from intervening in the Taiwan Strait.

### 2. China’s Nuclear Capabilities

In Section 1, I argue that it is in China’s interest to adopt a limited deterrence doctrine. Under a limited deterrence doctrine, China would need to target nuclear forces

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in addition to cities, which would require increased accuracy and expanded deployments. According to John Collins, a competent minimum nuclear deterrence strategy usually needs at least 50 nuclear missile heads, but a limited nuclear deterrence threat requires at least 500 to 1000 nuclear missile heads.\textsuperscript{11} US Defense Department estimates have cast doubt upon China’s ability to pose such a threat, claiming in 2000 that the PLA had only deployed approximately 24 CSS-4 long-range missiles that are capable of hitting the US with warheads of up to 5 megatons. Moreover, some analysts believe that once the US deploys a national missile defense system, then the US nuclear deterrence strategy and nuclear strike capability will render China’s entire intercontinental nuclear threat.\textsuperscript{12} In this section, I show that China is in fact expanding its nuclear arsenal at a rate faster than many experts have anticipated.

For the past several decades, China has never publicly revealed information about its military strength. Although the international community mainly depends upon reconnaissance satellite to obtain information, even that information is limited because China’s camouflage measures effectively prevent advanced American reconnaissance satellites from accurately estimating its nuclear capabilities. Instead of relying on intelligence information, I derive estimations of China’s nuclear deterrence capability from inferences that can reasonably be drawn from an analysis of the strategy, positioning, and adaptability of PLA’s strategic missile troops.\textsuperscript{13}

\textsuperscript{12} See, for example, Michael McDevitt, Missle Defense and U.S. Policy Options toward Beijing, Report #47, the Stimson/CNA NMD-China Project, 2002.
\textsuperscript{13} Materials in this section are based on a paper I coauthor with Dr. Changsheng Lin, “An Assessment of China’s Intercontinental Ballistic Missiles,” in Chinese, working paper, April 2003.
It is generally believed that DF-5 and DF-31 are the only two types of nuclear ICBM developed by China that can reach the US. There are three DF-5 missile brigades in total. The first DF-5 brigade, Brigade 803, is stationed in Jingzhou, Hunan Province and was the same brigade that participated in the National Day parade in 1984 in Beijing. The second DF-5 brigade is Brigade 804, stationed in Luanzhou, Henan Province. The third DF-5 brigade, Brigade 818, was expanded from an engineering regiment of the Second Artillery during the summer of 1996 and then deployed in 1999 in Hunan Province. If each brigade is fully equipped with 12 missiles, then there should be 36 DF-5 missiles in China’s arsenal.

The other type of ICBM developed by China is DF-31. This system is a solid-fueled, three-stage mobile missile with a range of 8000 km carrying a 700 kg, one-megaton warhead. The DF-31 ICBM will give China a major strike capability that will be difficult to counterattack at any stage of its operation from pre-flight mobile operations through terminal flight phases. The Second Artillery has two DF-31 brigades. The first DF-31 brigade, Brigade 813, is stationed in Luoyang, Henan Province and was the same brigade that participated in the National Day parade in 1999. Brigade 813 was originally stationed in the Funiu Mountain, but after it was equipped with DF-31, it was relocated to Nanyang, Henan Province to enhance the mobility of its missiles. The second DF-31 brigade is Brigade 820, deployed in 2000 in Wulai, Shandong Province. Thus far, no reliable information can be used to confirm that Brigade 820 is equipped

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14 “A certain missile brigade made a great record”, PLA Daily, March 15, 2000, Section 2. The unidentified brigade in Hunan Province pointed out at the Federation of American Scientists website should be Brigade 818, see http://www.fas.org/nuke/guide/china/agency/2-corps.htm.
16 PLA Daily, November 21, 2001, p.3.
with DF-31. However, there exist compelling reasons to believe that it is in fact most likely equipped with DF-31, especially if we considering what alternative missile systems are available for deployment. First, neither the DF-11 nor DF-15 can reach Taiwan, South Korea, and Japan from Shandong Province. Second, there are already several brigades equipped with DF-3 and DF-21 in nearby areas. Brigades 806, 810, 816 are stationed in Jilin and Liaoning Provinces, and Brigades 807 and 811 are stationed in Anhui Province. With such a high concentration of DF-3 and DF-21 missiles deployed in such close proximity, it is strategically a low priority to deploy yet another mid-range missile brigade in that region. Third, given its range, Shandong Province is an ideal location for DF-31.

While China had only one ICBM brigade prior to the 1995-96 Taiwan Strait crisis, the foregoing analysis implies that, since then, it has added two more DF-5 and two DF-31 brigades. Further analysis suggests that China might actually have a third type of nuclear-capable ICBM – the DF-4. The two-stage DF-4 (CSS-3) was designed initially to target the US base at Guam and was later modified to increase its range to 4750 kms so as to be able to strike Moscow. As of mid-2002 China was believed to have about 20 DF-4s with a range of up to 4,340 miles. Given DF-4 range, this type of missiles does not pose a threat to the continental US. However, the recent development of the CZ-1D (Long March) space launch vehicle indicates that the DF-4 can be easily converted into a long-range missile.

The CZ-1 was the PRC's first space launch vehicle with missions in 1970 and 1971. The CZ-1’s first and second stages were adapted from those of the DF-4. The third

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17 http://www.globalsecurity.org/wmd/world/china/df-4.htm
stage used a newly designed FG-2 solid rocket motor. In 1997, China developed the CZ-1D launch vehicle “to satisfy the need for launching small satellites into LEO.” The design consists of a 3-stage vehicle with the first and second stages burning UDMH and nitric acid (HNO3-27S) whereas the third stage utilizes HTPB. The payload capacity of the CZ-1D is 1,000 kg to LEO and 300 kg to a sun-synchronous orbit. But, significantly, the CZ-1D has never been used for orbital missions since its development.

So why did China develop the CZ-1D if it had no plan for its use? It is worth noting that CZ-1D and DF-4 are almost identical in length, diameter, and weight. To convert a DF-4 into an ICBM, one can simply affix the solid rocket motor developed for the CZ-1D on top of the DF-4’s 2-stage vehicle and then replace the satellite with a nuclear warhead. To accommodate the payload capacity of the CZ-1D (1,000 kg), one can use the smaller warhead (700 kg) developed for JL-1 (Giant Wave, sea-based missile) on the modified DF-4. Under this scheme, the three brigades, Brigade 812 and Brigade 814 (Qinghai Province) and Brigade 805 (Hunan Province), equipped with DF-4 can be easily converted into an ICBM nuclear-capable missile force. Including the possibility of DF-4 converted ICBMs, the number of brigades equipped with ICBMs increases from five to eight, and, if each brigade is fully equipped with twelve missiles, then the total number of ICBMs in China’s nuclear arsenal becomes ninety-six – a number significantly higher than many experts’ estimations.

Indeed, China has a long way to go before it can achieve a competent “limited deterrence” capability. It still needs to increase its total number of missiles, miniaturize its warheads, and make its missiles more mobile, accurate, and reliable. The larger
picture, however, depicts an image of China undertaking an ambitious nuclear modernization program. It reactivated its dormant nuclear program in the mid 1990s, has rapidly expanded its nuclear arsenal in the last ten years, and is not showing any sign of slowing down. China’s efforts to transform its nuclear program signal the resolve of its leaders to confront the US in the Taiwan Strait and provide strong evidence that China will, in due time, manage to realize its goal of achieving a “limited deterrence” capability.

3. Policy Implications

Whether the US will help defend Taiwan is the key question to the study of security issues in the Taiwan Strait. Although the US security commitment to Taiwan is ambiguous and hard to predict, it is safe to say that the greater the potential cost of intervention to the US, the less likely the US will be to intervene. China’s strategic reasoning then follows straightforwardly from its assessment of its resolve and capabilities relative to those of the US: first, China believes it is more resolved than the US in a conflict over the status of Taiwan; second, once China builds up its nuclear force, the US will be reluctant to intervene or threaten to escalate in the next Taiwan Strait crisis. Russia’s revision of its nuclear strategy and, concomitantly, US and NATO inaction in Chechen serve as an inspiration for China. Thus, to demonstrate its resolve to confront the US for the sake of defending its territorial sovereignty, China has reactivated its dormant nuclear program in the mid 1990s and is slowly but surely taking steps to modernize its nuclear force. In this paper, I show that China has already deployed eight ICBM missile brigades in only a few years. Moreover, according to the Cox Report, China’s nuclear program is expected to make even greater technological progress in
coming years and thus will become an even greater nuclear threat to the US in the near future. In the following, I briefly discuss three policy options the US can take to deal with China’s increasing nuclear threat.

First, the US can deploy a national missile defense system to reduce China’s nuclear threat. Many advocates of the missile defense system argue that a US missile defense would put China in a position of nuclear vulnerability without a retaliatory recourse. China has, however, anticipated this challenge and has taken measures in recent years to increase its capability of penetrating the US ballistic missile defense system. For example, China has made significant progress on the development of multiple independently targeted reentry vehicles (MIRV). A Japanese newspaper, citing unnamed sources, reported that China test-launched a medium range DF-21 missile equipped with multiple warheads in December 2002 from a facility in Shanxi Province; the newspaper indicated that the test was specifically designed to counter the US National Missile Defense system plans. The obvious inference, of course, is that China now has the option of retrofitting its existing missiles to carry multiple warheads, an adaptation which would easily multiply China’s nuclear missile force against the US. China's future missiles are also expected to include decoys and penetration aids that can be used to overwhelm or fool certain kinds of missile defense systems. According to a Chinese military expert’s estimates, 50% of China’s ICBMs will be able to penetrate the missile defense system. Of course, no one can say definitely how effective the US national

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21 Hiroyuki Sugiyama, “China Tests Multiple-Warhead Missiles; New ICBMs to be Deployed,” The Daily Yomiuri (Internet version) in English, Tokyo, 07 Feb 03 (FBIS Transcribed Text)
missile defense system will be, but as long as there is a chance that not all of China’s
missiles will be intercepted and as long as the US “cares more about Los Angeles than
Taipei,” the US is unlikely to escalate the crisis to the nuclear level, which implies that
China’s nuclear threat will be successful in deterring the US from intervening in the next
Taiwan Strait crisis.

Second, if the US is reluctant to do “whatever it takes”23 to defend Taiwan, then
the US can reduce cross-strait tensions by convincing Taiwan that the US will not defend
the island if it provokes China. The most recent “provocation” made by Taiwan is
President Chen Shui-bian’s proposal in March 2003 to hold a referendum to determine
whether Taiwan should be allowed to join the World Health Organization (WHO) as an
observer, and, in a second question, to decide whether or not to the construct a
controversial nuclear power plant. An unnamed U.S. official was quoted as telling the
United Daily News in Taiwan that Beijing believed once a referendum precedent had
been set, then “sooner or later Taiwan will hold a referendum on Taiwan's sovereignty."
Douglas Paal, director of the American Institute in Taiwan, reportedly told Chen that the
US is opposed to all forms of referenda in Taiwan. A week after their meeting, on June
23, 2003, US State Department Deputy Spokesman, Philip T. Reeker, confirmed the US
position on this issue, declaring that “We have continued to urge Taiwan on a regular
basis, as well as the People's Republic of China, to refrain from actions or statements that
increase tension across the straits or make dialogue more difficult to achieve.”24

If Taiwan disregards US wishes and nevertheless provokes a Chinese attack, will
the US defend Taiwan? In a national survey conducted in Taiwan in January 2003,

23 During an interview with ABC television on April 25, 2001, Bush said he would do "whatever it takes"
to defend Taiwan from any Chinese attack.
47.5% of the respondents believed that the US would indeed help defend Taiwan even if Taiwan provoked China first.\textsuperscript{25} It is also interesting to note that respondents who support the pro-independence party, the Democratic Progressive Party, are more likely (66.4%) to believe that the US would help defend Taiwan than those who support either the Kuomintang (44.5%) or the People First Party (50.9%). Therefore, if the US does not plan to defend Taiwan, then it should make it widely known to the people on Taiwan that the US will not defend Taiwan if Taiwan declares independence. Otherwise, misperception and miscalculation might increase tensions in the Taiwan Strait, which might pull China, Taiwan, and the US into a war – perhaps even a nuclear war.

Third, if the US does not have the will to fight a nuclear war with China to defend Taiwan but still concerns about Taiwan defense, then to prevent Taiwan from being coerced by China politically, the US should do “whatever it takes” to provide weapons to Taiwan that will enable it to defend itself against an attack from China.

\textsuperscript{24} US State Department Briefing Transcript, June 23, 2003.
\textsuperscript{25} In the case that China attacks Taiwan without provocation, 60.89% of the respondents believed that the US would help defend Taiwan. The survey was commissioned by the Program in Asian Security Studies at Duke University and was conducted by the Election Study Center of the National Chengchi University in January 2003. The sample size is 1,225, and the margin of error is 3%.