

21 November 2013

Chinese Nuclear Force Modernization and Its Arms Control Implications

China is the only NPT state that is increasing the size of its nuclear forces. Worse still, writes Richard Weitz, Beijing may be about to change its 'no first use' policy, which may require Washington to adjust its strategic dialogue with this modernizing power.

By Richard Weitz for ISN

Of the five states that the Nuclear Non-Proliferation Treaty permits to possess nuclear weapons, only China is increasing the size of its nuclear forces. Despite this, Beijing adamantly refuses to join the Russian-U.S. strategic nuclear arms reduction negotiations. In addition, Chinese publications, statements, and actions suggest that Beijing's nuclear doctrine, strategy, and posture may be changing. For example, while China's "no first use" policy has been a cornerstone of its declaratory posture since Beijing first acquired nuclear weapons, some Chinese writings suggest that it is backing off from this commitment.

There is also general consensus that China's nuclear capabilities are improving; the debate is over how fast, the extent to which China's actual nuclear employment policies are changing, and what these changes imply for other countries such as the United States. In general, U.S. policymakers will need to promote greater dialogue with their Chinese counterparts on strategic issues—regarding both capabilities and doctrine—while more cautiously considering the implications of undertaking any kind of strike, nuclear or conventional, against China that could risk inadvertently leaping up the escalatory ladder.

Comprehensive...but Modest

Hans M. Kristensen and Robert S. Norris have [recently published](#) their latest assessment of China's nuclear force modernization. Their analysis shows how the Second Artillery Corps, which controls the PLA's strategic missiles, deploys a variety of more effective land-based ballistic missile systems, with improving accuracies and longer ranges. Kristensen and Norris also calculate that China possesses approximately 250 nuclear warheads that can be launched by some 150 land- and sea-based ballistic missiles, aircraft, and possibly cruise missiles. The authors describe China's modernization efforts as comprehensive in size, but modest in pace.

Yet according to a [Chinese source](#), the "lowest level" of nuclear weapons needed to assure second-strike capability requires further growth in China's nuclear arsenal. And it may well be the case that Beijing is moving in that direction. According to media reports, the U.S.-China Economic and

Security Review Commission is about to release a [report](#) that the JL-2 submarine-launched ballistic missile will achieve initial operational capability by the end of this year. With a range of 4,000 nautical miles, the missile could theoretically be used against U.S. cities. However, a Chinese submarine would find it difficult to get close enough to the continental United States to hit such targets. The submarine could more easily [target](#) Japan, India, or Russia while operating in China's territorial waters.

The modernization of China's nuclear arsenal is also underscored by several qualitative developments. Among the most significant is the transition to solid-fuel missiles. Unlike their liquid-fueled antecedents, these weapons are much more readily deployable and do not require de-fueling in the absence of a launch. In addition, the acquisition of road-mobile inter-continental ballistic missiles (ICBM) and functional submarine-launched ballistic missiles (SLBM) gives China a more robust second-strike capability, as these systems are notoriously difficult for adversaries to target. Meanwhile, China is also working toward equipping its ICBMs with multiple independently targetable reentry vehicles (MIRV) warheads, which will allow a single missile to strike multiple targets. China's new strategic capabilities—which also include developments in cyber strike, missile defense, and anti-satellite weapons—are providing Chinese leaders with more military options to respond to potential threats.

A Question of Intent

Although China's nuclear force modernization sounds impressive, several important caveats exist. Above all, the Chinese military will need experience and training with these new technologies before they can be considered true field-worthy options in a nuclear war. In addition, while China has possessed a nuclear first-strike capability for 30 years, its arsenal is still considerably smaller than that of the United States. There is still no conclusive evidence that Chinese nuclear submarines engage in long-range strategic patrols or that Chinese submarine captains have the pre-delegated authority to launch nuclear missiles if they lose communication with the Chinese high command. However, China's modernization could signal a future change in its doctrine and behavior. In particular, these developments may embolden Chinese leaders if they were previously restrained by a lack of deterrent options.

Chinese analysts claim that their country's growing capabilities have not affected their [employment doctrine](#) other than to make them more comfortable with the concept of nuclear deterrence. This current position was first openly articulated in China's [2006 Defense White Paper](#), which states that Beijing's aim is to “deter other countries from using or threatening to use nuclear weapons against China,” and to uphold “the principles of counterattack in self-defense and limited development of nuclear weapons.” The [2008 Defense White Paper](#) similarly stated, “China remains committed to the policy of no first use of nuclear weapons [and] pursues a self-defensive nuclear strategy.”

China's modernization has been intended to ensure its ability to retain a second-strike capability, even if the United States were to launch a “bolt out of the blue” first-strike against China. Depending on one's perspective, the Chinese leadership may in fact be constituting a “secure second-strike capability for the first time or recovering one it lost,” as the United States developed more sophisticated strike options in the 1980s. Because of the overwhelming size of the U.S. arsenal compared to China's, Beijing aims to ensure the survivability of a second-strike option by establishing a counterattack force that is mobile, difficult to detect, and rapidly mobilized for counterattack. Chinese [analysts](#) confirm that, “China will continue to apply deterrence at the grand strategic level, to base its pure and central deterrence on a retaliatory second-strike capability, to depend more on uncertainty for better deterrence effect, and to modernize its nuclear arsenal by keeping it more survivable, penetrating, and secure.”

Citing China's pledge not to use nuclear weapons first in a conflict, PLA Senior Colonel Yao Yunzhu

argues that these augmentations simply aim to make its deterrent more credible and effective. She maintains that, unlike the United States, the Chinese do not believe that nuclear wars could ever be fought and won in any kind of controlled or measured way. She also denies that China would use their nuclear capabilities as a political instrument or as part of a war-winning strategy. Moreover, she rejects the concepts of escalation control, escalation ladders, firebreaks, and others developed by U.S. strategists to guide the actual use of nuclear weapons in a war whose result is less than nuclear annihilation. According to Yunzhu, while China attempts to keep its arsenal "lean", it also needs to develop modern weaponry to be able to communicate a credible deterrent effect. Likewise, General Jing Zhiyuan, former commander of the Second Artillery Force, insists that China's nuclear arsenal "will not compete in quantity" with the nuclear superpowers and that China will maintain the "lowest level" of nuclear forces adequate to ensure its national security.

Implications

China's evolving nuclear capabilities and doctrine undoubtedly have implications for regional arms control. It has certainly encouraged debate regarding the merit and application of Beijing's long-standing no-first-use (NFU) doctrine. Although still publicly reaffirmed by the government, some warn that U.S. strikes on the PLA's nuclear command and control systems - or even perceived U.S. preparations to attack China's nuclear forces - could precipitate Beijing's first use of nuclear weapons. The situation is further complicated by the close integration of China's conventional and nuclear systems, meaning that a conventional strike against a command and control node could be interpreted as an attack on China's nuclear systems, triggering a nuclear response. A few Chinese authors now [imply](#) that Beijing may need to use nuclear weapons first to avert a defeat in a major conventional war. These interpretations, combined with the inability to enforce China's pledge, lead many to [warn](#) U.S. policymakers against presuming that they can employ unlimited conventional attacks on Chinese military targets without fear of triggering nuclear escalation.

Chinese representatives also argue that, since their nuclear forces remain below the levels of Russia and the United States, Beijing should eschew participating in the strategic arms reductions talks between Moscow and Washington. Unlike Russia and the United States, China has yet to adopt legally binding limits on its nuclear weapons or strategic nuclear delivery vehicles. Chinese officials also insist that, as the weaker party, they cannot be as fully transparent as Russia and the United States about their nuclear forces, which are subject to bilateral monitoring and verification. The United States and Russia still possess around ten times as many deployed strategic nuclear warheads as China, but U.S. and Russian [apprehensions persist](#) about reducing their nuclear forces much further without greater evidence that China will join the nuclear disarmament process. Securing a more binding commitment from the Chinese government than simple declarations of intent to restrain the country's nuclear forces is essential for reassuring Washington and Moscow that further reducing their nuclear arsenals will not undermine global and regional stability. Domestic political opposition will also make it more difficult for the United States and Russia to reduce their strategic nuclear weapons further without some indication that China will constrain its nuclear potential.

Beijing's acquisition of a secure credible "second-strike" capability could even engender greater stability in China-U.S. relations by reducing Beijing's fears of a disarming preemptive attack. But China's growing nuclear capabilities could also increase the risk of strategic miscalculation and contribute to nuclear escalation. For example, China's growing conventional capabilities may, along with its disputed territorial claims, increase occasions in which a conventional strike could be interpreted as a nuclear first-strike. In addition, territorial claims in the Asia-Pacific create flashpoints that are vulnerable to miscalculations since, unlike with the Soviet Union during the Cold War, China considers territory under the control of some nearby U.S. allies an integral part of its national territory. Yet Beijing would appear revisionist to others if it were to seize them by force. Chinese policymakers

may also be emboldened by their new capabilities to more readily challenge the United States and other countries on the conventional level, especially in crises or over issues deemed of vital interest to Beijing, with Chinese policymakers expecting their nuclear shield to deter U.S. nuclear and perhaps even conventional retaliation. This development would weaken the credibility of U.S. extended deterrence guarantees in Asia and thereby encourage nuclear weapons proliferation.

For additional reading on this topic please see:

[The United States, China, and Nuclear Arms Control: Time for a Creative Spark](#)

[Efficacy of Small Arms Control Measures and National Reporting](#)

[Arms Control and Nonproliferation: A Catalog of Treaties and Agreements](#)

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Publisher

[International Relations and Security Network \(ISN\)](#)

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