

**Testimony before the U.S.-China Economic Security Review Commission**

**Hearing on “A ‘World-Class’ Military: Assessing China’s Global Military Ambitions”**

**Panel III: Building a World-Class Military: Missions, Modernization, and Bases**

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Thank you to the Commissioners for giving me the opportunity to testify on the implications of China’s military reforms for Chinese nuclear strategy and weapon program. Before I begin, I want to stress that even though the Pacific Forum is an independent, nonpartisan think tank that does not take institutional positions on policy issues, I am speaking in my personal capacity.

To understand the implications of China’s military reforms for Chinese nuclear strategy and weapon program, it is necessary to understand not only the origins and key features of that strategy and program, but also recent developments and the situation on the eve of the reforms. That is why in this testimony, I begin with an overview of the key decisions and developments that have shaped China’s nuclear strategy and weapon program from its inception. I then move on to discuss more recent dynamics and the “state of play” before Chinese President Xi Jinping announced the launch of the reforms, which he stated aim to build “world-class forces” for China by 2049.<sup>1</sup> On that basis and using publicly available information as well as drawing on landmark studies and my work in track-2 and track-1.5 initiatives on strategic nuclear issues with the Chinese national-security community, I reflect on what the reforms could have in store for China’s nuclear strategy and weapon program.<sup>2</sup> Finally, I conclude with recommendations for the U.S. government.

I make the following arguments and recommendations:

- China’s nuclear strategy has been consistent since Beijing first exploded a nuclear device in 1964. It has been a self-defense strategy, which is why China has adopted a no-first-use (NFU) policy and chosen to develop a small nuclear force.
- In recent years, however, China has been modernizing, diversifying, and expanding its nuclear arsenal at a relatively rapid pace, raising concerns in Washington and elsewhere that Beijing may be on the cusp of some policy and strategy changes.

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<sup>1</sup> President Xi and others first announced their intention to launch military reforms at the Third Plenum of the 18<sup>th</sup> Party Congress in October 2013. Yet it was at the 19<sup>th</sup> Party Congress in October 2017 that Xi stressed that the people’s armed forces should become “world-class forces” by mid-century.

<sup>2</sup> While there are several track-2 and track-1.5 initiatives with the Chinese, the main dialogue on strategic nuclear issues is the biannual “U.S.-China Strategic Nuclear Dynamics Dialogue,” led by the Pacific Forum and Naval Postgraduate School and in partnership with the China Foundation for International and Strategic Studies and China Arms Control and Disarmament Association since the mid-2000s. The public reports of the dialogue are available on the Pacific Forum website at [www.pacforum.org](http://www.pacforum.org). For a summary of findings until 2014, see also Michael O. Wheeler, *Track 1.5/2 Security Dialogues with China: Nuclear Lessons Learnt* (Washington, DC: IDA, 2014).

- Rolled out in that context, it remains to be seen if Beijing's sweeping military reforms will mean "nuclear continuity" for China or if they will trigger "nuclear change." Looking ahead, however, it appears clear that some degree of change is likely to happen.
- In these circumstances, the United States should 1) invest to maintain effective deterrence of China (and extended-deterrence commitments to its allies); 2) create the conditions for U.S.-China strategic nuclear dialogue to begin now; 3) lead on arms control, beginning by pursuing extension of the 2010 U.S.-Russia New Strategic Arms Reduction Treaty (New START); and 4) prioritize crisis management.

### **The long shadow of the past: Origins and key features of China's nuclear strategy and weapon program**

China's conventional military strategy has been dynamic, changing several times since the founding of the People's Republic of China (PRC) in 1949. Yet by contrast, China's nuclear strategy has remained unchanged since Beijing exploded its first nuclear device in 1964. Significantly, China did not seek to change its nuclear strategy despite its vulnerability either to an invasion or a nuclear first strike by the United States or the Soviet Union during the Cold War, and despite continued vulnerability after the Cold War, mostly vis-à-vis the United States. Accordingly, one word best describes China's nuclear strategy: consistency.

Recent scholarship has shown that China's nuclear strategy and program have several unique features.<sup>3</sup> Three stand out. First, unlike conventional military strategy, the top leadership of the Chinese Communist Party (CCP) *never* delegated authority over nuclear strategy to senior officers of the People's Liberation Army (PLA). From the time it was first articulated, Chinese nuclear strategy was viewed, and continues to be viewed thereafter, as a matter of supreme national policy. That means that it had to be controlled at the highest level: the Central Military Commission (CMC), which reports to the Chairman, Xi Jinping today; in addition to his presidential duties, Xi Jinping serves as General-Secretary of the CCP and Chairman of the CMC.

Second, as a result, the views on nuclear weapons of the top leadership of the CCP at the time China built its arsenal had, and have had to this day, a *powerful* influence on Chinese nuclear strategy. These views, based on the limited utility of nuclear weapons, support maintaining a strategy of assured retaliation and not integrating nuclear strategy with conventional strategy or pursuing any form of nuclear warfighting, even limited. More specifically, longstanding Chinese thinking on nuclear weapons has been that these weapons *only* serve to prevent nuclear coercion and deter nuclear attack.<sup>4</sup> Mao Zedong, for instance, stated in 1960 that "our country in the future may produce a few atomic bombs, but we by no means intend to use them. Although we do not intend to use them, why produce them? We will use them as a defensive weapon."<sup>5</sup> Chinese officials have also held the belief that nuclear weapons provide other important benefits, notably major-power status to China and a source of national pride to all Chinese.

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<sup>3</sup> M. Taylor Fravel, *Active Defense: China's Military Strategy since 1949* (Princeton, NJ: Princeton University Press, 2019), notably pp. 236-269.

<sup>4</sup> Concerns that the United States would use tactical nuclear weapons during the 1950-1953 Korean War, a threat Washington made almost explicit, was a major factor in Beijing's decision to develop nuclear weapons. Significantly, Beijing declared upon conducting its first nuclear test in 1964 that it was meant to respond to "the United States imperialist policy of nuclear blackmail and nuclear threats."

<sup>5</sup> Quoted in Fravel, *op. cit.*, p. 238.

Third, and logically, that is why Beijing has always claimed to have a “self-defense nuclear strategy.”<sup>6</sup> That is also why Beijing has given the Second Artillery Force (SAF), the component part of the PLA created in 1966 to control Chinese nuclear weapons, the sole mission of conducting a nuclear counterstrike, and why Beijing has “only” sought to develop a small nuclear force and refused to join any arms races. Beijing, in other words, has focused on developing “the minimum means of reprisal,” just enough to conduct an effective nuclear counterstrike.<sup>7</sup> In turn, that explains why Beijing has focused on developing a nuclear force based on missiles rather than gravity bombs (missiles are more adequate for counterstrike purposes), why it has maintained a de-mated force posture (because it has no intention to engage in nuclear warfighting), and why it has adopted an NFU policy and given negative security assurances to non-nuclear-weapon states.<sup>8</sup>

### **Recent developments: The state of play on the eve of China’s military reforms**

Accordingly, at least until the mid-/late 2000s, China was “little more than a footnote in the history of the nuclear era,”<sup>9</sup> an “afterthought,”<sup>10</sup> and even a “forgotten nuclear power”<sup>11</sup> in U.S. strategic thinking. China’s nuclear-weapon program, quite simply, was *not* deemed a serious threat to the United States. What’s more, Washington had other priorities. During the Cold War, its focus was the Soviet Union and, in the 1990s, U.S. attention shifted to “rogue states,” notably Iraq, North Korea, and Iran, and to strengthening the nonproliferation and nuclear-security regimes.

Over the past decade, however, Washington has begun to worry about China’s nuclear-weapon program, mostly because Beijing has been modernizing its strategic force, diversifying its delivery systems, and increasing the number of nuclear weapons; China now has an arsenal more capable than ever of striking the U.S. homeland. Moreover, Beijing has been improving its capacity for power projection into neighboring waters as well as in the space and cyber domains, becoming increasingly capable of holding U.S. forward military presence and U.S. allies and partners at risk.

China does not reveal the size of its nuclear arsenal, but experts estimate that it has nearly doubled over the past decade and a half, consisting today of approximately 290 warheads.<sup>12</sup> While it is

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<sup>6</sup> For a long time, China’s nuclear strategy was based on the statements of CCP leaders and internal doctrinal publications. References to China’s “self-defense nuclear strategy” first appeared in the 2006 Defense White Paper. See Information Office of the State Council of the PRC, *China’s National Defense in 2006*.

<sup>7</sup> For a comprehensive overview, see Jeffrey Lewis, *The Minimum Means of Reprisal: China’s Search for Security in the Nuclear Age* (Cambridge, MA: The MIT Press, 2007).

<sup>8</sup> Immediately after conducting its first nuclear test in 1964, China declared that “The Chinese Government hereby solemnly declares that China will never at any time and under any circumstances be the first to use nuclear weapons.” Since then, China’s NFU commitment has been emphasized in all official statements and publications.

<sup>9</sup> Brad Roberts, *China-U.S. Nuclear Relations: What Relationship Best Serves U.S. Interests?* (Washington, DC: IDA, August 2001), ES-2.

<sup>10</sup> Brad Roberts, *Asia’s Major Powers and the Emerging Challenges to Nuclear Stability Among Them* (Washington, DC: IDA, 2009), p. 33.

<sup>11</sup> Brad Roberts, Robert A. Manning, and Ronald N. Montaperto, “China: The Forgotten Nuclear Power,” *Foreign Affairs*, vol. 79, no. 4, July/Aug. 2000, p. 53.

<sup>12</sup> Hans M. Kristensen and Robert S. Norris, “Chinese Nuclear Forces, 2018,” *Bulletin of the Atomic Scientists*, June 2018. See also Hans M. Kristensen and Matt Korda, “The Pentagon’s 2019 China Report,” Report from the Federation of American Scientists, Washington, DC, May 2019. Note that there is no certainty to this figure. Some estimates suggest that China’s arsenal is significantly bigger: up to 1,600-3,000 weapons. These higher estimates, however, are largely based on speculation. Most experts do not believe they are credible.

*much* smaller than the U.S. and Russian arsenals (estimated to sit at approximately 6,185 and 6,500 warheads, respectively), it is bigger than the United Kingdom's (estimated to consist of 215 warheads) and roughly on par with France's (estimated to include 300 warheads).<sup>13</sup>

More worrying has been Beijing's rapid and impressive modernization and expansion of its nuclear delivery systems, which are becoming increasingly diversified, mobile, resilient, and effective.<sup>14</sup> Beijing's land-based nuclear missile force now includes mobile, solid-fueled systems, approximately 80 intermediate-range ballistic missiles (IRBMs) and 90 intercontinental ballistic missiles (ICBMs); the most notable additions have been the dual-capable DF-26 IRBMs and DF-31AG ICBMs, as well as the DF-31 ICBMs (the latter are still in development). Beijing also has been developing penetrative aids and MIRVing existing missile models, notably the DF-5C ICBMs, while pursuing hypersonic glide vehicle technology, which makes systems more maneuverable, faster, and more capable of penetrating existing missile defense systems. Finally, Beijing has begun to bring online sea and air nuclear platforms, entering the exclusive club of nuclear-armed states possessing a nuclear triad. The PLA Navy (PLAN) has been developing China's first credible sea-based nuclear capability in the form of four *Jin*-class (Type 094) ballistic missile submarines (SSBNs), each capable of carrying 12 JL-2 MIRV-capable submarine-launched ballistic missiles (SLBMs); China's next-generation SSBNs, the Type 096, will likely be armed with the JL-3 SLBMs, which are still in development.<sup>15</sup> The PLA Air Force (PLAAF), for its part, has been developing an air-based capability in the form of a new strategic bomber (dubbed H-20) coupled with nuclear-capable air-launched ballistic missiles.<sup>16</sup>

In response to concerns, Beijing has argued that these developments are purely defensive, that China has always had, and maintains, a self-defense nuclear strategy and NFU policy, and that its modernization efforts are consistent with its tradition of minimum deterrence and solely aimed at developing a "lean and effective" force.<sup>17</sup> These are codewords to stress that China must ensure that its nuclear forces remain reliable and survivable, especially in the context of improving U.S. missile defense and conventional strike capabilities and, more recently, the U.S. refocus on the Indo-Pacific, which Beijing regards as directed against China and an attempt to maintain U.S. military hegemony. As one senior Chinese scholar has put it: "Be it the Rebalance or the Indo-Pacific Strategy, it's always been about containing China and maintaining U.S. primacy."<sup>18</sup>

Yet in addition to doubting the strength and even the veracity of China's NFU policy, the United States has been concerned that Beijing may decide to abandon its practice of minimum deterrence.<sup>19</sup> The concern that Beijing might "sprint to nuclear parity" with Washington and

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<sup>13</sup> Hans M. Kristensen and Matt Korda, "Status of World Nuclear Forces," Report from the Federation of American Scientists, Washington, DC, May 2019.

<sup>14</sup> For more details, see *Annual Report to Congress: Military and Security Development Involving the People's Republic of China 2019* (Washington, DC: Department of Defense, 2019), notably pp. 65-67.

<sup>15</sup> China's old *Xia*-class submarine has not gone on patrol and is usually assumed to be not operational/nor deployed.

<sup>16</sup> There is disagreement among experts as to whether China's old H-6 bomber is nuclear-capable. The U.S. Department of Defense typically assesses that it is.

<sup>17</sup> Fravel reports that the "lean-and-effective" formulation was first uttered by Commander Li Shuqing in a 1978 speech (*op. cit.*, p. 261). It appeared in writing in the 2006 Defense White Paper and is used in follow-on documents.

<sup>18</sup> Interviews conducted by the author, Beijing, China, March 2019.

<sup>19</sup> Chinese strategists have been debating the pros and cons of maintaining an NFU policy since the 2000s. While most agree that China should maintain that policy, Beijing has injected uncertainty as to whether it would go nuclear in

Moscow has been especially serious given that the United States and Russia, unlike China, have been building their nuclear arsenals down, not up.<sup>20</sup>

Furthermore, Washington has been worried that China's evolving nuclear capabilities will present Beijing with new, problematic strategic options and create significant command, control, and communication (C3) issues. For starters, the Chinese modernization program could lead Beijing to change its stance on nuclear counterattack: it could adopt a launch-on-warning (LOW) posture, abandoning its traditional stance to retaliate only after it has absorbed a nuclear strike. The improved mobility, readiness, and informatization of SAF assets and the PLA's space-based early-warning system have increasingly made adoption of such a posture possible. The emerging nuclear roles of the PLAN and PLAAF will make it even easier because nuclear warheads *have* to be mated with delivery systems on sea and air platforms. Is an LOW posture compatible with an NFU policy, especially given that Beijing has often pointed to its de-mated posture as evidence that it abides by NFU principles?

Another area of possible change concerns Chinese thinking about adopting a limited nuclear warfighting posture as a result of the increasing commingling and co-location of its nuclear and conventional assets, the diversification of its nuclear forces (notably its emerging nuclear triad), and its work to enhance "integrated strategic deterrence."<sup>21</sup> Could these developments lead Beijing to endorse warfighting as an option for its nuclear forces?

The consequences of Chinese modernization for C3 have also been worrisome to Washington. While the SAF was tasked to pursue "dual deterrence and dual operations," i.e., wield both nuclear- and conventional-capable missiles, as early as in the mid-1980s, the modernization, diversification, and expansion of China's conventional force has, as mentioned earlier, only begun to grow fast in recent years. Looking ahead, it is likely that the continued introduction of new dual-capable missiles, the increasing dispersal of land-mobile missiles, and the steady rise in the number of deployable nuclear weapons will, at the very least, complicate the C3 systems of China's land-based nuclear delivery systems. What's more, the emerging nuclear roles of the PLAN and PLAAF will add extra and probably *major* layers of complexity.

The concern is that a human error or malfunction could increase instability or lead to inadvertent escalation. Many questions remain unanswered: Will C3 systems be modernized in a timely fashion, as nuclear modernization proceeds? Will the SAF be involved in PLAN and PLAAF nuclear missions? Will the PLAN and PLAAF develop nuclear-warhead management know-how and capability of their own? How do Beijing and the PLA intend to communicate with PLAN assets? Will they introduce pre-delegated authority to launch nuclear weapons?

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some circumstances, notably in the case of a non-nuclear attack that would degrade its nuclear forces. The PLA's 2013 *Science of Military Strategy*, for instance, talks about the need to maintain "an appropriate degree of ambiguity."

<sup>20</sup> Michael O. Wheeler, *Nuclear Parity with China?* (Washington, DC: IDA, 2012).

<sup>21</sup> While Chinese strategists in the 1990s discussed nuclear weapons as the cornerstone of deterrence, *weishe* today ("deterrence" in Chinese) encompasses a broader definition, including all aspects of "comprehensive national power" (*zonghe guojia liliang*): Zhou Peng and Yun Enbing, "Developing the Theory of Strategic Deterrence with Chinese Characteristics," *China Military Science*, No. 3, 2004. For an in-depth analysis, see Michael Chase and Arthur Chan, *China's Evolving Approach to "Integrated Strategic Deterrence"* (Washington, DC: RAND Corporation, 2016).

These worries have been magnified by China's lack of transparency about the current and future size and shape of its nuclear forces and activities. For instance, despite invitations to do so (including in track-1.5 discussions), Chinese officials have refused to articulate a level at which China would have "enough" nuclear weapons and, significantly, China is the *only* P-5 member that leaves open the possibility of producing *more* fissile material for explosive purposes. Opacity has been Beijing's tradition practice given its choice to develop a smaller arsenal than the United States and Russia. As PLA Major-General (Ret.) Yao Yunzhu has put it, "For a state adopting a no-first-use policy and intending not to waste too much money on unusable weapons, dependence on opaqueness to bring about greater deterrent value is a wise choice."<sup>22</sup>

In recent years, worries have also heightened as a result of China's growing assertiveness in the Indo-Pacific and beyond, notably since President Xi Jinping took office in 2012. Moreover, Beijing's refusal to engage in comprehensive strategic nuclear dialogue with Washington has not helped. To better understand Chinese nuclear thinking and developments, address China's concerns about the United States, and move toward a more predictable strategic relationship, Washington has been seeking to engage in official discussions with Beijing for years, an offer that Chinese officials have *systematically* declined, arguing that "the conditions are not ripe" because the U.S. arsenal is much larger than China's and because they stand to lose as they would be required to accept a level of transparency that would compromise the survivability of their strategic force. Yet while rejecting dialogue, Beijing has still sought reassurance from Washington, encouraging the United States, in vain, to adopt an NFU policy and to accept mutual vulnerability as the basis of the U.S.-China strategic relationship.<sup>23</sup>

Of note: a considerable amount of work has been done between Americans and Chinese at the track-2 and track-1.5 levels, which has been invaluable in helping Washington and Beijing better understand each other. From a U.S. perspective, however, these initiatives are not, and should not be considered, a substitute for track-1 engagement. While an increasing number of Chinese participants have come to concur with U.S. participants that China should engage in official dialogue, Beijing has chosen not to take up their advice, so far.

### **China's military reforms: The trigger to nuclear change?**

Xi Jinping rolled out China's military reforms in that context. The reforms, which aim to reshape the PLA to improve its ability to fight and win informationized wars and to ensure that it remains loyal to the CCP, have sought to strengthen civil-military integration and to improve joint-operations capability.<sup>24</sup> So far, the most significant (or most visible) change to China's nuclear-weapon program has been renaming the SAF the PLA Rocket Force (PLARF) and upgrading it to full-service status, equal to the army, navy, and air force; until then, the SAF had been an independent branch that is considered equal to the services.

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<sup>22</sup> Yao Yunzhu, "China's Perspective on Nuclear Deterrence," *Senior Leaders Perspective*, Spring 2010, p. 29.

<sup>23</sup> For efforts to start nuclear dialogue with China, see David Santoro, "Asia-Pacific Strategic Nuclear Policy Dialogues 2: Asia's Four Nuclear Armed States," APLN/CNND *Policy Brief* No. 27, Jan. 2017, notably pp. 1-4.

<sup>24</sup> For a comprehensive analysis of China's military reforms, see Phillip C. Saunders, Arthur S. Ding, Andrew Scobell, Andrew N. D. Yang, and Joel Wuthnow (eds.), *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms* (Washington, DC: NDU Press, 2019).

While there is *much* uncertainty about what the reforms will mean for China's nuclear strategy and weapon program, both because the situation remains extremely fluid and because there is little public information available, there seem to be two possible options: continuity or change.

### Option 1: Continuity

The new PLARF name and its upgrade to a full service might merely codify the Force's de facto status. This is a possibility. One analyst has made that case, stressing that the change is mainly giving the Force the status and prestige it deserves. As he points out:

The Second Artillery's organizational clout had steadily grown in the last 15 years. Prior to the creation of the Rocket Force, the Second Artillery commander and other senior leaders enjoyed ranks and grades equivalent to that of their counterparts in the services. The Second Artillery had the same constellation of bureaucratic structures as the services, including a Political Department, Logistics Department, Armaments Department, and Command Academy.<sup>25</sup>

In these circumstances, the most likely developments in the foreseeable future would involve the continuation of steady yet relatively modest growth of the Chinese nuclear arsenal. Similarly, China's longstanding nuclear policy and strategy, which, as mentioned earlier, are and always have been deeply ingrained in the Chinese psyche, would be maintained. According to Chinese official statements, multiple Chinese media reports, and Chinese strategists, this is what to expect.

In describing the PLARF, Xi Jinping has used language similar to the one authoritative Chinese documents described the SAF, notably the 2015 Defense White Paper (China's latest).<sup>26</sup> For instance, he said that the PLARF will be "a fundamental force for our country's strategic deterrent, a strategic pillar for our country's great power status, and an important cornerstone in protecting our national security."<sup>27</sup> A *China Daily* article also added that China's nuclear policy will remain unchanged: "Reiterating the no-first-use nuclear weapons policy and the country's defensive nuclear strategy, [Ministry of National Defense Spokesman] Yang [Yujun] said China always keeps its nuclear capabilities at the minimum level required for safeguarding its national security."<sup>28</sup> In track-1.5 and track-2 engagements as well as one-on-one discussions, Chinese strategists have echoed these words: the reforms, they say, will *not* lead to nuclear change.

Moreover, in addition to dismissing systematically (to this day) the possibility that Chinese nuclear forces adopt a warfighting role, Beijing has insisted that technological and operational improvements of its forces will *not* affect China's longstanding policy and strategy. The PLA's 2013 *Science of Military Strategy*, for instance, suggests that adoption of an LOW posture would be consistent with China's NFU policy: "Rapid launch of nuclear missiles for counterattack is

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<sup>25</sup> David C. Logan, "Making Sense of China's Missile Forces" in Saunders et al., *op. cit.*, p. 412.

<sup>26</sup> State Council Information Office of the PRC, *China's Military Strategy*, 2015.

<sup>27</sup> Wang Shibin and An Puzhong, "Founding Ceremony for Army Leading Organization, Rocket Force and Strategic Support Force Held in Beijing," *China Military Online*, Jan. 1, 2016.

<sup>28</sup> Zhao Lei and Li Xiaokun, "Three New Military Branches Created in Key PLA Reform," *China Daily*, Beijing, Jan. 2, 2016.

consistent with [China's] no first use policy and could effectively prevent further loss of nuclear forces, and increase the survivability and counterattack capabilities of [China's] nuclear power."<sup>29</sup>

It is also worth noting that despite the creation of a new, operational command structure for the PLA, PLARF C3 systems do not appear to have changed. An article in *Rocket Force News* stated that the PLARF is "a strategic military service directly controlled and used by the Central Party Committee, Central Military Commission, and Chairman Xi."<sup>30</sup> Chinese strategists, similarly, have insisted that the command authority of the nuclear forces *in particular* (but of conventional assets too) remains centralized under the CMC. Some have even argued that such centralization could be *reinforced* as a result of the reforms.<sup>31</sup> That is why they have dismissed concerns about potential issues involving China's C3 systems, often adding that new technologies will help enhance control over these forces, including the emerging PLAN and PLAAF nuclear platforms.<sup>32</sup>

If all this is confirmed, the PLARF can be expected to continue to focus on expanding and improving its conventional assets, while keeping (maybe even pushing?) nuclear forces in the background, even as Beijing is bringing online new and more diversified nuclear-capable systems (including a nuclear triad) and making progress towards a more integrated strategic deterrence posture. Significantly, a recent study has shown that the PLARF could strengthen its conventional mission over the nuclear mission because the latter is less dynamic and deemed *much* less prestigious, making it more difficult, as a result, for officers who choose it to ascend to the ranks of senior leadership.<sup>33</sup>

## Option 2: Change

Alternatively, the PLARF's new name and upgrade to full-service status might signal or lead to much greater autonomy, even independence, for the Force, potentially opening to the door to radical changes in China's nuclear force structure and posture, and in turn in policy and strategy. Despite the insistence of the Chinese leadership, media outlets, and expert community that the reforms will not bring about change for China's nuclear strategy and weapon program, change, even major change *is* a possibility.

Some analysts have stressed that despite important similarities with the SAF, official characterizations of the PLARF seem to point to a much more expansive role and greater expectations for the new Force.<sup>34</sup> They explain that at the PLARF's inauguration ceremony in December 2015, Xi Jinping articulated a new formulation for the Force's strategic requirements, arguing that it needs to "possess both nuclear and conventional [capabilities]" and be prepared to conduct "comprehensive deterrence and warfighting" operations. While, as mentioned earlier, the requirement to possess both nuclear and conventional capabilities is not new, the emphasis on "comprehensive deterrence and warfighting" is, they opine, significant because it suggests that the

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<sup>29</sup> *The Science of Military Strategy* (Beijing, China: Chinese Academy of Military Science, 2013).

<sup>30</sup> Huang Jinxin, "My Views on the Rocket Force as a Strategic Military Service," *Rocket Force News*, Jan. 13, 2016.

<sup>31</sup> Interviews conducted by the author, Beijing, China, August 2018.

<sup>32</sup> Discussions held at the track-1.5 "U.S.-China Strategic Nuclear Dynamics Dialogue" on Maui, Hawaii, April 2018.

<sup>33</sup> Logan, *op. cit.*, pp. 418-419. See also Logan, "Career Paths in the PLA Rocket Force: What They Tell Us," *Asian Security*, Jan. 25, 2018.

<sup>34</sup> Bates Gill and Adam Ni, "The People's Liberation Army Rocket Force: Reshaping China's approach to strategic deterrence," *Australian Journal of International Affairs*, vol. 73, no. 2, Jan. 2019, notably, pp. 162-163.



PLARF now needs to be able to operate not only across different regions and distances, but also across land, sea, aerospace, and electromagnetic spectrums, and do so both for deterrence *and* warfighting purposes. The fact that President Xi added that the PLARF should enhance its ability for “strategic balancing” (obviously of the United States) also suggests that Beijing might envision a much greater role for the Force, including of its nuclear components.

If this assessment is correct, faster growth of the Chinese nuclear arsenal could be in the works. China might also decide to adopt a much more aggressive nuclear posture, including the peacetime mating of warheads, an increase in alert status, endorsement of an LOW posture, and abandonment of the longstanding NFU policy and traditional practice of minimum deterrence. These are steps that some PLA officers (so far a minority) have recommended occasionally.<sup>35</sup> Significantly, in the context of mounting tensions between Washington and Beijing (notably after the release of the U.S. *Nuclear Posture Review* in February 2018 and the U.S. *Missile Defense Review* in January 2019), some Chinese officials and PLA officers—still a small minority—have been reportedly “quite active” in lobbying Beijing to implement changes of that sort.<sup>36</sup>

Should such changes be implemented, China’s nuclear doctrine and forces would be much more closely aligned with the country’s conventional doctrine and forces. In other words, they would have both a deterrence and a warfighting mission. Presumably, nuclear and conventional forces would also be (further) integrated and PLARF as well as emerging PLAN and PLAAF nuclear assets would become active, rather than passive, components of China’s evolving integrated strategic deterrence posture. Such integration could even be further enhanced through coordination with the new PLA Strategic Support Force, an independent branch (and a product of the ongoing military reforms) which, as two analysts have described it, is intended to “create synergies between disparate information warfare capabilities in order to execute specific types of strategic missions that Chinese leaders believe will be decisive in future major wars.”<sup>37</sup>

In these circumstances, it is even possible to envision that C3 systems over China’s nuclear forces be relaxed or that the CMC even end up abandoning its role of command authority altogether. Beijing and the PLA could choose to give some authority to the theater commands to make nuclear use easier in the event of a crisis or war, which, of course, would amount to a 360-degree departure from China’s traditional nuclear policy and strategy.

### The way forward

It is too early to tell whether the military reforms will, as Chinese authorities and strategists claim, lead to continuity rather than change for China’s nuclear strategy and weapon program. Yet it is important to keep in mind that even if the balance does tip in favor of the “continuity scenario,” some degree of change *will* take place, probably sooner rather than later. This is virtually guaranteed, at least for three reasons.

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<sup>35</sup> Discussions held in various track-1.5 and track-2 forums. See also Gregory Kulacki, “China’s Military Calls for Putting Its Nuclear Forces on Alert,” Report from the Union of Concerned Scientists, Washington, DC, Jan. 2016.

<sup>36</sup> Interviews conducted by the author, Beijing, China, March 2019.

<sup>37</sup> John Costello and Joe McReynolds, “China’s Strategic Support Force: A Force for a New Era” in Saunders et al., *op. cit.*, p. 438.

First, there is almost no doubt that the Chinese nuclear arsenal will continue to grow. The question is not whether it will grow, but how fast, and how big it will become. Speculations abound. For instance, U.S. Senator Jim Risch (R-Idaho), chairman of the Senate Foreign Relations Committee, recently stated that “Reports indicate China is on track to double its nuclear stockpile over the next decade.”<sup>38</sup> Lieutenant General Robert Ashley, director of the Defense Intelligence Agency, went further, indicating that “Over the next decade, China is likely to *at least* [emphasis added] double the size of its nuclear stockpile.”<sup>39</sup> Independent experts, however, have expressed skepticism about these predictions.<sup>40</sup> Others, for their part, have assessed that Beijing may be aiming to build an arsenal of, or close to, 600 warheads because it would be consistent with Chinese fissile material stocks.<sup>41</sup> Still, while this is difficult (perhaps even impossible) to predict the future size China’s nuclear arsenal with accuracy, there is at least broad consensus among experts that, as two analysts have put it:

Although China’s nuclear arsenal is far smaller than that of Russia and the United States, the growing and increasingly capable Chinese nuclear arsenal is pushing the boundaries of China’s “minimum” deterrent and undercutting its promise that it “will never enter into a nuclear arms race with any other country.”<sup>42</sup>

Looking ahead, that makes it difficult for Beijing to continue to remain silent about the current and future size and shape of its nuclear forces and activities. Plainly, China will likely have to become more transparent and possibly abandon its traditional practice of opacity.

Second, it will become increasingly difficult for China to maintain its longstanding nuclear policy and strategy as is because of the rapid and impressive modernization, diversification, and expansion of its nuclear forces, especially the emergence of a nuclear triad. Even if Chinese officials do want continuity, they most likely will have to, at a minimum, *adjust* the country’s policy and strategy, de facto or in more real, measurable ways. They have already begun to do so: they have worked hard, as mentioned earlier, to reconcile possible adoption of an LOW posture with China’s NFU policy; many experts question whether it is a tenable position. Discussions in track-1.5 and track-2 dialogues also suggest that Chinese strategists are well-aware that technological developments will begin to loom large on China’s policy and strategy and that, looking over the horizon, some degree of change is probably unavoidable. For instance, when describing the likely impact of technological developments, Chinese strategists, of late, have been careful to stress that the “broad contours” of China’s policy and strategy will not be affected.<sup>43</sup>

Third, it is highly unlikely that the modernization, diversification, and expansion of Chinese forces, which, significantly, are taking place at a rapid pace, will not create at least some complications

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<sup>38</sup> Chairman Risch Opening Statement, Hearing on Future of Arms Control Post-INF Treaty, United States Senate Committee on Foreign Relations, Washington, DC, May 15, 2019.

<sup>39</sup> Lt. Gen. Robert P. Ashley, Jr., Remarks at the Hudson Institute on “Russian and Chinese Nuclear Modernization Trends,” Washington, DC, May 29, 2019.

<sup>40</sup> Hans M. Kristensen, “DIA Estimates for Chinese Nuclear Warheads,” Report from the Federation of American Scientists, Washington, DC, May 31, 2019.

<sup>41</sup> Therese Delpech, *Nuclear Deterrence in the 21<sup>st</sup> Century: Lessons from the Cold War for a New Era of Strategic Policy* (Santa Monica, CA: RAND Corporation, 2012), p. 120.

<sup>42</sup> Hans M. Kristensen and Matt Korda, “The Pentagon’s 2019 China Report,” *op. cit.*

<sup>43</sup> Discussions held at the track-1.5 “U.S.-China Strategic Nuclear Dynamics Dialogue” in Beijing, China, June 2016.

for C3 systems, even if control is maintained by the CMC. In other words, over the next few years, business-as-usual is not in the cards for China's nuclear C3 systems: Beijing and the PLA will have to make important adjustments.

In sum, while the jury is still out regarding what the reforms have in store for China's nuclear strategy and weapon program, one thing is clear: Beijing is reaching a crossroads and will soon have to make decisions to, at a minimum, adjust many of the features that have been central to its approach to nuclear weapons since 1964. As suggested earlier, Chinese authorities would have reached that decision point regardless of the reforms. The question is whether the reforms will trigger radical change or slower, more managed change. Much of it will likely depend on how the reform process proceeds, notably who "wins" the growing inter- and intra-service competition, which is reportedly becoming "extremely severe" because "everyone is competing for Xi's ear."<sup>44</sup>

Irrespective of what happens (and to some extent, how it happens), it is important to keep in mind that the outcome can be positive. Chinese nuclear forces may end up more reliable and more survivable, which could help strengthen strategic stability. A negative outcome is also possible, however: Chinese decisions and developments may fuel competition and lead to arms-race instability or, worse, crisis instability and the overall deterioration of strategic stability.

### **Recommendations for the U.S. government**

This analysis leads me to make the following four recommendations for the U.S. government:

1. Invest to maintain deterrence of China and extended-deterrence commitments to allies.

Because advances in the modernization, diversification, and expansion of China's nuclear and conventional arsenal will present new deterrence complexities and challenges, both to the U.S.-China strategic relationship and to China's deterrence of U.S. allies, Washington should keep pace with these developments and craft strategies to deter Beijing effectively and provide an adequate security umbrella to its allies. In other words, as recommended in the 2018 *Nuclear Posture Review*, Washington should develop deterrence strategies appropriately *tailored* to China as Beijing is adapting its military forces.<sup>45</sup>

It is true that, on the one hand, a stronger Chinese arsenal may strengthen strategic stability. Yet, on the other, China's ability to deter the United States and its allies more effectively may embolden Beijing to act more aggressively up to, and perhaps even at, the nuclear level. Washington, therefore, should maintain and modernize its own deterrence capabilities at all rungs of the escalation ladder, and discuss and coordinate strategy implementation with its allies.

Given China's growing and diversifying array of nuclear and strategic conventional capabilities as well as its leverage of the space and cyber domains, the United States and its allies should focus on enhancing defensive and offensive countermeasures in all these areas. The goal should be not only to deter attacks, notably nuclear attacks, but also to strengthen U.S. and allied ability to preempt, eliminate, and defend against acts of aggression. This requires, of course, that the United

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<sup>44</sup> Discussions held at the track-1.5 "U.S.-China Strategic Nuclear Dynamics Dialogue" on Maui, Hawaii, April 2018.

<sup>45</sup> *Nuclear Posture Review* (Washington, DC: Department of Defense, 2018), notably pp. 31-32.

States be in sync with its allies not only about its assessment of the “China threat,” but also about what responses are most appropriate, how they should be made, and by who.

## 2. Create the conditions for U.S.-China strategic nuclear dialogue to begin now.

Washington should make every effort to encourage Beijing to engage in bilateral strategic nuclear dialogue expeditiously. Launching such dialogue, which, as mentioned earlier, the United States has long sought (and which remains a goal of the 2018 *Nuclear Posture Review*), would be timely to help Washington better understand China’s nuclear decisions and developments in the context of its ongoing military reforms.<sup>46</sup> Beijing, for its part, would gain a better understanding of U.S. nuclear policy and actions. The hope is that this would help Washington and Beijing develop a framework to allow for a more stable and more predictable strategic nuclear relationship. To the extent possible, seeking to insulate the bilateral strategic nuclear relationship from the increasingly competitive nature of broader U.S.-China relations should be a priority.

Of course, launching such dialogue will be possible only if concessions are made on both sides. Washington would need to acknowledge what has long been the case (and the primary sticking point for Beijing to accept dialogue): that China possesses a credible nuclear deterrent, i.e., that the United States and China are in a mutually-vulnerable relationship.<sup>47</sup> Beijing, meanwhile, would need to accept (or be made to understand) that despite disparities between the U.S. and Chinese arsenals, it has reached a point where it can no longer be considered a “responsible nuclear-weapon state” or seek a “constructive nuclear relationship” with Washington *and* reject dialogue.<sup>48</sup> Especially if the United States concedes on mutual vulnerability, China would need to be convinced that it would lose more if it still refused to engage.

## 3. Lead on arms control.

Leading on arms control begins by not letting the entire arms-control architecture collapse. In other words, it means that Washington should pursue extension of New START, which is set to expire in February 2021. This should be a no-brainer not only because it is both in U.S. and Russian interests (and because Moscow has already expressed interest in extending the Treaty), but also because failure to do so would signal to Beijing that Washington and Moscow can now operate, and potentially perfect, their large nuclear forces unconstrained.

Because Chinese strategists have for years stressed that arms control between the United States and Russia has a positive impact on international stability and China’s security specifically, the collapse of New START could, in theory, push Beijing toward strategic nuclear dialogue with the United States, especially if the alternative would be unrestrained competition with a much more

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<sup>46</sup> *Nuclear Posture Review*, *op. cit.*, p. 7.

<sup>47</sup> Acknowledgement of mutual vulnerability with China would come with some risks. It could, in theory, embolden Beijing to act more aggressively at the conventional level. It is unlikely, however, especially if such acknowledgement is made, as it should be, with the explicit goal of opening strategic nuclear dialogue, i.e., easing tensions.

<sup>48</sup> These are buzzwords often used by Chinese strategists, notably in track-1.5 and track-2 dialogues. See Ralph Cossa, Brad Glosserman, and David Santoro, “A Realistic Way Forward for the U.S.-China Strategic Nuclear Relationship”: A Conference Report of the 11<sup>th</sup> China-U.S. Strategic Nuclear Dynamics Dialogue,” *Issues & Insights*, vol. 18, CR1, Beijing, China, Jan. 2018, pp. 2, 6.

powerful nuclear contender.<sup>49</sup> This is unlikely, however. Rather, as one Chinese strategist has explained, the end of New START may not, in and of itself, drive China to implement radical changes to its nuclear strategy and weapon program, but that could well happen depending on U.S. actions after Treaty's demise, with negative consequences for strategic stability.<sup>50</sup> At a minimum, he argues, the collapse of New START would comfort Beijing's belief of the strategic necessity of its traditional practice of opacity as well as its skepticism about arms control more generally.

There is another reason why extending New START is important: because it would give time to open discussions about confidence-building measures and arms control at the multilateral level, i.e., with other nuclear-armed states.<sup>51</sup> Such discussions, which should build on the preliminary work conducted by the P-5 since 2010, are essential to engage China. Of late, Chinese strategists have stressed in track-1.5 and track-2 dialogues that while Beijing worries mostly about the United States, it now also has to take into account "other nuclear-armed states."<sup>52</sup> This reflects the fact that when it comes to defense planning, China must look east, to the United States, but also north and increasingly south, i.e., to Russia and India, and what's more, China must factor in the increasingly sophisticated North Korean nuclear arsenal. Improving the U.S.-China strategic nuclear relationship, in other words, cannot happen solely via bilateral engagement; it also has a multilateral dimension.

#### 4. Prioritize crisis management.

Independently of whether or not U.S.-China strategic nuclear dialogue commences, Washington should immediately seek to establish crisis-management mechanisms with Beijing in specific areas. Despite rising tensions between Washington and Beijing since 2012, some crisis-management mechanisms have been set up in recent years, suggesting that progress *is* possible. A 2014 memorandum of understanding, for instance, led to the establishment of two bilateral military-to-military mechanisms, one setting rules of behavior for safety in air and maritime encounters, the other requiring advanced notification of major military activities.

More mechanisms of that sort are needed, notably ones that focus on preventing escalation to the nuclear level. In that spirit, defining "rules of the road" for nuclear, space, and cyber domains and the interplay between them could help prevent misunderstandings during crises or during the early stages of conflict, thereby avoiding "nuclear war by accident." Significantly, the track-1.5 "U.S.-China Strategic Nuclear Dynamics Dialogue" has developed a memorandum on these issues, which Washington could use as a starting point to engage Beijing.<sup>53</sup> This is an initiative that Washington should prioritize, especially given the progress that each are making toward integrated strategic deterrence.

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<sup>49</sup> Vince Manzo, *Nuclear Arms Control Without a Treaty? Risks and Options after New START* (Washington, DC: CNA, 2019), pp. 103-104.

<sup>50</sup> Tong Zhao, "China in a World with No U.S.-Russia Treaty-Based Arms Control" in Manzo, *op. cit.*, pp. 118-125.

<sup>51</sup> New START extension would constrain U.S. and Russian strategic nuclear forces for five additional years from February 2021, bringing the Treaty's new expiration date to February 2026.

<sup>52</sup> Chinese strategists have begun to voice concerns about "other nuclear-armed states" from the mid-2010s.

<sup>53</sup> For the latest (published) working draft of the memorandum, see Ralph A. Cossa, Brad Glosserman, and David Santoro, "Reaching an Inflection Point? The Tenth China-U.S. Dialogue on Strategic Nuclear Dynamics," *Issues & Insights*, vol. 16, no. 20, Beijing, China, Dec. 2016, p. C-1.