

Deterrence in the 21st Century: Integrating Nuclear and Conventional Force

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Abstract

Potential adversaries of the United States have concluded that upgrading and diversifying their nuclear forces is vital to their defense posture and to prevailing, whether at the negotiating table, on the battlefield, or in future crises with the United States. They seek to use their nuclear forces to coerce partners, fracture alliances, and shape regional security dynamics and future military campaigns. These actions will help leverage their nuclear forces, and create hybrid conventional-nuclear strategies that will ensure future crises or conflicts will include a nuclear dimension from the outset. It may also extend across multiple phases and domains. Since the end of the Cold War, US nuclear deterrence has been marginalized and stovepiped in favor of conventional deterrence. This article asserts that thinking about conventional deterrence independently or otherwise detached from US nuclear forces is not sufficient to counter hybrid nuclear-conventional strategies. Rather, it advocates on behalf of better integration between nuclear deterrence strategies and nuclear deterrence operations with US conventional defense policy, strategy, and planning processes. As such, it supports the call within the 2018 *Nuclear Posture Review* to “strengthen the integration of nuclear and non-nuclear military planning” and offers initial steps forward.



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During the Cold War, *deterrence* often served as shorthand for *nuclear deterrence* with US nuclear forces playing a primary role in US deterrence strategies. However, following the collapse of the Soviet Union, nuclear deterrence faded into the background of US national security policy, defense strategy, and military operations. For many policy makers in the 1990s and 2000s, nuclear forces appeared to play a peripheral and declining role. Nuclear deterrence and nuclear-capable forces became increasingly associated with deterring a small set of narrowly defined, highly unlikely scenarios involving attacks against the US or allied homelands with nuclear or other weapons of mass destruction. In turn, nuclear deterrence and nuclear-capable platforms became increasingly marginalized in the national defense community and separate from the exercises and planning associated with conventional forces and conventional operations. Nuclear-capable forces were often viewed as obsolescent niche capabilities that existed for remote emergencies. While such a posture made sense in the immediate post-Cold War international environment, it is increasingly incapable of countering emerging threats.

Yet, as stated in the 2018 *Nuclear Posture Review (NPR)*, nuclear-armed potential adversaries have not followed the United States in reducing the role and salience of nuclear forces.¹ In recent years North Korea, Russia, and China have seemingly surveyed the geopolitical environment, assessed the prospects of a future armed conflict with the United States and its allies, and fundamentally rejected the premise that nuclear forces are fading from geopolitical prominence or declining in military utility. These potential adversaries appear committed to developing and implementing strategies and plans for their nuclear-capable delivery systems that will provide their leaders with various use or employment options across the spectrum of crisis and conflict.² These hybrid strategies combine conventional and unconventional weapons, to expressly include a significant and growing role for their nuclear-capable forces. Such options are likely intended to both complement and support deterrence and other military-political objectives by actively shaping and complicating the decision making and defense planning of their potential adversaries, namely the United States and its global alliances. This is relevant particularly with regard to potential hostilities within their home regions.³ These states appear prepared to deliberately and rapidly escalate up to, and potentially past, the nuclear threshold early within an armed conflict, if necessary. Importantly, their calculus of what constitutes

early and *necessary* in a period of hostilities may fundamentally differ from that of the United States, creating a mismatch of perception and risk assessment that could surprise the United States in the future. This requires a serious reevaluation of how best to deter nuclear-armed adversaries, the role US nuclear-capable forces should play within these deterrence strategies, and how to integrate these forces with other US capabilities to present a seamless deterrence posture.

US deterrence policy and strategy, however, has proven slow to respond to adversary hybrid strategies, as US strategic thought on deterring nuclear-armed potential adversaries has struggled to keep up.⁴ Adversaries have evolved the roles, responsibilities, and capabilities of their nuclear forces as well as integrated these forces with conventional concepts and capabilities. These strategies and operations use a hybrid conventional-nuclear approach to shape and influence regional security dynamics prior to a conflict or crisis by using nuclear capabilities in a manner calculated to place pressure upon US allies and to influence allied and US cost-benefit analyses.⁵ Adversaries may be willing to brandish or even employ nuclear forces to secure victory on the battlefield or at the negotiating table. While potential adversaries of the United States have thought deeply on the topic of how integrating conventional and strategic capabilities can provide new options for deterrence and war-fighting operations, US deterrence thought has remained largely static since the Cold War. Indeed, the United States has yet to develop a cohesive, comprehensive approach bringing together what the Joint Staff defines as the “three Cs” of deterrence: capabilities, credibility, and communication. All of this hinders the ability of the United States to address present and future deterrence and assurance requirements that may require a mix of nuclear-capable and conventional forces simultaneously carrying out a range of operations to deter and defeat an adversary.

With these challenges in mind, this article asserts that nuclear forces will be active components across the full range of Russian, Chinese, and North Korean military activities; thus, thinking about conventional deterrence independently or otherwise detached from US nuclear forces is not sufficient to counter hybrid nuclear-conventional strategies. Rather, we reaffirm the 2018 *NPR* and advocate for more closely integrating US nuclear deterrence strategies and nuclear deterrence operations with conventional defense policy, strategy, and planning processes.⁶ This approach will allow civilian policy makers and military commanders to

better posture US forces and tailor deterrence strategies to address present and future challenges. By ensuring that US nuclear and conventional forces complement each other across geographic theaters and strategic domains, the United States can prevent adversaries from calculating that forces equipped with weapons of mass destruction (WMD) grant them a tactical or strategic advantage in a future crisis or conflict with the United States and its allies.

Understanding Adversary Hybrid Conventional-Nuclear Strategies

Deterrence is about influencing a potential adversary's cost-benefit calculus, assessment of risk, and decision-making processes. It requires a thorough understanding of a potential adversary's priorities, perceptions, and strategies.⁷ Today, it appears a common strategic logic drives adversaries to adopt an approach to the United States and its allies that prominently includes a significant role for nuclear weapons, up to and including their potential employment during an armed conflict.⁸ Indeed, as Indian general Krishnaswamy Sundarji reportedly observed following the 1991 Gulf War, "If you are going to fight the United States, you better have nuclear weapons."⁹ General Sundarji's quip appears to have taken root, as the 2018 *NPR* acknowledges that nuclear-armed potential adversaries are developing, modernizing, and expanding their nuclear forces and integrating them into their military posture and strategy to offset the US conventional advantage.¹⁰ As Gen John Hyten, commander of US Strategic Command (USSTRATCOM), observed, "We have adversaries that are looking at integrating nuclear, conventional, space and cyber, all as part of a strategic deterrent."¹¹ We believe the *NPR* and General Hyten highlight a significant trend and convergence in adversary thinking toward a strategy intended to counter the United States and coerce its partners and allies.

Nuclear-armed adversaries—North Korea, Russia, and China—consider the United States the primary threat to their security.¹² All three believe the United States seeks to encircle them and stunt their regional and global ambitions; in Moscow and Pyongyang this is viewed as part of a broader effort aimed at crippling or deposing their ruling regimes.¹³ For example, the Russian national security strategy explicitly states the United States and its allies seek to oppose an independent Russia in order to retain their dominance in world affairs.¹⁴ Democratic People's

Republic of Korea (DPRK) official statements have echoed the same sentiment, explaining, “the US persistent labeling of the DPRK’s measures for bolstering up the capability for self-defense as [a] ‘threat’ is nothing but a pretext for justifying its aggressive hostile policy towards the DPRK and [its] strategy for dominating Asia.”¹⁵ Should conflict erupt, they believe the United States is prepared to negate their nuclear arsenals, disrupt their command and control (C2), and decapitate their leadership through rapid (conventional and/or nuclear) precision strikes and responsive missile defense intercepts.¹⁶ As Lora Saalman, a scholar on Chinese security issues, notes, “With the addition of prompt global strike (PGS) to [the US] strategic lexicon, Chinese perceptions on US ‘absolute security’ (*juedui anquan*) have assumed renewed urgency and focus. The ability for Washington to conduct a preemptive strike against Beijing without fear of retaliation cuts to the heart of the concept that Washington seeks primacy at Beijing’s expense.”¹⁷

This view is common among leaders in Moscow, Pyongyang, and Beijing. It is informed by their analysis of US-led military campaigns during the post–Cold War era, particularly those that resulted in the overthrow, capture, and/or demise of political leaders who opposed the United States (e.g. Slobodan Milosevic, Saddam Hussein, and Mu‘ammar Gadhafi). This fear was aptly described by Alexei Arbatov, former deputy chair of the Russian Duma Defense Committee, in 2000:

The NATO bombing campaign against Yugoslavia has left the Russian people with a vivid image of a possible future scenario—with Russia on the receiving end of surgical strikes against industrial, infrastructure, and military targets. These strikes would be especially targeted against nuclear forces and [command, control, and communication] sites, and would be sufficiently selective not to provoke a nuclear response. They would, however, efficiently destroy Russia’s deterrence capability within a few days or weeks.¹⁸

In Arbatov’s assessment, no target can be assumed to remain beyond the reach of the United States. Russia, China, and North Korea fear that continued US investment in advanced technologies may grant Washington an even broader suite of options to methodically and systematically dismember their regimes in the future.¹⁹ As explained by North Korean state-run news agency KCNA, only robust nuclear capabilities can preserve the regime: “The Saddam Hussein regime in Iraq and the Gaddafi regime in Libya could not escape the fate of destruction after being deprived of their foundations for nuclear development and giving

up nuclear programs of their own accord.”²⁰ It should be noted these concerns are particularly acute in Pyongyang and Moscow; in relative terms, China appears to feel more secure against the United States—but similarly chafes against a regional and international security order it believes favors the United States and keeps others, to include their state, from growing strong enough to either challenge it or reshape the Indo-Pacific region to their liking.

Concerns over US capabilities and intentions have collectively increased North Korean, Russian, and Chinese commitments to nuclear forces. They consider these forces vital to securing their status as major powers and compensating for inferior conventional military capabilities. All three fundamentally reject the idea that nuclear weapons are becoming less relevant to geopolitics or military affairs. In contrast, they have increased their reliance on nuclear weapons for deterrence as well as defense. Indeed, nuclear forces represent an important asymmetric military capability for nullifying their nonnuclear disadvantages.²¹

More importantly, the role of nuclear weapons in these three states’ strategies has become more nuanced and expansive as a result of their assessment of potential future armed conflicts. These actors believe a constant state of competition exists with the United States that explicitly includes a nuclear dimension that extends across multiple strategic domains and across different phases of crisis and conflict. Thus, nuclear forces not only deter the most extreme circumstance (large-scale nuclear attack against their homelands) but also are increasingly expected to play a foundational and active role across all phases of crisis and conflict.²² They ostensibly go well beyond views of nuclear deterrence and prevention of nuclear war, to include the potential for war fighting.²³

Indeed, North Korea and Russia (and to some extent China) have been explicit about their readiness for nuclear use or employment. For example, in 2017 North Korea conducted several missile exercises designed to practice engaging US forces deployed in Japan and South Korea. As noted in one press release, “The drill was conducted by limiting the firing range under the simulated conditions of making preemptive strikes at ports and airfields in the operational theater in South Korea where the US imperialists’ nuclear war hardware is to be hurled.”²⁴ The NATO secretary general’s annual report noted in 2013 Russia simulated nuclear strikes against Sweden.²⁵ This came during repeated nuclear threats

from Moscow during its invasion and subsequent annexation of Crimea, Ukraine.²⁶

These states have developed a menu of options for calibrated nuclear use or employment, to include options for rapid and deliberate nuclear escalation.²⁷ These options are increasingly integrated across the spectrum of crisis and conflict, creating a hybrid approach that combines conventional and nuclear forces into a cohesive and flexible approach designed to fight and win potential conflicts with a range of actors, to include the United States and its allies.²⁸ For example, Dave Johnson, a staff officer in the NATO International Staff Defence Policy and Planning Division, explained, “Russia has integrated inherently flexible nuclear capabilities with conventional precision strike assets into a single strategic weapons set designed to inflict calibrated levels of damage for strategic effect.”²⁹ Indeed, Russia regularly exercises integration between components of its nuclear triad and conventional precision-strike capabilities.³⁰ Moreover, Moscow attempts to cast a nuclear shadow to achieve its political objectives in crises and conflicts short of conventional war, such as its annexation of Crimea or attempts to intimidate NATO members into forgoing missile defense procurements.³¹ China has also sought to integrate its forces. As noted by China security experts Michael Chase and Arthur Chan, Beijing has developed its own integrated strategic deterrence concept that “calls for a comprehensive and coordinated set of strategic deterrence capabilities, including nuclear, conventional, space, and cyber forces.”³² Song Zhongping, a former member of the People’s Liberation Army’s Second Artillery Corps (now PLA Rocket Force), reaffirmed this view, acknowledging China is working to integrate land-, sea-, and air-launched missile systems toward a seamless strike posture encompassing both nuclear and conventional forces. “China has developed many kinds of conventional warhead missiles,” Zhongping says, “from short range to long range, which all can be turned into very powerful nuclear weapons.”³³ During a crisis or conflict, all three states are likely to simultaneously seek to achieve strategic objectives with conventional means while also posturing, exercising, or demonstrating nuclear-capable forces.

Brad Roberts argues that these adversaries have developed a “theory of victory” vis-à-vis the United States that includes preparation for potential nuclear employment to degrade US capability and will to fight.³⁴ Potential adversaries contemplating a theory of victory for contingencies

such as a potential regional armed conflict appear to make three broad assumptions.

First, they appear to believe there are real incentives for the use of nuclear-capable forces for a range of possible operations, up to and potentially including employment at the outset of or early within a regional conflict. These incentives are particularly high if they believe the United States is preparing to launch an immediate attack. Importantly, from their perspective, their use or employment of nuclear forces would, in many cases, represent a form of *defensive* operation, rather than a preemptive, offensive, or highly escalatory form of employment. Within their assessments of past US military operations, all three nuclear-armed potential adversaries have observed the difficulty of combatting a US-led coalition, particularly if the United States is granted time to assemble a major conventional military force. The ruling regimes note that time is rarely on the side of state actors opposing the United States—the longer the conflict, the more likely a US adversary will face an increasingly unfavorable balance of forces. Thus, should an adversary conclude that conflict is likely, US overseas bases, key transportation nodes, and concentrations of US or allied forces may be threatened or struck early to negate US and allied military advantages and create space for negotiation and crisis termination.

Second, potential adversaries seem to view US defense strategy and planning as daunting but also potentially brittle—and thus vulnerable with regard to the networks of capabilities, webs of allied and partner relationships, and multiple communications and transport nodes involved. If key US nodes are held at risk or an important US ally is coerced into sitting out a fight or refuses US access, adversaries may speculate that the operational tempo of US military response will slow or even grind to a halt. This could explain an interest in dual-capable delivery systems of varying ranges that can grant a number of options for threatening regional or theater targets or attacking them outright.

Finally, North Korea, Russia, and China may believe escalation, including nuclear escalation, can be controlled.³⁵ As such, all three nuclear-armed potential adversaries appear to reject the idea that any form of nuclear escalation or employment in a future armed conflict will likely or necessarily lead to thermonuclear Armageddon. In addition, all three states implicitly question whether the United States will view any

form of “limited” nuclear employment within the context of a regional conflict as necessarily triggering a major US nuclear response.

As such, potential adversaries also appear to be differentiating between different levels of conflict (i.e. regional conflicts and those that would involve some form of direct attack against the US homeland). This is not to suggest that within a future regional crisis a potential adversary will not implicitly or explicitly threaten the US homeland; indeed, this might be a critical component of their strategy. But all three states will likely hesitate to wage attacks upon the US homeland for fear this would automatically provoke a significant US response. Instead, they seek strategies and courses of action, to include types of nuclear employment, that would keep an armed conflict within their “home” region and not provoke unwanted escalation. They may believe nuclear employment can be controlled through careful and limited application of force. This could, for example, include actions such as a tactical nuclear attack on naval targets or against an advancing column of ground forces or an atmospheric detonation designed to interfere with aerospace operations. Together these assumptions appear to form a perception that some form of limited, regional employment of nuclear weapons far from US shores may not automatically trigger a US nuclear counterstrike.

These insights also reveal an implicit but central judgment about the US willingness to sustain costs. North Korea, Russia, and China all appear skeptical of the US willingness to endure significant pain and casualties due to a prolonged conflict that is not initiated as a result of a direct attack upon the US homeland. They also question the breadth and depth of the US commitment to a number of its allies and partners and to related US-led regional security arrangements. They view the United States as a superpower and fear that it has hegemonic ambitions but wonder how willing it is to bear the costs of hegemony, particularly on behalf of distant allies and interests and if these costs have the potential to be very high. As such, a hybrid approach that couples conventional military action with nuclear threats or employment may (in their minds) induce the United States and its allies to back down.

None of this suggests that nuclear strategies of potential adversaries are the same or that they seek a nuclear conflict with the United States. Nor should it be assumed that their theater-range dual-use options are always or primarily nuclear options or that they are solely developed with the United States and its allies in mind. But it does reflect a convic-

tion that there are significant incentives for adversaries to consider employing their nuclear forces to achieve political and military objectives, particularly within a future regional crisis or conflict. It also reflects the growing trend to closely tie nuclear-capable forces into strategies and operations that employ conventional and dual-use forces to achieve strategic, theater, and battlefield objectives against the United States and its allies.

Importantly, North Korea, Russia, and China likely calculate that even the threat of nuclear employment could shift the nature of a crisis or conflict, potentially panicking US allies, fracturing US-led coalitions, or causing US decision makers to reevaluate the risks or costs over what may appear to be a regional dispute. Should armed conflict break out, Russia, China, or North Korea may assess that certain forms of limited regional nuclear strikes could peel away US allies unwilling to risk being the possible target of nuclear strikes. Moreover, if an initial, conventional-only conflict yields indecisive or poor outcomes, the threat or employment of theater nuclear forces may also be viewed as an option for attempting to force the United States and its allies to the negotiating table, terminating hostilities before they prevail.

Four recent developments offer evidence of this hybrid conventional-nuclear approach on the part of these potential adversaries. First, all three have revisited or reemphasized the potential utility of nuclear weapons (to include their employment against a highly capable conventional opponent) within their respective military doctrines. Some are more explicit, such as North Korea and Russia, who both openly brandish the nuclear option. China is more opaque, and its growing conventional capabilities make it relatively less reliant on nuclear forces, but its stated “no first use” policy may be less unconditional than it is often presented, and it too has recently significantly elevated the role and importance of its nuclear forces. For example, both China and North Korea have elevated the status of their respective commands responsible for nuclear forces, placing strategic capabilities on the same level as air, sea, and naval forces.³⁶

Second, North Korea, Russia, and China are diversifying and expanding their means of delivering nuclear weapons.³⁷ This includes an emphasis on developing or improving multiple dual-capable missile delivery systems required for various forms of nuclear employment.³⁸

Third, these actors have also taken steps to improve the command-and-control of their nuclear-capable forces, to include emphasizing their

ability to maintain control, execute orders, and carry out operations in the event of a major armed conflict.³⁹

Finally, all three states have conducted tests, exercises, and war games that feature nuclear-capable forces carrying out warfighting operations. For example, both North Korea and Russia have openly exercised nuclear-capable forces carrying out simulated attacks against US and allied targets as well as issuing threats to employ nuclear weapons that appear calculated to intimidate and coerce US allies and partners and perhaps also impact US decision making in the event of a crisis or conflict.⁴⁰ China has also publicly exercised its rocket force under battlefield conditions, to include against an unnamed major power and with rocket force troops practicing to fight through electronic warfare and WMD attacks.⁴¹ Taken together, these developments ensure that within any future crisis or conflict, these forces will be highly capable, implicitly casting a nuclear shadow over the hostilities, and pose deterrence, assurance, and war-fighting challenges to US regional combatant commanders.⁴²

Integrating US Conventional and Nuclear Deterrence Strategies

The above threat represents a strategic challenge requiring enhancements to US deterrence posture. No longer can deterrence be divided between nuclear and nonnuclear subgroupings. The nonnuclear/nuclear hybrid approach employed by potential adversaries necessitates a more comprehensive, cohesive, and mutually supportive approach to deterrence. Senior members of the US defense community have advocated for a renewed emphasis within US defense policy and planning on the critical importance of reintegrating US nuclear-capable forces into military planning to better deter contemporary threats.⁴³ Moreover, a number of scholars and practitioners have analyzed the challenge posed by nuclear-armed potential adversaries attempting to wield these weapons to strain US alliances and challenge US defense plans and concepts. In response, they have sought to develop strategic concepts or policy prescriptions for countering these threats that both reevaluate and better integrate US nuclear-capable forces into US defense and deterrence strategies against current and future threats.⁴⁴ In addition, as noted above, the 2018 *NPR* calls for a better integration of nuclear forces into broader US military planning and operations.⁴⁵

However, integrating US nuclear and nonnuclear forces for the purpose of improving the US ability to deter adversary hybrid challenges faces a number of obstacles. These obstacles are likely to hamper the US ability to deter adversaries who may precipitate crises that do not fit into either a conventional or nuclear box.

Given the complexity and multiple layers of the problem, it is important to unpack the challenges that impede integration before articulating improvements. Nuclear and conventional policy separation developed over time and reflects a combination of factors within the national security policy-making community and the armed forces. For policy makers, these included the following: optimism that nuclear weapons could be rendered taboo or obsolete, a diminished interest in and understanding of nuclear forces, competition with other issues on a crowded US national security docket, concerns about resource constraints within the defense budget, and anxiety and uncertainty over how to best address new and emerging threats.

Nuclear forces and their potential contributions to deterrence and defense were also sidelined within the Department of Defense and armed services. The end of the Cold War and significant reduction in US forward-deployed non-strategic nuclear weapons led regional combatant commanders to increasingly view nuclear deterrence and operations as the responsibility of US Strategic Command (USSTRATCOM) and turned their attention to what they considered more pressing matters. Over time, the service academies and war colleges also reduced nuclear force and deterrence offerings on their curricula, with only a smattering of courses addressing these topics; while some relevant courses have returned to the US military's schoolhouses, the trend remains slow to reverse.⁴⁶ In addition, many war games and tabletop exercises would either deliberately leave the activities or involvement of nuclear-capable forces out of the game or would entirely halt such exercises at the first sign of potential nuclear employment. Finally, the seemingly interminable "War on Terror" consumed significant military leadership and intellectual bandwidth. Nuclear thinking outside the realm of nuclear terrorism remained largely in the background. Although civilian and military leadership repeatedly stated in the years after the end of the Cold War that nuclear forces remained a priority, the US government did little to redress the slow but steady exclusion of nuclear-capable forces from broader defense plans and policies.

All of the above factors sidelined or diminished policy attention on nuclear issues for most of the post-9/11 era and increasingly left nuclear forces detached or absent from the development of strategies to address contemporary security challenges. They also contributed to pushing nuclear deterrence and nuclear strategy to the margins of military education, training, and planning. However, it is increasingly clear this static and stagnant approach is no longer tenable. As stated in the 2018 *NPR*, integrating US nuclear forces into broader US military strategy is vital to US national security.⁴⁷ The integration required to respond to nuclear-armed potential adversaries' hybrid approach to strategy and war fighting will by necessity require significant coordination within plans, capabilities, responsibilities, and authorities to be successful. This will likely require new thinking and strategizing. But the United States also will need to move beyond a posture where nuclear-capable forces are left in the background, only called upon in the direst situations.

All of this is not to suggest the United States should lower its threshold for nuclear employment; rather it is to rethink how to prepare for a conflict with an adversary that will include nuclear and dual-capable forces throughout the entirety of its own campaign planning and will seek to use its nuclear capabilities to intimidate and coerce US allies and partners well before the advent of a crisis or conflict. Even if the nuclear forces of potential adversaries are primarily or solely used for messaging and signaling purposes, the United States must be prepared for its own nuclear-capable forces to carry out deterrence operations—and to possibly continue conducting these operations even as other US forces engage in war fighting.

Theater commanders may, for example, need to juggle the demands of a robust air campaign while at the same time devoting airframes to meet nuclear deterrence and allied assurance requirements. US forces may also need to develop a new and different approach to intra-conflict deterrence, such as sending signals or posturing forces to deter an opponent from bringing tactical nuclear forces to bear in a future battle for the purposes of potential nuclear warfighting. This multi-level challenge—simultaneous conventional war fighting while proactively deterring potential adversary use or employment of WMD for tactical or strategic effect—is only partly addressed in the 2018 *NPR*. Moreover, necessary measures to successfully integrate US forces exist in tension with other current guidance documents, which refer to deterrence as a set of activities

that occurs before armed conflict and the ramping up of major combat operations rather than an activity that might be necessary across all phases of operations.⁴⁸

The end result of this integration will differ theater to theater and adversary to adversary. But in each case the approach should address at least six factors that have stovepiped current US nuclear deterrence strategies, operations, and forces:⁴⁹

1. Separation of Nuclear Forces from Regional Deterrence and Defense Architectures

As noted above, deterring the use or employment of adversary nuclear forces in regional crises, contingencies, or conflicts is of increasing importance. In the future, *any* regional crisis or conflict with a potential adversary such as North Korea, Russia, or China will automatically include a nuclear dimension. Deterrence of nuclear intimidation, coercion, or aggression thus requires the United States to develop strategies and courses of action that deter not just threats to the US homeland, but also explicit nuclear brinkmanship and bellicosity within a specific theater as well, something largely eschewed by most US military planners. Yet deterring adversary nuclear threats or actual escalation during a “conventional” conflict to ensure the United States and its allies can achieve our political-military goals requires closer coordination between conventional and nuclear forces. Indeed, deterrence staffing or planning cannot be separated as a problem for (typically a very limited number of) nuclear planners at regional headquarters and their counterparts at STRATCOM. Instead, US nuclear-capable forces must be directly integrated into all theater war planning.

To be sure, US nuclear-capable forces may not necessarily need to have a visible role within some contingencies. However, they are likely to have some role—however slight—due in no small part to potential adversaries and allies viewing these forces as the most effective counter to nuclear aggression. This requires a coherent and cohesive strategy that encompasses US nuclear-capable forces, to include how the United States can posture, signal, and deploy these forces (whether in the continental US, abroad, or in transit between the two) in a manner that will lead a potential adversary to stand down or otherwise curtail its use of nuclear or dual-capable forces within a crisis or conflict in its own backyard. The goal is to develop and communicate a strategy—and execute

the actions or operations necessary to make this strategy credible—that keeps an adversary’s nuclear forces in garrison or otherwise viewed as a zero or net negative within their cost-benefit calculations. The alternative is that these adversary forces will play a role (and potentially a very prominent role) in an unfolding conflict, requiring a US commander to devote precious, and likely scarce, resources to assuring skittish allies and perhaps even to missions devoted to neutralizing or eliminating these adversary assets, which increasingly include mobile units that are difficult to find, fix, track, and destroy.

2. Separation of Capabilities

Closely tied with integrating nuclear forces with regional forces and plans is how to synchronize and de-conflict dual-capable systems and supporting assets needed to implement regional deterrence architectures (i.e. the tactical component to integration at the regional/theater level). Indeed, future nuclear deterrence operations in a regional contingency could bring competing priorities with nonnuclear assets into direct conflict. For example, to quickly send a bomber assurance and deterrence mission to a specific region or theater, the United States may need to rapidly generate a bomber or bombers supported by tanker aircraft and other assets. Depending on the circumstances, the requirements of this mission might be simultaneously competing with requirements for other missions in this or other theaters, all of which may rely on the same fleets of aircraft. As such, future nuclear deterrence operations and courses of action will need to match US nuclear and conventional needs with capabilities in a manner that, whenever and wherever possible, is complementary and mutually supportive, potentially requiring significant coordination meticulously planned in advance.

3. Separation of Nuclear Forces and Nuclear Deterrence from Certain Phases of Conflict

At present, there is a general assumption within the United States that nuclear deterrence is either restricted, or most relevant, to either the earliest or latest phases on the spectrum of peace and armed conflict. Within Joint Staff guidance documents such as *Joint Operations*, “deterrence” concepts or operations are important in pre-conflict phases but are either suspended or take a back seat to war fighting upon the initiation of hostilities.⁵⁰ In this view, deterrence—and particularly nuclear deterrence—is largely absent from consideration as fighting grows more

intense, returning to prominence only when necessary to deter potential nuclear employment by an adversary. A second and closely related assumption is that adversary nuclear employment is unlikely to occur during the onset of a conflict and will not occur without some form of signal or other indication that an adversary is prepared to escalate up to nuclear employment.

Yet this approach has two important challenges given the analysis of potential adversary strategizing and organizing, training, and equipping of nuclear-capable forces, described above. First, potential adversaries may have strong incentives to use or consider employing their nuclear forces early in, or even at the onset of, a conflict. As a result, courses of action for the purposes of deterring adversary use or employment of nuclear forces should not be restricted to the beginning or end of crises or conflicts and may represent a requirement across all phases. Second, this guidance overlooks the challenge of intra-conflict deterrence. Indeed, over the last two decades, policy makers have done little in terms of thinking or practicing with regard to the challenge of how to signal (whether through posturing or moving forces, or in terms of media messaging or leadership communications) for the purposes of deterrence during a future conflict with a nuclear-armed power. The question of how to deter a nuclear-armed adversary from escalating up to and over the nuclear threshold is too important to wait until an actual shooting war starts—indeed, at that point, it is far too late to prevent aggression. The solution likely involves coordinating military movements and actions with sustained communication and disciplined messaging to multiple actors, to *include* the adversary. But communication with competitors and potential adversaries is often fraught even in peacetime. This and other elements of intra-conflict deterrence remain understudied, little practiced, and poorly understood outside of Omaha and parts of the Pentagon, which could raise serious issues and challenges in a future crisis.

4. Separation of Planning

Planning and executing nuclear deterrence operations while simultaneously managing a crisis or engaging in war fighting will be difficult for a commander during a period of high tension or within the heat of battle. These plans require contemporary development and integration to be effective and compatible during a future crisis or conflict with a nuclear-armed adversary. But as with other aspects of nuclear strategy

and operations, “nuclear” plans (and planners) are often separated from “conventional” forces. This problem applies beyond nuclear-capable forces, as planning for other operations (such as counter-WMD operations or application of high-end special operations teams for critically important targets) is similarly often kept separate from other plans. All of the above are problematic for attempting to prepare to outmaneuver and outfight a nuclear-armed adversary. Forces well prepared to quickly and effectively execute operations that may include conventional, nuclear-capable, or potentially highly specialized teams of special operators will require a great deal of advance planning and coordination to neutralize or eliminate nuclear threats.

5. Separation of Responsibilities

Who has the primary responsibility for deterring nuclear intimidation, coercion, and aggression when the implicit or explicit threats involved are not directed against the US homeland? USSTRATCOM is the integrator and synchronizer with regard to deterring or combatting strategic threats and when US strategic assets are involved. Potential adversaries, however, may view considerable utility in keeping their use of nuclear forces at a substrategic or tactical level. If an adversary is weighing regional or tactical nuclear use or employment, effective nuclear deterrence requires coordinated actions led principally by the regional combatant commander, along with the USSTRATCOM commander and the president.⁵¹ Prior to the 2018 *NPR*, however, there was limited and sporadic attention in several combatant commands to addressing the question of how US nuclear-capable forces should play a role in regional crises and contingencies involving potential adversaries that had retooled and bolstered their nuclear forces to put pressure on US-led regional security architectures and challenge US regional defense plans. Thus, this form of integration requires combatant commanders and their subordinate commanders who may be threatened or attacked by adversary nuclear forces to review and if necessary revise their plans, in coordination with the National Command Authority, USSTRATCOM, and the services (in their capacity as force providers) to ensure all parties concerned are synchronized in acting to forestall adversary nuclear brinkmanship and de-escalate nuclear crises. As these strategies, and the actions necessary to implement them, may require force deployments, force signaling, regional engagements, and high-level communications,

some or all of which may be occurring at the same time, discussion and coordination pre-crisis is imperative.

6. Separation of Domains

US policy makers and strategists have wrestled with various descriptions of deterrence that try to address the fact that the United States faces challenges and competitors across numerous strategic domains. How should the United States posture and operate its forces to deter adversaries across air, land, sea, space, and cyberspace? Differing definitions of the phenomenon, differing opinions on how to characterize this form of deterrence, and a host of differing authorities and responsibilities across the national security community for addressing these challenges have complicated US efforts to develop and implement a deterrence strategy that can span across domains.

Potential adversaries, however, appear to have done so already. In their view, the United States operates with impunity across strategic domains, to include planning attacks on their nuclear forces, which skews nuclear deterrence and escalation dynamics for these actors. Adversaries may jump to the conclusion during a crisis, for example, that the US has rejected or subverted the concept of nuclear deterrence and is preparing to preemptively attack. They may also “hopscotch” across domains, interpreting US actions in space or cyberspace as representing the spearhead of an attack on their nuclear deterrent force—and thus responding with courses of action focused on nuclear forces even when the United States has done nothing in terms of its own nuclear posture.

Regardless of the overall US deterrence strategy for deterring potential adversaries across these strategic domains, it is important for US policy makers and commanders to understand that adversaries may have already collapsed them. US actions, to include conventional force movements, missile defense deployments, exercises, or activities in space or cyberspace, are already informing adversary decisions with regard to nuclear force development and deployment and may also inform their future cost-benefit calculations with regard to using or employing their nuclear forces.

Integrating Deterrence: A Way Ahead

This article views the increasing commitment of potential adversaries to nuclear forces—and closely related efforts to integrate their nuclear

and nonnuclear forces for the purpose of challenging the United States across multiple strategic domains and phases of conflict—as a significant, pressing challenge to the US and its allies. Within this environment, successful deterrence strategies and operations will require close cooperation between nuclear-capable forces and other types of forces—space, cyber, and conventional—operating in unison rather than isolation. This requires fresh thinking and a new, integrated approach to deterrence that credibly communicates the United States possesses the will and attendant capabilities to impose costs and deny benefits against any adversary seeking to leverage or employ any part of its nuclear arsenal in a conflict or crisis, to include theater-range dual-capable systems and “tactical” nuclear weapons. To be sure, this type of integration is not a panacea for all deficiencies within the US deterrence posture. Rather, closer integration between US nuclear and conventional forces is a much needed early step in posturing to deter and, if deterrence fails, respond to potential adversary hybrid operations.

Four modest steps should be taken to integrate nuclear and nonnuclear forces to better prepare the United States to prevent an adversary from realizing any strategic or tactical advantage through nuclear use across the spectrum of crisis and conflict.

First, geographic combatant commands (GCC), USSTRATCOM, and the National Command Authority (NCA) must enhance their collective efforts on how to react to an escalating conflict that contains a nuclear dimension. This need was referenced in the 2018 *NPR*.⁵² The level of integration required to counter adversary hybrid nuclear strategies that have integrated conventional and unconventional forces requires greater synchronization between Washington, DC; Omaha; and regional and functional combatant commanders to develop the “tailored” strategies called for in the 2006 *Deterrence Operations Joint Operating Concept* and the 2018 *NPR*. In doing so, they can bring together US nuclear-capable and conventional forces in a manner that avoids mirroring and effectively deters opponents from realizing strategic or tactical objectives.⁵³ This necessitates all entities to co-develop and de-conflict campaign planning that explicitly features nuclear weapons, both of the United States and of a potential US adversary, across the spectrum of crisis and conflict. For example, leveraging nuclear or dual-capable military assets to deter adversary attempts at nuclear intimidation, coercion, or employment during a “conventional” campaign, without detracting

from US efforts to prevail within the ongoing conflict, must be better understood and synchronized more thoroughly. This may change some assumptions or objectives in current planning that may not fully take into account deterring, or, if deterrence fails, responding to nuclear use or employment during high-intensity conventional operations. More importantly, this also may mean scaling back certain nonnuclear operations to prevent escalation past the nuclear threshold, something that appears to be less well understood between the NCA, USSTRATCOM, and regional combatant commanders.⁵⁴

Second, geographic and functional combatant commanders and their staffs may need to reexamine and revise current plans to better support the broader conventional and nuclear integration efforts listed above. In the years after the Cold War, the bulk of thinking, planning, and capabilities for deterring adversary nuclear aggression shifted to USSTRATCOM. As such, nuclear deterrence was viewed as solely a USSTRATCOM task; combatant commanders were in the day-to-day business of fighting current enemies, not deterring nuclear attacks from a state adversary, which many considered an abstract and unlikely threat. This perception was reinforced by the removal of many US nuclear and dual-capable platforms from much of Europe and all of Asia, further distancing combatant commanders from the nuclear mission. Unfortunately, regional combatant commanders cannot view nuclear weapons as useless relics or another command's responsibility; several potential adversaries have made their own nuclear arsenals an integral part of their strategies. Consequently, the need to bring nuclear weapons back into the regional deterrence toolkit demands combatant commanders break through many of the stovepipes listed above that impede their ability to bring together conventional and nuclear-capable forces to deter adversary nuclear use or employment.


This effort should underscore the need to raise geographic combatant commander understanding of deterrence concepts and capabilities, and the complexities involved therein. Deterrence is not just about enhancing or reducing the combat power of a certain capability, though this is no doubt an important component. GCCs must understand how communication and other actions can impact credibility and influence an adversary. This may encourage certain actions that, for a period of time, reduce the combat potential of a capability while raising its visibility. For example, a port visit by a nuclear-armed submarine may increase

that system's vulnerability to attack; however, it may also signal to an adversary the seriousness with which the United States takes a crisis or conflict, thereby bolstering deterrence. GCCs will also need to consider what actions intended to bolster deterrence (to include intrawar deterrence) may have the adverse effect and trigger escalation. This requires an in-depth understanding of the potential adversary, its strategic calculus, and possible redlines, to include how the adversary may perceive certain actions or strikes (conventional or nuclear). For example, targeting certain sites may provoke an unwanted response from a potential adversary who may perceive such action as overly aggressive or escalatory. This requires at least some capability for GCCs to plan and think through deterrence challenges, as well as continued support and sustainment of expanding deterrence education for current and future senior leaders.

Third, the Department of Defense should consider reviewing current exercises to ensure they effectively test the ability of nuclear and nonnuclear forces to operate together under the stress of a simulated regional nuclear crisis. The review should encompass both tabletop and actual military exercises and should include testing of command-and-control communications with allies and crisis communication mechanisms and channels with potential adversaries and any other key third parties. The rationale for the review is not that any of these components are not tested, nor that there are doubts regarding the effectiveness of any actor or asset involved. Rather, it would help improve the reintroduction of deterrence and combat operations under the nuclear shadow. Indeed, such reviews, and subsequent exercises, would be to determine whether all these moving parts could work together to protect US and allied interests despite operating under extraordinarily stressful and complex conditions. Should the review deem certain exercises inadequate or uncover seams and gaps, this effort could assist policy makers and commanders in identifying and addressing coordination and integration challenges in advance of a real-world crisis, strengthening integration. Improvements to exercises could include additional tabletop exercises at the highest level of authority, along with regional military exercises that seek to improve US force ability to work cohesively during a nuclear crisis or conflict. This could include exercises that seek to simultaneously coordinate nuclear and conventional operations to strengthen deterrence while also enhancing US conventional forces' ability to fight and win on battlefields that may include nuclear and other forms of

unconventional forces. Understanding and harmonizing nuclear and nonnuclear forces is vital to successful integration and could potentially reduce or eliminate current conventional-nuclear stovepipes while improving the prospects for both conventional and nuclear deterrence.

Finally, the efforts by potential adversaries to hold the US homeland, US overseas bases, and allied homelands at risk suggests that deterring nuclear intimidation, coercion, and attacks may require the development of new concepts and models for better assessing and countering aggression that includes or is spearheaded by an adversary's nuclear forces. How can the United States better calibrate its own efforts at deterrence, which will likely feature a different mix of offensive and defensive forces than those fielded by its prospective opponents? A critically important task for the US national security community is to develop the tools and models that convince adversaries there is no profit in nuclear aggression.

A key challenge facing the United States and its allies is potential US adversaries integrating nuclear-capable forces into their broader political-military strategies, doctrines, and force postures. Despite this challenge, the United States has largely remained static and maintained a divide between the nuclear-capable and conventional forces within its broader military toolkit. The time has come for the United States to reintegrate its nuclear forces back into a broad range of strategies and operations aimed at deterring adversaries from engaging in hostile hybrid or nuclear actions. While modest, the actions proposed in this article will be useful in reducing the challenges that have impeded effective nuclear-conventional integration in the post-Cold War era. 

Notes

1. Department of Defense (DOD), *Nuclear Posture Review (NPR)* (Washington, DC: Office of the Secretary of Defense, February 2018), v, <https://www.defense.gov/News/SpecialReports/2018NuclearPostureReview.aspx>.

2. See Defense Intelligence Agency (DIA), *Global Nuclear Landscape 2018*, (Washington, DC: DIA, 2018), vi, https://www.defense.gov/portals/1/features/2018/0218_NPR/img/Global_Nuclear_Landscape_2018_Final.pdf, which notes the trend of several countries, to include potential US adversaries, “developing nuclear weapons with smaller yields, improved precision, and increased range for military or coercive use on the battlefield.” Within this paper, “use” describes a range of actions an actor can take with its nuclear forces below the threshold of actual employment. This can include bellicose rhetoric or threats from leaders or officials;

signaling through force movements, exercises, or war games; as well as tests or other forms of capability improvements.

3. The boundaries of this region can extend beyond borders to include areas that have particular cultural, historical, or religious significance or resonance to a potential adversary and are inextricably linked, in their view, to the defense or well being of their homeland (such as Russia's so called Near-Abroad or the area within China's Nine-Dash Line). In many cases potential adversaries may also believe that, with regard to the area or region in question, a favorable asymmetry of stakes exists between them and the United States.

4. For example, Russia's use of a nuclear-conventional hybrid strategy during its invasion of Crimea caught the United States flat-footed. As noted by Rep. Mac Thornberry, during a 2016 hearing with the House Armed Services Committee, "Russia presents a full spectrum of threats, from a modern nuclear arsenal which Putin has threatened to use against conventional forces, to hybrid tactics based on deception and confusion and little green men. So far, NATO and the U.S. have grappled to find effective countermeasures." Opening statement of Rep. William M "Mac" Thornberry, R-Texas, chairman of the Committee on Armed Services, in *Full Spectrum Security Challenges in Europe and Their Effects on Deterrence and Defense*, 114th Cong., 2nd sess., 25 February 2016, <https://www.gpo.gov/fdsys/pkg/CHRG-114hhrg99629/html/CHRG-114hhrg99629.htm>. More broadly, as noted in the 2018 *NPR*, for much of the post-Cold War era US strategy was developed "amid a more benign nuclear environment and more amicable Great Power relations." DOD, *NPR*, vi. See also testimony by Gen John E. Hyten, commander US Strategic Command (USSTRATCOM), before the Senate Committee on Armed Services on 4 April 2017: "If you look back not just to the 2010 nuclear posture review, but if you look back 20 years—and that is across multiple administrations, multiple Congresses, change of leadership in the military—you see a fundamental de-emphasis of nuclear weapons in our national security strategy. And then look at what our adversaries have done in response to that. I think the assumption would be if we lower the reliance on nuclear weapons and our adversaries do the same thing, they did just the opposite." *Hearing to Receive Testimony on United States Strategic Command Programs*, Senate Armed Services Committee, 115th Cong., 1st sess., Stenographic Transcript, 4 April 2017, 22, <https://www.armed-services.senate.gov/download/?id=C8B6CA1B-A24A-4FF5-9ED0-EE6ED07BD6C7&download=1>.

5. Joint Chiefs of Staff, *Joint Operations* (17 January 2017), xxiii, viii–7.

6. DOD, *NPR*, viii, 21, 37.

7. DOD, Department of Defense, *Deterrence Operations Joint Operating Concept*, ver. 2.0, 2006, 20–25, http://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joc_deterrence.pdf?ver=2017-12-28-162015-337. For notable academic literature examples on deterrence, see Bernard Brodie, *Strategy in the Missile Age* (Princeton, NJ: Princeton University Press, 1959); Herman Kahn, *On Thermonuclear War* (Princeton, NJ: Princeton University Press, 1960); Thomas Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 1966); Robert Jervis, "Deterrence Theory Revisited," *World Politics* 31, no. 2 (January 1979): 289–324, <https://doi.org/10.2307/2009945>; Thomas Schelling, *The Strategy of Conflict* (Cambridge, MA: Harvard University Press, 1980); and Lawrence Freedman, *Deterrence* (Cambridge, UK: Polity Press, 2004).

8. Some analysts have questioned whether nuclear-armed states such as Russia do indeed consider the early or integrated use of nuclear weapons in their strategic posture. This view generally holds that (1) Russian doctrine does not call for early use of nuclear weapons and (2) recent military exercises do not expressly include simulated nuclear use via "non-strategic nuclear weapons." We disagree with these viewpoints. First, doctrine is poor indicator of a state's

intentions. During a crisis or conflict, nuclear use will be directed by the nation's leader and a handful of trusted individuals. Thus, options ruled out in doctrine maybe presented if viewed as necessary. Second, Russia and North Korea (and to some extent China) clearly think about nuclear weapons differently. Both nations prepare and exercise various nuclear strike options. In some cases, this is via long-range nuclear capabilities; in other cases, it is shorter-range "non-strategic" systems. Finally, we assert an adversary's holistic force posture is the most important indicator of an actor's intentions. As noted above, this includes doctrine, capability, exercises, statements of intent, and leadership perspectives, among other things. In Russia's case, Moscow maintains a capability that spans across the spectrum of nuclear use, from initial employment to large-scale attack. As such, Russia has the ability to select the proper tool for any particular challenge. This is not to say Russia would eagerly cross the nuclear threshold; rather, should the leaders in Moscow decide a nuclear option is necessary, Russia will be well-prepared to do so. For a good discussion on Russian nuclear force posture, see Dave Johnson, "Nuclear Weapons in Russia's Approach to Conflict," *Fondation pour la Recherche Strategique*, no. 6, 2016. For more skeptical views on Russian force posture, see Olga Oliker and Andrey Baklitskiy, "The Nuclear Posture Review and Russian 'De-Escalation': A Dangerous Solution to a Nonexistent Problem," *War on the Rocks* (blog), 20 February 2018, <https://warontherocks.com/2018/02/nuclear-posture-review-russian-de-escalation-dangerous-solution-nonexistent-problem/>; and Bruno Tertrais, "Russia's Nuclear Policy: Worrying for the Wrong Reasons," *Survival* 60, no. 2 (20 March 2018): 30–44, <https://doi.org/10.1080/00396338.2018.1448560>.

9. This quote well known and regularly attributed to Sundarji. However, its original source is uncertain. For a few examples where the quote is used, see Robert Manning, "The Nuclear Age: The Next Chapter," *Foreign Policy*, no. 109 (Winter 1997–1998): 79, <https://www.jstor.org/stable/1149463>; Peter Wilson and Elbridge A. Colby Jr., *Fighting a Nuclear-Armed Regional Opponent: Is Victory Possible?* (Washington, DC: Center for Strategic and Budgetary Assessments, April 2008), ii; and George Perkovich, "If America Topples North Korea and Iran, What Happens Next?," *National Interest*, 17 November 2017, <https://carnegieendowment.org/2017/11/17/if-america-topple-north-korea-and-iran-what-happens-next-pub-74771>.

10. DOD, *NPR*.

11. Cheryl Pellerin, "STRATCOM Commander Describes Challenges of 21st Century Deterrence," *DOD News*, 17 August 2017, <https://www.defense.gov/News/Article/Article/1281946/stratcom-commander-describes-challenges-of-21st-century-deterrence/>.

12. DOD, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2017* (Washington, DC: Office of the Secretary of Defense, 15 May 2017), https://dod.defense.gov/Portals/1/Documents/pubs/2017_China_Military_Power_Report.pdf; and *Russia Military Power* (Washington, DC: Defense Intelligence Agency, 2017), www.dia.mil/Military-Power-Publications.

13. "We are responding to being encircled by NATO arms and troops. The recent events, which are unfolding in keeping with the NATO Warsaw Summit, involve the deployment of ground forces from NATO countries (incidentally, including Germany) near our borders." Foreign Ministry of Russia, "Foreign Minister Sergey Lavrov's Remarks and Answers to Media Questions at a Joint Press Conference following a Meeting with Vice Chancellor and Federal Minister for Foreign Affairs of the Federal Republic of Germany Sigmar Gabriel, Moscow, March 9, 2017," transcript, 9 March 2017, http://www.mid.ru/en/web/guest/meropriyatiya_s_uchastiem_ministra/-/asset_publisher/xK1BhB2bUjd3/content/id/2669210. Many Chinese strategic thinkers also contend that the United States is seeking to surround or encircle China: "A final set of Chinese concerns . . . center on the way missile

defense cooperation with regional partners tightens and expands U.S. alliances in the region in *what appears to many Chinese to be a network of institutions containing China*. For instance, outspoken PLA Air Force colonel Xu Dai aired this view: ‘China is in a crescent-shaped ring of encirclement. The ring begins in Japan, stretches through nations in the South China Sea to India, and ends in Afghanistan. Washington’s deployment of antimissile systems around China’s periphery forms a crescent-shaped encirclement.’ *These concerns are aired widely*” (emphasis added). Christopher Twomey, *China’s Offensive Missile Forces: Hearings before the US-China Economic and Security Review Commission*, 114th Cong., 1st sess., 1 April 2015, 66, https://www.uscc.gov/sites/default/files/transcripts/April%2001%2C%202015_Hearing%20Transcript_0.pdf.

14. Russian Federation Ministry of Defense, *Russian National Security Strategy*, 31 December 2015.

15. “Spokesman for DPRK Foreign Ministry Slams U.S. Accusations Over its Measures for Bolstering Up Nuclear Deterrent for Self Defense,” KCNA, 20 September 2016.

16. Dmitry Adamsky, “‘If War Comes Tomorrow’: Russian Thinking about Regional Nuclear Deterrence,” *Journal of Slavic Military Studies* 27, no. 1 (2014): 169, <http://doi.org/ctq3>.

17. Lora Saalman, “Prompt Global Strike: China and the Spear,” Daniel K. Inouye Asia-Pacific Center for Security Studies, April 2014, 3, https://apcss.org/wp-content/uploads/2014/04/APCSS_Saalman_PGS_China_Apr2014.pdf.

18. Alexei G. Arbatov, *The Transformation of Russian Military Doctrine: Lessons Learned from Kosovo and Chechnya*, Marshall Center Papers, no. 2 (Garmisch-Partenkirchen, Germany: George C. Marshall European Center for Security Studies, 2000): 18-19.

19. See examples in James M. Acton, *Silver Bullet? Asking the Right Questions About Conventional Prompt Global Strike* (Washington, DC: Carnegie Endowment for International Peace, 2013).

20. “North Korea Cites Muammar Gaddafi’s Destruction in Nuclear Test Defence,” *Telegraph*, 9 January 2016, <https://www.telegraph.co.uk/news/worldnews/asia/north-korea/12090658/North-Korea-cites-Muammar-Gaddafis-destruction-in-nuclear-test-defence.html>.

21. For more in-depth discussions on potential adversaries evolving nuclear weapons strategies, see John K. Warden, *North Korea’s Nuclear Posture: An Evolving Challenge for U.S. Deterrence*, Proliferation Papers, no. 58 (Paris: Institut Francais des Relations Internationales, March 2017), <https://www.ifri.org/en/publications/etudes-de-lifri/proliferation-papers/north-koreas-nuclear-posture-evolving-challenge-us>; Eric Heginbotham et al., *China’s Evolving Nuclear Deterrent* (Santa Monica, CA: RAND Corporation Press, 2017), https://www.rand.org/pubs/research_reports/RR1628.html; and Johnson, “Nuclear Weapons in Russia’s Approach to Conflict.”

22. For example, see Dmitry Adamsky, *Cross-Domain Coercion: The Current Russian Art of Strategy*, Proliferation Papers, no. 54 (Paris: Institut Francais des Relations Internationales, November 2015), <https://www.ifri.org/en/publications/enotes/proliferation-papers/cross-domain-coercion-current-russian-art-strategy>; and Michael S. Chase and Arthur Chan, *China’s Evolving Approach to “Integrated Strategic Deterrence”* (Santa Monica, CA: RAND Corporation Press, 2016).

23. For some examples on potential nuclear war fighting, see “NDC Spokesman Warns U.S. of Nuclear Counter-Action,” KCNA, 19 June 2016, www.kcna.co.jp/item/2016/201606/news19/20160619-31ee.html; and Damien Sharkov, “Russia Practiced Nuclear Strike on Sweden: NATO Report,” *Newsweek*, 4 February 2016.

24. Quoted in Jeffrey Lewis, “North Korea Is Practicing for Nuclear War,” *Foreign Policy*, 9 March 2017, <https://foreignpolicy.com/2017/03/09/north-korea-is-practicing-for-nuclear-war/>.

25. Jens Stoltenberg, *The Secretary General’s Annual Report 2015* (Brussels, Belgium: North Atlantic Treaty Organization Public Diplomacy Division, 2016), https://www.nato.int/nato_static_fl2014/assets/pdf/pdf_2016_01/20160128_SG_AnnualReport_2015_en.pdf.

26. Jacek Durkalec, *Nuclear-Backed ‘Little Green Men’: Nuclear Messaging in the Ukraine Crisis* (Warsaw, Poland: Polish Institute of International Affairs, July 2015).

27. Nuclear-armed potential adversary force postures (the collective of capabilities, readiness, and training) demonstrate a spectrum of nuclear-capable forces that include, among other things, ballistic and cruise missiles able to range varying distances (short, medium, intermediate, and intercontinental ranges) with flexible payloads. These options provide adversaries flexibility to use or actually employ nuclear-capable forces. For example, see DIA, *Global Nuclear Landscape*.

28. For example, see Adamsky, *Cross-Domain Coercion*; Dave Johnson, “Russia’s Conventional Precision Strike Capabilities, Regional Crises, and Nuclear Thresholds,” Livermore Papers on Global Security, no. 3 (Livermore, CA: Lawrence Livermore National Laboratory, February 2018), <https://cgsl.llnl.gov/content/assets/docs/Precision-Strike-Capabilities-report-v3-7.pdf>; Michael S. Chase and Arthur Chan, 2016; Thomas Christensen, “The Meaning of the Nuclear Evolution: China’s Strategic Modernization and U.S.–China Security Relations,” *Journal of Strategic Studies* 35, no. 4 (2012): 447–87, <https://doi.org/10.1080/01402390.2012.714710>; and Elsa B. Kania “China’s Strategic Arsenals in a New Era,” *Bulletin of the Atomic Scientists*, 20 April 2018, <https://thebulletin.org/china%E2%80%99s-strategic-arsenals-new-era11716>.

29. Johnson, “Nuclear Weapons in Russia’s Approach to Conflict,” 70.

30. “Recent Drills Demonstrate High Combat Readiness of Russia’s Strategic Nuclear Forces,” *TASS*, 2 November 2015, <http://tass.com/defense/833689>.

31. Durkalec, “Nuclear-Backed ‘Little Green Men’”; and Adamsky, *Cross-Domain Coercion*.

32. Chase and Chan, *China’s Evolving Approach*, iii.

33. “China Needs More Nuclear Warheads to Deter US Threat, Military Says,” *South China Morning Post*, 30 January 2018, <https://www.scmp.com/news/china/diplomacy-defence/article/2131261/china-needs-more-nuclear-warheads-deter-us-threat>.

34. See Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford, CA: Stanford University Press, 2016): 245.

35. For example, Chinese military analysts describe China’s “Nuclear Counterattack Campaign” in escalation control terms, noting strikes should be crafted to achieve objectives and terminate a nuclear war. Similarly, Russian analysts note that Russia can inflict “tailored damage” that does not provoke unwanted escalation after nuclear employment. For both Russia and China—and presumably North Korea—the inherent assumption is that an appropriate amount of damage can be tailored to an opponent to achieve their objectives and prevent escalation after nuclear employment. See Michael Chase, Andrew Erickson, and Christopher Yeaw, “The Future of Chinese Nuclear Policy and Strategy,” in *Strategy in the Second Nuclear Age*, ed. Toshi Yoshihara and James R. Holmes (Washington, DC: Georgetown University Press, 2012); and Nikolai N. Sokov, “Why Russia Calls a Limited Nuclear Strike ‘De-Escalation,’” *Bulletin of the Atomic Scientists*, 13 March 2014, <https://thebulletin.org/why-russia-calls-limited-nuclear-strike-de-escalation>.

36. DOD, *Annual Report to Congress*, 28; Xinhua, “China Inaugurates PLA Rocket Force as Military Reform Deepens,” 1 January 2016, <http://www.xinhuanet.com/english/2016>

-01/01/c_134970564.htm; and “Law on Consolidating Position of Nuclear Weapons State,” KCNA, 1 April 2013.

37. DIA, *Global Nuclear Landscape 2018*, vi.

38. DOD, *Annual Report to Congress*, 8; DOD, *Military and Security Developments Involving the Democratic People’s Republic of Korea*, 13-14; and National Air and Space Intelligence Center (NASIC), *Ballistic and Cruise Missile Threat*, 2017, http://www.nasic.af.mil/Portals/19/images/Fact%20Sheet%20Images/2017%20Ballistic%20and%20Cruise%20Missile%20Threat_Final_small.pdf?ver=2017-07-21-083234-343. “According to the U.S. Department of Defense, China possesses up to 1,800 theater-range land-based ballistic and cruise missiles, most of which are mounted on road-mobile transporter-erector-launchers and are thus capable of hiding and relocating in China’s complex terrain. The revolution in missile and sensor technology has greatly increased the accuracy of ballistic and cruise missiles and lowered the relative cost of these munitions. Finally, China is assembling a multi-dimensional sensor, command, and communications network that by next decade should allow it to effectively employ the platforms and munitions in its inventory.” China’s Offensive Missile Forces, Prepared Statement by Robert Haddick, *Hearing before the U.S. China Economic and Security Review Commission*, 114th Cong., 1st sess., 1 April 2015, 108, https://www.uscc.gov/sites/default/files/transcripts/April%2001%2C%202015_Hearing%20Transcript_0.pdf. While not all of these missiles are necessarily dual-capable, many are either dual-capable or resemble dual-capable systems. In addition, NASIC’s 2017 report notes: “China continues to deploy nuclear-armed medium-range ballistic missiles to maintain regional nuclear deterrence, and its long-term, comprehensive military modernization is improving the capability of its conventionally-armed ballistic missile force to conduct high intensity, regional military operations, including “anti-access and area denial” (A2/AD) operations.” *Ballistic and Cruise Missile Threat*, 22.

39. Andrew Roth, “Vladimir Putin’s Massive, Triple-Decker War Room Revealed,” *Washington Post*, 21 November 2015, https://www.washingtonpost.com/news/worldviews/wp/2015/11/21/vladimir-putins-massive-triple-decker-war-room-revealed/?utm_term=.a21c77dff196; CGTN, “China’s Rocket Force Conducts First Drill of New Year,” 3 January 2016, <https://www.youtube.com/watch?v=RLq9raPMwDo>; CGTN, “PLA Rocket Force Brigade Holds Night Combat Drill,” 18 April 2018, <https://www.youtube.com/watch?v=LeOeHJN5RsM>; and KCNA, “Kim Jong Un Supervises Test-fire of Ballistic Missile,” 22 May 2017.

40. Vladimir Putin, Presidential Address to the Federal Assembly, 1 March 2018, <http://en.kremlin.ru/events/president/news/56957>. The address, which featured a number of visual graphics and video and computer animation clips, included a computer animation of a simulated ballistic missile strike on Florida (indeed, the part of Florida where Mar-a-Lago is located). See also Stoltenberg, *Secretary General’s Annual Report*, 19; and Motoko Rich, “North Korea Launch Could Be Test of New Attack Strategy, Japan Analysts Say,” *New York Times*, 6 March 2017, <https://www.nytimes.com/2017/03/06/world/asia/north-korea-missiles-japan.html>.

41. “China’s ‘Rocket Force’ Conducts First Drill of New Year,” CGTN, 3 January 2016, <https://www.youtube.com/watch?v=RLq9raPMwDo>. Within the clip, the opponent is described as a “permanent enemy, the Blue Team, a specialized IT troop that posed trouble through electromagnetic waves.” See also “PLA Rocket Force brigade holds night combat drill,” CGTN, 18 April 2018, <https://www.youtube.com/watch?v=LeOeHJN5RsM>.

42. For example, consider a scenario where on the eve of crisis an adversary disperses a number of dual-capable intermediate-range mobile ballistic missiles. If the United States is uncertain of whether they are armed with conventional or nuclear warheads, a US commander may hesitate to attack these systems (and thus potentially escalate a “conventional”

crisis or conflict into a nuclear crisis or conflict) even though they pose a direct and strategically significant risk to a deployed task force, forward bases, or key transport/resupply nodes.

43. DOD, “Remarks by Secretary Carter to Troops at Minot Air Force Base, North Dakota,” 26 September 2016, <http://www.defense.gov/News/Transcripts/Transcript-View/Article/956079/remarks-by-secretary-carter-to-troops-at-minot-air-force-base-north-dakota>; Robert Scher, Statement before the Senate Armed Services Subcommittee on Strategic Forces, 9 February 2016, 3, http://www.armed-services.senate.gov/imo/media/doc/Scher_02-09-16.pdf; and David Trachtenberg and John Hyten, “Nuclear Posture Review Conference,” National Defense University, 16 February 2018, <https://www.c-span.org/video/?441268-2/nuclear-posture-review-part-1>.

44. Vincent A. Manzo, “After the First Shots: Managing Escalation in Northeast Asia,” *Joint Force Quarterly* 77 (April 2017), <http://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-77/Article/581877/after-the-first-shots-managing-escalation-in-northeast-asia/>; Keith Payne, John S. Foster Jr., Kathleen Bailey, Kevin Chilton, Elbridge Colby, Matthew Costlow, et al, *A New Nuclear Review for a New Age* (Fairfax, VA: National Institute Press, 2017), <http://www.nipp.org/wp-content/uploads/2017/06/A-New-Nuclear-Review-final.pdf>; Keith Payne, “New Threat Realities and Deterrence Requirements,” National Institute for Public Policy Information Series, no. 415, 30 January 2017, <http://www.nipp.org/wp-content/uploads/2017/01/IS-415.pdf>; Vincent Manzo and Aaron R. Miles, “The Logic of Integrating Conventional and Nuclear Planning,” *Arms Control Today*, November 2016, https://www.armscontrol.org/ACT/2016_11/Features/The-Logic-of-Integrating-Conventional-and-Nuclear-Planning; Brad Roberts, *Extended Deterrence and Strategic Stability in Northeast Asia*, Visiting Scholar Paper Series, no. 1 (Tokyo: National Institute for Defense Studies, 9 August 2013), <http://www.nids.mod.go.jp/english/publication/visiting/pdf/01.pdf>; Elaine Bunn, “Can Deterrence be Tailored?,” *Strategic Forum* no. 225, National Defense University Institute for National Strategic Studies; and Elbridge Colby and Burgess Laird, “Managing Escalation and Limiting War to Achieve National Objectives in a Conflict in the Western Pacific,” CNAS Paper, August 2016, <http://hdl.handle.net/10945/49800>.

45. DOD, *NPR*, viii, 21, 36, 57, 58.

46. This is not to say there have not been important improvements. The 2018 Nuclear Posture Review brought with it a renewed focus on nuclear deterrence in professional military education. However, shortfalls in curriculum dedicated to deterrence remain. Often nuclear deterrence is captured in only a handful of electives (if offered) or implicitly woven into broader course lessons; as such, deterrence education for the majority of officers across the services continues to fall short of developing comprehensive knowledge of either the role of US nuclear forces in deterrence or the deterrence and allied assurance challenges posed by adversary nuclear forces and hybrid nuclear-conventional forces. See Paul I. Bernstein, “Deterrence in Professional Military Education,” *Air and Space Power Journal* 29, no. 4 (July-August 2015): 84–88, https://www.airuniversity.af.mil/Portals/10/ASPJ/journals/Volume-29_Issue-4/C-Bernstein.pdf.

47. DOD, *NPR*, 21. “U.S. forces will ensure their ability to integrate nuclear and non-nuclear military planning and operations. Combatant Commands and Service components will be organized and resourced for this mission, and will plan, train, and exercise to integrate U.S. nuclear and non-nuclear forces and operate in the face of adversary nuclear threats and attacks.”

48. See, for example, figure VI-1, “The Conflict Continuum” in *Joint Operations*. Joint Publication 3-0, *Joint Operations*, 17 January 2017: vi–2.

49. We note that there are likely more areas of separation that must be removed for full integration. However, this approach is more detailed and concrete—and thus more helpful—than

previous attempts to define integration requirements, which often simply describe a divide between conventional and nuclear forces.

50. See, for example, the following description of “The Instruments of National Power and the Conflict Continuum” within the Executive Summary of *Joint Operations*: “The potential range of military activities and operations extends from military engagement, security cooperation, and *deterrence in times of relative peace* up through major operations and campaigns that typically involve large-scale combat” (emphasis added). *Joint Operations*, x.

51. For example, an integrated response by these three actors during a crisis could include the joint force commander deploying sea assets armed with cruise missiles, fifth-generation aircraft, and persistent intelligence, surveillance, and reconnaissance to the area, providing stealth and standoff strike capabilities (and enablers) that can find and destroy these forces. Further, the USSTRATCOM commander could announce that B-2s will provide “continuous coverage” of the area for the duration of the crisis. The president could issue a statement that any form of nuclear employment against US or allied forces abroad or afloat will be considered a “nuclear attack against the United States,” will prompt a “devastating response” against the adversary, and that adversary political and military leaders “at the highest levels” will be held responsible.

52. DOD, *NPR*, viii.

53. DOD, *NPR*, 25–27; and DOD, *Deterrence Operations Joint Operating Concept*, 44.

54. See Keir A. Lieber and Daryl G. Press, “Preventing Escalation During Conventional Wars,” Project on Advanced Systems and Concepts for Countering WMD (PASCC), Naval Postgraduate School, February 2015.

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