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Hearing on "China's Nuclear Forces"

This written testimony will discuss why China is shifting its nuclear posture.[1] It will begin by highlighting the key elements of China's strategic posture today both in terms of capabilities and "doctrine" to provide a foundation for explaining the drivers behind that. External factors—primarily developments in the United States—and shifting dynamics within China combine to pressure for continued posture changes. Congress should minimize exacerbating these changes, avoid overstating the dangers of them, and work to bolster conventional deterrence in the region.

Key New Elements of China's Strategic Posture

Although we focus significant attention on the change in Chinese nuclear posture, it is worth recognizing that there are some elements of continuity as well. Before discussing the *sources* of the changes, it is important to lay out a baseline of what this analyst sees to be the key aspects of contemporary Chinese nuclear posture.

There are important continuities in Beijing's approach to strategic affairs that should not be ignored. First, China has long focused on ensuring that it has the ability to retaliate if ever struck with nuclear weapons; this is often called an "assured retaliation" posture. While the specific force requirements for this change given a potential adversary's own capabilities (both conventional and nuclear), the underlying logic can remain constant. Second, China perceives the nuclear arms race between the USSR and United States to have been both dangerous and a costly waste of resources. As such, China is reluctant to engage in such competition today. Finally, the People's Liberation Army (PLA) has a long tradition of opacity and ambiguity regarding strategic affairs. As with all countries, specifics about nuclear weapons are highly classified. But in the context of China's authoritarian restrictions on politically sensitive speech and China's small (relatively) arsenal, these elements are particularly strong.

Other areas of contemporary strategic posture have undergone more substantial change. As discussed in other panels, the land-based leg of China's nuclear force has significantly expanded and modernized. The development of road-mobile, solid-fueled systems that can reach the United States (DF-31A, DF-31AG, and soon, the DF-41) has greatly enhanced the survivability of China's forces, but also raises new challenges for the PLA with regard to command and control. More accurate missiles across both conventional and nuclear forces and at different ranges provide new capabilities but also require new intelligence, surveillance, and reconnaissance capabilities to be utilized to their full potential. Multiple, independently targetable reentry vehicles (MIRV) have finally joined the PLA-Rocket Force's (PLARF's) inventory in the DF-5B and (soon) the DF-41. While this increases warhead size, it also creates new vulnerabilities (particularly for the silo-based and liquid-fueled) DF-5B.

Other developments also pose new dangers. For the first time, in the last decade China possesses a viable sea-based nuclear force. This creates new potential threat axes for potential adversaries and may be relatively survivable (although this depends heavily on the nature of the adversary).

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[1] This testimony represents the views of this author and do not necessarily align with the official views of the Department of Defense or other parts of the U.S. government. For a more detailed articulation of these views, see this author's chapter: "China's Nuclear Doctrine and Deterrence Concept," in Paul Bolt and James Smith, eds., *China's Strategic Arsenal: Worldview, Doctrine, and Systems* (Washington, DC: Georgetown University Press, 2021).

Even more than with the road mobile systems, it poses significant new command and control challenges for Beijing. Additionally, China is rounding out a triad of nuclear delivery capabilities with the addition of an—as yet, vague—role for its air force. Finally, more niche capabilities are important as well, such as various altitudes of missile defense systems, hypersonic weapons systems that can overcome missile defenses, increased strategic ISR capabilities, and continued development of capabilities that militarize outer space.

Emerging New Elements in China's Strategic Thought

As China deploys the new capabilities discussed above, and shaped by the internal and external drivers discussed below, there are signs that China's strategic thought is also undergoing some change. While far short of repudiation of China's NFU slogan, these steps are nevertheless disconcerting. It should be noted that in most cases, China is moving its policy closer to that of the United States and Russia (and historically the USSR).

Two elements of conventional doctrinal evolution are paramount in today's PLA: enhancing joint operations and deepening use of information technology (or "informationalization"). While neither center on strategic, nuclear affairs, both will have implications for it. The creation of a joint structure within the newly created "theater commands" includes, unsurprisingly, representatives from the PLA-RF. This will inevitably increase thinking within the PLA-RF about potential contributions to any conflict. While most of that will be PLA-RF conventional contributions, it seems unlikely that it would be limited to that. Reforms to enhance informationalization includes PLA-RF force. By creating more flexible command and control and deepening ISR capabilities, this initiative will open new doors for a responsive PLA-RF contribution.

Other areas of Chinese strategic thought are also evolving. Four broad baskets include conventional strikes on strategic assets, the potential to develop a launch on warning capability, various elements of transwar deterrence, and a broad contribution of strategic systems to China's status. Each is discussed in turn.

It has become quite clear that the Chinese are signaling that a conventional strike on nuclear assets (and potentially nuclear command and control) would be grounds for nuclear retaliation. Indeed, this is not surprising; the United States and Russia hold similar views. However, coupled with the deliberate intermixing of conventional and nuclear capabilities, this suggests that the Chinese are trying to find new ways to get some advantage from their nuclear force. The DF-26 was deliberately designed to be easily switched from carrying a nuclear and a conventional asset. This is almost certainly intended to complicate U.S. targeting decisions against a weapon that could either hold a carrier battle group at risk, or destroy Tokyo. (The U.S. engaged in similar co-mingling of nuclear and conventional forces throughout the cold war, and arguably does today). China feels under no obligation to take steps that facilitate an expansive U.S. precision guided munition attack on its key A2/AD assets, its ballistic missile force. Further, given the ambiguity over what constitutes a strategic target, this raises other challenges as well.

There are several signs that China is moving away from a traditionally very relaxed view on the pace of its retaliation. We see discussions among experts that a launch on warning posture does not violate a NFU (since the U.S. or other adversary would have launched a nuclear weapon, constituting "use" of some sort). The PLA-RF has touted its ability to respond quickly, under fire; this is a contrast to traditional Chinese approaches. Increased Chinese ISR capabilities are enabling some situational awareness that might support such a shift. We see both increased calls for ISR from the PLA-RF, nascent development of such capabilities in outer space, and this aligns with the broader trend toward informationalization. Again, this—launch on warning— has long been U.S. and Russian policy, but is new for the Chinese.

Third, there are a group of discussions with regard to using nuclear weapons to stem escalation that have recently emerged. Discussions of distinct waves of retaliation suggest new thinking about controlling nuclear escalation. Writings about optimizing choices made about the scale of those different changes highlight the depth of engagement with those issues. The accuracy of Chinese weapons has increased over time. While bureaucratic politics probably contributes to this development to some extent, the effect is to give Chinese nuclear weapons capability against counter force (both conventional and nuclear) targets in ways that only make sense in a warfighting context. And finally in this vein, there are a few spare references in Chinese writings regarding the PLA's nuclear arsenal deterring at least intense conventional wars. Again, thinking about reestablishing deterrence is not unique to the Chinese; this was a centerpiece to U.S. thinking throughout the cold war.

Finally, there are some signs that there is a limited, but not absent, role for China's strategic capabilities in its national identity as a major global power. Again, as noted repeated above and as is clear from the size of the PLA arsenal, nuclear weapons are not central to China's advancing its national interests in contested territory near its shores, protecting its economic interests further afield, nor in promoting alternative norms of governance and developmental models in international institutions. Nevertheless, Chinese leaders have started to talk of broad (and vague) ways that its nuclear arsenal helps ensure its core interests and advance its status as a great power.

External Drivers

So what accounts for this pattern of change and continuity in China's strategic posture? Several external drivers play important roles.

Foremost among them are developments by the United States (and its allies). Most important of these is the continued deployment of advanced missile defenses. Continued refinement of the ground based interceptors in Alaska (and California), the joint development of the SM-3 block IIA system with Japan, and exploration of multi-object kill vehicles all pose threats to China's ability to retain an assured retaliation capability, or more particular to deter a potentially disarming first strike by the United States. From the perspective of a conservative defense planner in Beijing, one might assume that noisy SSBNs are sunk early in a conflict, fixed silo based systems destroyed with conventional weapons, warhead depots similarly destroyed, and garrisons of mobile systems hit with a small number of nuclear weapons. The "over a hundred" warheads that the U.S. worries can target CONUS might rapidly be degraded to a dozen (i.e., just any surviving, alerted/pre-scattered DF-31As). These would need to run the gauntlet of sixty

GBIs and however many SM-3s are deployed on the seventy-odd Aegis capable destroyers in the U.S. Navy.

The United States also appears to Beijing to be lowering the nuclear threshold (e.g., deploying a low yield W76-2) while continuing to strive to dominate the ladder of escalation through an expensive recapitalization of its main nuclear force. There is also a broad sense, particularly given the previous administration's anti-China rhetoric, that the United States opposes China's rise in general and wants to deny it a natural place as a leading power in Asia.

Under what scenarios might this set of concerns be relevant? Most worrisome for Beijing would be a Taiwan scenario, where China worries that US will respond to increasing conventional challenges in the way we planned to in the Cold War: by crossing the nuclear threshold first, early in the war.

Beyond these concerns about the United States, China faces regional competitors in the strategic arena as well. India is particularly salient. If the United States worries about the growth of China's arsenal to 5 percent of its today, and perhaps 10 percent of the U.S. arsenal at the end of the decade, how should China view India, which already has 75 percent of China's arsenal? When India first tested in 1998, its defense minister explicitly flagged China as a potential adversary. Obviously, the recent deadly battles along their contested border have amplified this sense of security threat.

Further, it is objectively the case that China has three other nuclear powers on its borders: Russia, North Korea, and Pakistan. Its relations with each vary in comity today, but cannot be assumed away as security concerns even in the short term. At the very least—and despite rhetorical/costless support expression between Russia and China today—the vast Russian arsenal requires China to ensure it has a strategic nuclear insurance policy to ensure that does not provide Moscow coercive leverage on issues where the two sides' interests diverge (Central Asia seems most relevant in that regard). Beyond that, nascent and latent programs in South Korea, Japan, and—most worryingly—in Taiwan, further complicate the simple geometry of bilateral strategic competition with the United States.

Internal Drivers of Changes in Chinese Strategic Posture

While these factors are all clearly important to Beijing's thinking, and indeed resonate with how traditional realist political science thinkers would analyze the problem, there are other factors—unique to China—at play.[2]

The legacy of Chinese strategic thought on these issues serves as a continued restraint on the scale of change. As noted above, the desire to avoid the unproductive excesses (from Beijing's perspective) of Cold War arms races loom large. Chairman Mao's portrait remains enshrined above the entrance to the traditional imperial palace: so too do his utterances on nuclear policy,

[2] On such traditional approaches, see Kenneth N. Waltz, *Theory of International Politics* (McGraw-Hill Publishing, 1979) and John J. Mearsheimer, *The Tragedy of Great Power Politics*, Updated Edition (New York: W. W. Norton & Company, 2014).

the "no first use" policy. While no serious strategist would take such declaratory propaganda as constraining in a serious crisis, it is clear that in many ways China's nuclear weapons posture and development in peacetime have been and remain guided by this totem. To justify this point a bit further, how else should we understand the fact that while China has 70 percent of the U.S.'s GDP and the largest population in the world, it has an arsenal smaller than France and about the same size as Britain? Certainly, the legacy of history contributes in some way to this extreme anomaly.

Beyond that, there are other worrisome influences. Two stem from organizational politics of the PLA-RF as an institution.[3] Conventional missile forces are central to how China prepares to conduct operations along its periphery against advanced powers like the United States and its allies. These systems would be used heavily and early in any such conflict, in a quite offensive fashion. This is quite different from the way that China has traditionally thought about its nuclear forces. However, given that the officers move back and forth across the force, it is likely this leads to some desire to think about how China's nuclear forces might be used in less traditional ways.[4]

Second, in general, we know very little about how budgetary priorities are assessed and comparative prioritization conducted. There is a remarkable consistency within defense budgets as a percent of GDP or of government spending in China across time. However, beginning in the Hu Jintao period, the PLA-Navy was clearly getting a larger share resources within the budgets. It is likely that given the steady elevation of what is now called the PLA-Rocket Force in institutional heft has also given it greater voice in internal debates over priorities. That likely will lead to some added budgets, but also more of a voice in shaping doctrine.[5] Coupled with the above, this is more grounds for concern.

Recommendations

The situation describe above should be unsettling. China, in response to external pressures and following its own internal incentives, is developing new capabilities and strategic approaches that threaten strategic stability and increase the prospects of unthinkable nuclear exchanges. A few recommendations seem warranted based on the analysis above.

First, the United States should recognize that China views Washington through a competitive lens, and that security dilemma dynamics can be hard to avoid. At the very least, avoiding excessively confrontational language in this area makes sense. Much of what China is doing that we regard as destabilizing in this area has been done for decades by the United States. Our pleas that "we have to do it to assure allies" ring hollow to Beijing, who see those allies as threats. The policy recommendations in Title V (Ensuring Strategic Stability) of the Strategic Competition Act should be more modest. Demanding trilateral arms control will not get

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[3] Eric Heginbotham, Jacob L. Heim, and Christopher P. Twomey, "Of Bombs and Bureaucrats: Internal Drivers of Nuclear Force Building in China and the United States," *Journal of Contemporary China* 28, no. 118 (July 4, 2019): 538–57, https://doi.org/10.1080/10670564.2018.1557945.

[4] David C. Logan, "Career Paths in the PLA Rocket Force: What They Tell Us," *Asian Security* 15, no. 2 (May 4, 2019): 103–21, https://doi.org/10.1080/14799855.2017.1422089.

[5] Organizations want budget and autonomy the world over.

anywhere. Much lower aspirations might. The preamble language in that section smacks of hypocrisy (launch on warning, co-mingling, and developing a triad are all U.S. strategies as well).

Second, Congress should recognize that the nuclear recapitalization program will exacerbate Chinese fears about the United States using nuclear coercive leverage in the future. A careful evaluation of ways that we can minimize that are warranted. Both the low yield W76-2 and specifics of ICBM programs would seem prime candidates for added scrutiny. That said, unilateral concessions are unlikely to result in sustained progress on this issue, leading to the next point.

Third, Congress should strongly support continued efforts by the US government to engage the Chinese on this issue set. Of course, diplomacy requires a partner, and the Chinese are reluctant to engage here. But Congressional restrictions in the FY2001 NDAA complicate engagement on the U.S. side as well. Further, whole-of-government treatment of China as an adversary complicate diplomacy. While acknowledging the challenge posed by the CCP's deep talons throughout Chinese society, viewing all exchange through a security lens overstates the degree of that control.

Fourth, given the centrality of missile defense to Chinese concerns, Congress should—at the very least—avoid pushing the executive branch to promote missile defense as a response to Chinese or Russian developments. As former MDA head VADM Syring once noted, that is a losing arms race from Washington's perspective. Missile defense is costly relative to missile offense. China will win that economic contest. Instead, Congress should push the executive to emphasize the role of missile defenses for second tier threats, while finding ways to engage China (and Russia) on missile defense. The prospect of drawing China into any trilateral arms control discussion in the absence of missile defense being on the agenda is negligible.

Finally, Congress should pressure DOD and DSCA to strongly promote more survivable A2/AD abilities in arms sales for Taiwan, rather than showy (and constituent job promoting) F-16Vs. By enhancing conventional deterrence by denial capabilities, we reduce the need to rely on nuclear deterrence by punishment strategy in the main scenario this analyst can see raising significant nuclear escalatory prospects.