

Nuclear weapons, deterrence and great power competition

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“Great power competition” is one of the defining characteristics of the contemporary strategic environment, both globally and in the critically important Indo-Pacific region. Part of this condition is a return of nuclear weapons and nuclear strategy to prominence in international security policy and debate. What makes this more worrying is that nuclear complexities and technological change (like the development of hypersonic missiles and ballistic missile defences) are outpacing the ability of existing arms control regimes to manage nuclear weapons within competitive inter-state relationships.

A clear expression of this dynamic in recent years was the [refusal](#) of the US under the Trump Administration to renegotiate the New START Treaty (NST), with the view that it should include the People’s Republic of China (PRC) as well as Russia and the US. The lines between nuclear and conventional deterrence have also become blurred, especially given the [emergence](#) of “escalate-to-de-escalate” nuclear doctrines, most notably in the Russian Federation. This has retied nuclear weapons to conventional war-fighting capabilities, with the logic that the first state to use (or threaten to use) nuclear weapons obtains a strategic edge. At a time when Europe is experiencing its first land war since World War II, and Russian nuclear sabre-rattling has hit a peak – notably including [threats](#) to inundate the UK with a radioactive tsunami – the current security situation is beginning to look more like the tense environment characteristic of the Cuban Missile Crisis than the managed deterrence of the post-Cold War era.

Given that the defining feature of the twenty-first century nuclear security environment is complexity and fluidity rather than stability, what roles are each of the major nuclear weapons states (NWS) playing in the process? Is nuclear deterrence still feasible under these conditions? And what do they see as the main threats and opportunities in the nuclear domain? In this edition of the *Looking Glass* we assess the postures of the three main nuclear powers in the twenty-first century – the US, Russia and the PRC – in order to try and shed some light on these questions.

The United States and nuclear weapons: from international to national security (and back again)?

The standard interpretation of the effect of the “[nuclear revolution](#)” on great power politics during the Cold War was that nuclear weapons restrained US-Soviet conflict to manageable levels through mutual deterrence. Yet this [interpretation](#) does not necessarily [explain](#) why the US sought quantitative and qualitative superiority over the Soviet Union (and other NWS) or to limit horizontal proliferation. Explanations for this arguably lie in the broader and more ambitious objectives of American grand strategy since 1945 to “de-volatize” international politics through establishment of American primacy. This entailed not only the containment of outright adversaries (e.g. Soviet Union) but also the management of the independent capabilities of allies.

The purpose envisaged for the American nuclear arsenal by successive administrations was therefore as an instrument to underpin not just American national security but by extension international security. Here, the central assumption [was](#) that “unchallenged US military power underwrote global security commitments, dampened long-standing rivalries in key regions and gave Washington immense diplomatic leverage”.

It is therefore not surprising that nuclear weapons retained a central place in US national security policy after the end of the Cold War. But in the immediate post-Cold War decade American nuclear strategy and policy was arguably [focused](#) not primarily on the threat posed by other major powers’ nuclear arsenals but rather on the prospect of “rogue” states such as Iraq, Iran, Syria or North Korea acquiring WMD capabilities (nuclear, chemical and biological weapons). This added weight to arguments on the necessity of retaining the US nuclear arsenal, as well as the [development](#) of new capabilities and roles for it.

These trends were further underlined with the attacks of 9/11. Concern that “rogue states” would either be tempted to use nuclear weapons or pass them to terrorists eroded the George W. Bush administration’s belief that a traditional conception of deterrence was enough to ensure American national security. This resulted in shifts in nuclear doctrine that made nuclear weapons more important in American national security policy, with the US [2001 Nuclear Posture Review](#) (NPR) [emphasizing](#) the need to maintain and enhance American “military flexibility” and develop a new “triad” of offensive strike systems. The 2001 NPR also signalled US movement to abandon key institutions of arms control such as the Anti-Ballistic Missile (ABM) Treaty in order to pursue ballistic missile defence (BMD).

Although the Obama administration came to office promising a return to arms control, non-proliferation and nuclear disarmament, it nonetheless maintained the need to maintain and modernize the country’s nuclear arsenal. Taken together, the Obama administration sought to strike a balance between its desire to reduce the role of nuclear weapons in American national security policy and maintain its commitments to allies via [emphasizing](#) “that non-nuclear weapons, much more capable of discriminate and proportionate use, would increasingly bear the lion’s share of the country’s deterrent as well as defense needs”.

The administration’s [2010 NPR](#) signaled a major shift in US declaratory policy and nuclear posture by assigning to the US’ nuclear arsenal the “sole purpose” of deterring a nuclear attack by a hostile nuclear weapons state. It also [attempted](#) to balance the objectives of maintaining “strategic deterrence and stability at *reduced* nuclear force levels” and the “strengthening of regional deterrence and reassurance of US allies” via [retention](#) of the traditional triad of SLBMs, ICBMs and heavy bombers and the “possible addition of non-nuclear prompt-global strike capabilities” (i.e. conventionally armed ICBMs or SLBMs). This was also designed to allay the fears of allies that the administration’s stated goal of reducing the role of nuclear weapons in US national security strategy would result in the erosion of the credibility of US security commitments. Simultaneously, however, the continued development of such non-nuclear capabilities as BMD and “[Prompt Global Strike](#)” (PGS) were viewed by both [Beijing](#) and [Moscow](#) as potentially threatening to strategic stability in their nuclear relationships with Washington.

The 2010 NPR was also significant for its [emphasis](#) on a “negative security assurance” that the US would not use nuclear weapons against a non–nuclear weapons state that was in “compliance” with its obligations under the Non–Proliferation Treaty (NPT). The effect of this statement was threefold. First, the US [still](#) threatened to use nuclear weapons against nuclear weapons states that are party to the NPT (China, and Russia) if they were to attack with nuclear, biological or chemical weapons. Second, it implied that the US reserved the right to use nuclear weapons against states that were not party to the NPT. Third, as the new policy did not explicitly identify what it meant for a state to be “in compliance” with the NPT, the administration reserved the right to determine for itself what compliance meant.

The Trump administration replaced Obama’s desire to reduce and limit the role of nuclear weapons in favour of increasing the roles that the American nuclear arsenal could play in ensuring the country’s national security interests. The [2018 NPR](#) did this in a number of ways. First, it [broadened](#) the circumstances for potential nuclear use by claiming nuclear weapons could be used in response to any actor that “supports or enables terrorist efforts to obtain nuclear devices”, or in response to “significant non-nuclear strategic attacks” that included attacks on “civilian population or infrastructure”. Second, with respect to extended nuclear deterrent commitments, the NPR claimed that “no one” should doubt its commitments and capabilities to provide it – a claim that sat uncomfortably with President Trump’s frequent criticism of US alliances. Third, the NPR demonstrated a disdain for previous American commitments to arms control by [reserving](#) the right to “resume nuclear testing if necessary to meet severe technological or geopolitical challenges”.

In terms of force structure the Trump NPR called for the development of a “flexible and tailored” modernized nuclear arsenal. “The United States”, it [asserted](#), “will sustain and replace its nuclear capabilities, modernize NC3 [nuclear command and control and communications], and strengthen the integration of nuclear and non-nuclear military planning”. This emphasis on “flexibility” [was](#) to be “facilitated by a greater-than-ever reliance on “dual capacity” weapons—especially new or modernized cruise missiles launched by fighter-bombers or submarines, with either (or both) nuclear or non-nuclear warheads”. The

desire for “flexibility” not only framed the commitment to modernize and replace the existing nuclear triad – at the cost of approximately \$US1.25 trillion over 30 years – but also to develop new types of warheads, particularly “low-yield” SLBMs and sea-launched cruise missiles (SLCMs).

Finally, the Biden administration [appears](#) set to walk back some of its predecessor’s positions on nuclear posture and modernization and reflects some of President Biden’s [long-held](#) views on the role of nuclear weapons in US national security policy. While some have speculated that Biden’s NPR would present a “no first use” (NFU) declaration (i.e. the US would only consider use of nuclear weapons in response to a nuclear attack), the public [factsheet](#) of the still classified NPR provided by the administration on 29 March 2022 indicates a NFU declaration will not be forthcoming. Instead, the President’s vision for US nuclear strategy is framed by the assumption that “as long as nuclear weapons exist, the fundamental role of U.S. nuclear weapons is to deter nuclear attack on the United States, our allies, and partners” and that the US would only contemplate use of its arsenal “in extreme circumstances to defend the vital interests of the United States or its allies and partners”. However, as Assistant Secretary of Defense for International Security Affairs Celeste Wallander has [clarified](#), this “*does not* apply exclusively to nuclear attack but extends to *extreme circumstances* that would require the United States to defend allies and partners”.

So while the 2018 NPR was [considered](#) to have broadened the circumstances under which the United States would consider using nuclear weapons, the forthcoming 2022 iteration appears to [shift](#) the balance back toward a “commitment to reducing the role of nuclear weapons” and [cancelling](#) new warheads (e.g. SLCM). It also seeks “to emphasize strategic stability” in order to “avoid costly arms races” and “facilitate risk reduction and arms control arrangements where possible”.

The Biden administration therefore appears to be trying to balance its commitment to reduce the role of nuclear weapons in US defence strategy with what its [forthcoming](#) National Defense Strategy (NDS) defines as the nation’s core challenge: countering “the growing multi-domain threat posed by the PRC”. In this context, US nuclear capabilities and posture are seen as necessary for reassurance of allies both in Europe and Asia and as an instrument to deter “aggression” by Russia or China. As a result, the Biden administration is therefore no different to past US governments that regarded a nuclear arsenal as not just an instrument with which to ensure American security, but also as a means of contributing to international security.

Russia’s nuclear arsenal: seeking deterrence and compellence

Russian nuclear doctrine has shifted considerably since the end of the Cold War. During the bipolar era the USSR – unlike the US and NATO – maintained a “no first use” policy for its nuclear arsenal. The general thinking by Soviet strategists was that the significant size of the Warsaw Pact (if not overall their qualitative edge) made it largely unnecessary to use nuclear weapons as a first resort. In terms of other potential nuclear challengers during the Cold War such as the PRC, Moscow relied on a conventional force advantage as well as superior logistics and manoeuvrability. That said, it is obvious that this posture was never tested. Moreover, Soviet [blitzkrieg theory](#) certainly saw an important role for tactical nuclear weapons in the event of a NATO escalation to blunt any large-scale Soviet invasion of Western Europe, with graduated and flexible responses designed to try and retain the upper hand in subsequent attempts at de-escalation. In addition, the Soviet position was complicated by alliance commitments to the USSR’s Warsaw pact allies in Central and Eastern Europe, where there remained significant questions about the nature and extent of Soviet extended deterrence guarantees. Nonetheless, Moscow’s logic in adopting a formal “no first use posture” was that the Soviet Union could clearly communicate its preference for deterrence and arms control as the main mechanisms to manage the US-Soviet nuclear dyad, while retaining the option of altering its position should circumstances make it necessary.

Yet after the collapse of the Soviet Union nuclear weapons came to occupy an increasingly important place in Russian strategic thinking. The primary reason for this, at least initially, was defensive and linked to the degradation of Russian relative conventional capabilities during the 1990s. This made Moscow increasingly reliant on its nuclear arsenal in order to underwrite its territorial integrity against the risk of major power war. Concerned that the Russian armed forces would be unable to withstand a concerted campaign by either NATO or a swiftly modernising PLA, the Russian Federation first moved to a “first use if necessary” [posture](#) in the early to mid-1990s. Then as the extent of its economic dislocation became more apparent Moscow pivoted to a position of “assured first use”: a clear warning to potential adversaries

that a serious threat to Russian sovereignty would be tempered by with the possibility that Moscow would turn to nuclear weapons.

This was again partly due to the continued centrality of nuclear deterrence in Russian strategic thought. Under circumstances where a conventionally weaker Russia faced potential future scenarios in which its armed forces would not be able to deter an attack, a more assertive posture came to assume a more important role, with the logic that it would make would-be aggressors think twice before engaging in conventional hostilities. But the pace and scale of technological change was also an important factor in Moscow's thinking. While it continued to strenuously [resist](#) effort by the US to develop missile defences, arguing that this upset the balance created by deterrence under the START II accords, the effect of gradual deployments of these defensive capabilities by the US throughout the first decade of the twenty first century paradoxically made Russia even more reliant on its nuclear arsenal. Given that the US approach to missile defence was holistic, from theatre-based systems such as Aegis and THAAD; to heavy investment by George W. Bush's administration in sophisticated tracking platforms, airborne lasers and killer satellites, the risk for Moscow was that its nuclear forces [faced](#) the prospect of obsolescence in the face of a fully functioning US National Missile Defence (NMD) capabilities. Even more concerning for Russia was that in addition to undermining deterrence, US missile defences actually made nuclear war *more* likely, providing Washington with a shield behind which it could then strike at the Russian homeland with impunity.

The increasing sophistication of US defences as well as its conventional military capabilities during the early 2000s, sometimes referred to as the Revolution in Military Affairs (RMA), provided an urgent need for Russia to modernise its own military, in which both nuclear weapons as well as their delivery systems formed a key component. The 5 Day War between Russia and Georgia in 2008 over the disputed territories of South Ossetia and Abkhazia were widely regarded as providing the impetus for Russian military modernisation, but the desire to revamp the Russian military had been present for some time earlier. The difference in 2008, however, was that the Russian economy had rebounded following Vladimir Putin's de facto nationalisation of the Russian energy industry. This gave Moscow the wherewithal to [embark](#) on an ambitious \$600 billion program to update its conventional as well as nuclear forces. They [included](#) funds to accelerate production and deployment of the SS-26 *Iskander* short-range nuclear missile system, as well as the Borei-class SSBN which was intended for deployment in the Russian Northern and Pacific Fleets. Russia also covertly developed the SSC-8 ground-based cruise missile system, with a range of 2,500 kilometres, in violation of the Intermediate Nuclear Forces (INF) Treaty. Indeed, it was the [SSC-8](#), in addition to fears that the PRC was developing intermediate nuclear forces that it was under no international legal obligation to curtail, which prompted the Trump Administration to withdraw from the INF Treaty in 2019.

Here it is instructive to note that the modernisation of its conventional forces has not reassured Russian strategic elites of the need to rely heavily on nuclear weapons. If anything, the reverse has been the case. At his 2018 annual address, similar to US State of the Union speeches by American Presidents, Putin unveiled a suite of new nuclear delivery systems in order to showcase Russian military technological prowess. Putin [noted](#) dramatically that "for years nobody listened to Russia. Well listen to us now". These new platforms, swiftly dubbed Putin's "doomsday weapons", [included](#) the Burevestnik cruise missile, a nuclear powered rocket with technically unlimited range; the Avengard hypersonic missile capable of speeds of up to Mach 20 (in other words, fast enough to defeat any Western surface-to-air missile system); the Sarmat ICBM with the capacity to carry 10-15 MIRVs or Avengard glide vehicles; and the Poseidon autonomous undersea drone that can carry a 200 megaton warhead.

Each of these weapons systems serves to highlight the Russian preference that nuclear weapons are a key component of its overall military posture. The Burevestnik, Avengard, Sarmat and Poseidon are all first strike weapons. The Burevestnik, as a nuclear-powered missile, can conceivably be perpetually in flight, significantly cutting the time normally needed to generate nuclear forces (as well as reducing warning times for their targets). The Avengard is specifically designed to overcome US missile defences, and can be mated to either an ICBM or a smaller cruise missile. The Sarmat, a massive nuclear weapons delivery system, is a response to the US development of [Prompt Global Strike](#) weapons that will have the [capacity](#) to deliver a payload anywhere in the world within an hour. And the Poseidon raises the prospect that quiet

and unmanned Russian drone submarines could be [deployed](#) off the coasts of large US cities, with the ability to devastate them at short notice.

Why has Russia become so keen to engage in nuclear brinkmanship? In addition to its relative weakness, the key reason concerns the complex 21st century threat environment that Russia faces. In June 2020 Russia unveiled its new nuclear doctrine, which made a number of amendments to its previous posture. These included non-nuclear attacks that went beyond conventional forces and also incorporated cyber attacks: in the words of the doctrine, this also includes a potential pre-emptive [response](#) to “enemy impact on critically important government or military facilities, the incapacitation of which could result in the failure of retaliatory action of nuclear forces”. The document also [clarified](#) the “escalate to de-escalate” strategy hinted at by Russia since 2015, by [noting](#) that it reserved the right to respond with nuclear weapons in the event of an attack with conventional forces that threatened the “very existence of the state”. In this way, Russia has come to see nuclear weapons as performing a dual function: first, to deter conventional attack by qualitatively superior adversaries; and second, to utilise threats and signal willingness to use nuclear weapons as part of a compellence strategy aimed at forcing hostile nations to acquiesce to Russian preferences and demands.

For Moscow, the challenges of managing nuclear weapons in order not to upset regional strategic balances are less important than the extent to which this is seen as a priority by both the US and the PRC. This is because Russia really only faces two significant nuclear deterrence dyads: Russia-US and Russia-China. Hence its fortunes are much more tied to the effects of Sino-US competition than having a fundamental stake in driving how global order takes shape. If anything, its preferred outcome would be for regional strategic conditions to be as chaotic as possible. This serves its broader agenda in Europe and Asia to try and prevent dominance by any one particular state, but it also assures that nuclear weapons will continue to play an important role in its overall approach to statecraft.

China’s evolving nuclear capabilities and posture

China’s nuclear posture has undergone three significant phases of development since 1949 around Beijing’s perception of the utility of nuclear weapons, its acceptance of non-proliferation norms, and its engagement with the international nuclear non-proliferation framework. The first phase, between 1949 and 1959, saw China “coming to grips” with the [reality](#) of nuclear weapons in terms of their political, military and strategic significance, and [reconciling](#) this with the communist state’s revolutionary worldview. The subsequent 1960 to 1978 period, encompassing the intensive phase of Chinese nuclear acquisition and development program in 1964, saw China opposed to both the Soviet Union and the US. China’s declaratory statements in this period emphasised the right of sovereign states to develop nuclear weapons capabilities for “self-defence” and to break the superpower nuclear “monopoly”. Significantly, from the point of acquisition onward China opposed bilateral US-Soviet disarmament and strategic arms control agreements, and the institutionalisation of the norm of non-proliferation with the conclusion of the NPT. China deemed that its national and security interests would not be served – and could even be harmed – by acceding to such agreements in the face of strategic “encirclement” by the Soviet Union and the US.

The subsequent 1978 to 1991 period, framed by Deng Xiaoping’s return to leadership of the CCP and the collapse of the Soviet Union, saw China gradually [reassess](#) its approach to nuclear weapons, arms control and proliferation, and the international regimes and agreements that had evolved in response to these issues. This process was highlighted in 1984 when China joined the International Atomic Energy Agency (IAEA), beginning a process that would see China become more engaged with, and accepting of, the international nuclear framework. This reflected a realisation that the political, security and strategic benefits significantly outweighed remaining on the “outside”.

The final period, from 1992 to the present, has seen the completion of this process, with China acceding to the NPT as an NWS in 1992 and signing the CTBT in 1996. Since then Beijing has [reiterated](#) its strong support for the non-proliferation regime based on the NPT and IAEA. But it simultaneously pursued a range of activities that ran counter this commitment, including [exports](#) of ICBM and short-range ballistic missile (SRBM) technology and components to a range of states long considered by the United States and others as nuclear proliferation risks (like the DPRK, Iraq, Iran, Saudi Arabia, and Pakistan. China’s

motivations were [based](#) on a desire to generate export earnings from its expanding arms manufacturing sector, and the broader strategic objective of keeping rivals off balance in the Persian Gulf and South Asia.

Beijing released new export control regulations that covered missile technology, chemical weapons precursors and technology, and biological agents in August and October 2002. [Some observers](#) assessed this to be prompted by the events of 9/11, reflecting international concern that WMD technology could be acquired by terrorists, but it also illustrated a desire to improve relations with the George W. Bush administration that had imposed a range of sanctions on Chinese entities suspected of involvement in arms transfers to Iran. Beijing's subsequent [White Paper on Non-Proliferation](#) in March 2003 sought to [downplay](#) China's differences with the United States and highlighted its new export control regime and its agreement to abide by the guidelines set out by the Missile Technology Control Regime (MTCR), even though Beijing was not a member. However, just as China appeared to have accepted the norm of non-proliferation and to demonstrate effort to engage with arms and technology control regimes, the evolution of US nuclear posture and the [emphasis](#) of the George W. Bush administration on "counter-proliferation" efforts outside of the NPT system contributed to Chinese ambivalence on arms control and a desire to continue the modernization of its own nuclear arsenal.

Since the early 2000s China has consistently viewed American force posture developments as especially troubling due to its enduring reliance on a posture focused on maintaining, in [Jeffrey Lewis'](#) phrase, the "minimum means of reprisal" – i.e. ensuring a secure, second-strike capability. The endurance of this posture has been reflected in the modest size of China's nuclear arsenal and ICBM force. As [recently as 2019](#) this stood at approximately 290 nuclear warheads, split between 180 to 190 land-based ballistic missiles, 48 sea-based ballistic missiles, and bombers. China's minimalist approach is also evident in its declared "no-first-use" policy that stipulates China's commitment to only use its nuclear force in response to a nuclear strike.

In contrast to the United States and to some extent Russia, China has relied almost exclusively on land-based ICBMs and intermediate range ballistic missiles under the command of the Second Artillery Force (SAF) to ensure its "second strike" capability, with significant recent efforts to transition from silo-based liquid-fuel missiles to mobile solid-fuel missiles. While the US Department of Defense's 2019 [Missile Defense Review](#) noted that China "can now potentially threaten the United States with about 125 nuclear missiles", one independent assessment suggests that only 80 these missiles "have sufficient range to target the continental United States from their deployment areas in China".

China has also sought to augment its reliance on land-based missiles with [investments](#) in modernizing its bomber capabilities and developing a limited SLBM capability in order to establish a credible nuclear triad. In 2012 the PLA Air Force (PLAAF) was [assigned](#) a "strategic deterrence" mission, prompting speculation that it would soon field nuclear capable cruise missiles on its medium-range bombers and fighter-bombers. Indeed, the US Department of Defense's May 2019 [report](#) to Congress on Chinese military modernization and capabilities noted that China's development of an air-launched ballistic missile (ALBM) – once deployed and integrated into PLA forces – "would for the first time, provide China with a viable nuclear "triad" of delivery systems dispersed across land, sea, and air forces".

Beijing has thus arguably begun to transition away from reliance on its minimum deterrent posture by increasing and modernizing its ICBM force and augmenting it through modernization of its bomber forces and development of SLBM capability to enhance survivability. In terms of [nuclear doctrine](#), while its declared policy around "no-first use" has remained remarkably consistent, its evolving capabilities are opening up new strategic options. This is particularly the case since the elevation of the SAF to a full "service" within the PLA as the PLA Rocket Force (PLARF) on 31 December 2015. The PLARF [is](#) to "possess both nuclear and conventional" capabilities and to conduct "comprehensive deterrence and warfighting" operations. As Bates Gill and Adam Ni [note](#), this "includes a geographic element that requires the PLARF to be able to fight and deter enemies across different regions and distances" and "a domain element that requires the PLARF to conduct operations with effects across land, sea, aerospace and electromagnetic spectrums". The modernization of China's arsenal, emergent nuclear triad and organizational pre-eminence of the PLARF thus [arguably](#) "boosts Beijing's ability to deter the United States and its allies across a wider spectrum of the escalation ladder, up to and including nuclear use, thus possibly limiting American and allied options in an escalating crisis".

As we detailed in the [November 2021 Looking Glass](#), the Pentagon's "[China Military Power Report](#)" of November 2021 assessed that the "accelerating pace of the PRC's nuclear expansion may enable the PRC to have up to 700 deliverable nuclear warheads by 2027" and it may have the intention and it "to have at least 1,000 warheads by 2030". Most notable here has been the expansion of China's land-based ICBM capabilities with [satellite images](#) in July 2021 showing a major effort at construction of new ICBM silo fields in a number of locations; and the [possibility](#) that some of China's ICMB types (e.g. the DF-5B) are capable of being armed with multiple independently targetable re-entry vehicles (MIRVs).

Additionally, the August 2021 test of a [Gliding Fractional Orbital Bombardment System](#) (G-FOBS) is suggestive both of China's desire to reduce the vulnerability of its nuclear deterrent to first strikes. Increasing the number of solid-fuelled ICBM silos in concert with continued deployment of mobile ICBM launch systems will enhance the chances that more ICBMs would survive a first strike via a larger number of targets a potential attacker would have to hit, but also by replacing China's older liquid-fuelled ICBMs that take longer to fuel and arm. But it also indicates an attempt to counter the potential effects of US ballistic missile defence (BMD). China's G-FOBS is also arguably compelled by this [logic](#), as the slower speed and non-parabolic flight of such a capability would make it difficult for US BMD and early-warning systems to detect.

In sum, the evolution of China's nuclear modernization and nuclear posture suggests a shift away from the limited nuclear deterrent posture it has maintained for decades toward a more ambitious one. As Hans Kristensen and Matt Korda [note](#), "although China is unlikely to reach nuclear parity with the US and Russian nuclear arsenals in the foreseeable future" it's build-up is:

...significant by Chinese standards, in comparison with both Russia and the United States, as well as in international historical context. The number of apparent missile silos under construction is similar to the total number of nuclear warheads in the current Chinese stockpile; it exceeds the number of missile silos operated by Russia; it is approaching the number of silos operated by the United States; and it constitutes the largest silo construction since the United States and Russia established their ICBM forces during the Cold War.

From China's perspective, however, the impetus behind modernizing its nuclear forces and posture has been the evolution of US forces since the end of the Cold War and its expanded conventional counter-force capabilities. Chinese observers have [suggested](#) that the US has sought to attain "absolute security" and thereby escape mutual vulnerability within the Sino-US nuclear relationship, posing a clear security dilemma for Beijing. To an extent then, China's response illustrates how the evolution of American nuclear posture and the increasing over-lap in nuclear and conventional capabilities has provided incentives for vertical proliferation and force modernization. China's shifting nuclear force posture and doctrine, while enough to potentially deter an American conventional counter-force strike, may also encourage worst-case American assumptions about China's threshold for nuclear use in a crisis.

Conclusions

It is therefore clear that changes in power relativities, and the associated reshaping of world and regional order, are having a significant impact on the way the most powerful nuclear weapons states view the role of deterrence. For the US nuclear weapons remain an important part of the deterrence mix. But they fit uneasily with the development of offensive cyber tools and missile defences that may blunt an adversary's capabilities whilst undermining the strategic reassurance associated with deterrence. Coupled to US retrenchment and the turbulent Trump presidency, this has the additional effect of diminishing the confidence of allies in extended US nuclear security guarantees.

Russia, on the other hand, has come to see nuclear weapons as an instrument for power politics and a means to challenge transatlantic resolve, albeit by necessity rather than design. Its frequent nuclear posturing against NATO states following its February 2022 invasion of Ukraine is intended to communicate a higher Russian risk appetite than the broader West. But at the same time, it also telegraphs weakness given the well-documented failures of Russian conventional forces in securing its military-strategic

objectives. Hence Russian brinkmanship currently serves more as a warning to the West not to get involved than an overt attempt to control an escalation ladder in a potential conflict with NATO.

The PRC, meanwhile, has realised that in order to maximise its capabilities in strategic competition with the US, it will be necessary to develop larger, more modern and more diversified nuclear forces. This has meant drawing the attention of the Pentagon in the form of new thinking on the notion of “integrated deterrence” to respond to the PRC’s evolving capabilities, although it is as yet [unclear](#) precisely what integrated deterrence means in practice in respect to great power competition between Washington DC and Beijing. That said, it is also unclear how China’s modernisation of its nuclear forces is affecting its broader appetite for potential military confrontation with the US – with Taiwan being the most commonly cited example – or whether it will seek to further integrate nuclear weapons into a conventional-nuclear deterrence mix.

Further reading

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