The Heritage Foundation

BACKGROUNDER

No. 3928 | SEPTEMBER 3, 2025

DOUGLAS AND SARAH ALLISON CENTER FOR NATIONAL SECURITY

The Nuclear Force Requirements of a Protracted Conventional War

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KEY TAKEAWAYS

The United States lacks the capabilities to fight a limited nuclear war—China and Russia do not.

Right now, the United States' plausible responses to theater nuclear escalation are to do nothing, escalate to strategic nuclear war, or forfeit the fight.

The U.S. must establish a robust theater nuclear deterrent that can respond to local nuclear escalation and reduce its dependence on strategic nuclear deterrence.

Both Russia and the People's Republic of China (PRC) field nuclear arsenals that are postured and optimized for warfighting, as evidenced by their increasing numbers of nuclear-capable theater-range weapons.[1] Russia, for its part, has an arsenal of 1,000 to 2,000 non-strategic nuclear weapons, and the PRC has at least 500 DF-26 intermediate-range ballistic missiles capable of carrying conventional or nuclear warheads.[2]

Moreover, the PRC's rapid expansion of its strategic nuclear arsenal is giving Beijing an assured and credible second-strike capability, preventing the U.S. from credibly threatening it with overwhelming strategic strikes and thus giving Beijing more latitude to engage in theater nuclear escalation.[3] As the PRC approaches parity in the strategic nuclear forces, it will be able to threaten the U.S. homeland more credibly and use that leverage to deter U.S. involvement

in a regional war. Both adversaries are also constructing large, hardened command bunkers, designed to enable Moscow and Bejing to maintain command and control of their forces amidst a nuclear war.[4]

The United States, by contrast, lacks the capability to fight a limited nuclear war. It has roughly 200 non-strategic nuclear weapons, all gravity bombs, which are primarily based in Europe.[5] As the authors argued in March of this year, this asymmetry in non-strategic forces leaves Washington ill-prepared to deter regional nuclear aggression because it lacks credible response capabilities.[6]

Moreover, while the United States would likely have to project military power across the globe in a conflict with either Russia or the PRC, both Moscow and Beijing would have the advantage of fighting in their respective peripheries. Given this geographic challenge and the potential asymmetry of political stakes in such a conflict, either adversary could engage in coercive limited nuclear escalation, based on an assessment that (1) the United States' interests were not sufficient for it to risk further escalation; (2) it was possible to end the conflict on terms acceptable to them, without significant additional loss of manpower or treasure; and (3) the United States was unlikely to respond in kind.[7]

Moreover, both Russia and the PRC would be less reliant on vulnerable intelligence, surveillance, and reconnaissance (ISR) and positioning, navigation, and timing (PNT) assets, as neither would have to project power far beyond their respective areas of operations. Thus, Russia and the PRC both enjoy political and operational advantages over the United States in regional nuclear war scenarios, incentivizing them to escalate.

Russian and Chinese leaders might recognize, however, that the United States is immensely powerful, and they might therefore fail to achieve their respective regional objectives with conventional forces alone. Thus, both Moscow and Beijing are incentivized to preserve the option to escalate with theater nuclear weapons to achieve decisive strategic and operational effects if conventional operations fail to do so. Indeed, Russia increasingly views its theater nuclear forces as a substitute for its conventional inferiority.[8]

Fighting a Limited Nuclear War with Current U.S. Capabilities

This *Backgrounder* examines the challenge of responding to an illustrative adversary nuclear strike in a regional war.

If either Russia or the PRC were to launch a coercive, limited nuclear strike during an ongoing regional war, the United States would have three

bad options. First, the United States could terminate the conflict and accept defeat. Such a response would signal that Washington was unwilling to defend its allies beyond the nuclear threshold and would likely result in the collapse of the U.S. alliance system.

Second, the United States could elect to continue fighting without employing nuclear forces. This option would signal restraint, but it would fail to punish an adversary for crossing the nuclear threshold. An adversary might therefore continue using nuclear weapons, either for the operational benefits associated with nuclear use or for subsequent coercive efforts. Indeed, adversary nuclear employment might be a rational strategy in such a scenario, if the adversary had suffered little cost for employing nuclear weapons in the first case.

Third, the United States could retaliate with its own limited nuclear strike, accepting the risk of fighting a nuclear war. While this option might enable the United States to restore intrawar deterrence—demonstrating to an adversary that the costs of nuclear use would exceed the benefits—it would also likely hamstring U.S. conventional operations because of the options Washington has to execute such a strike.

The most likely candidate for a reciprocal limited nuclear strike that is currently in the U.S. arsenal is a weapon—either a gravity bomb or an air-launched cruise missile (ALCM)—delivered by a long-range bomber or a nuclear-capable fighter. Responding to a limited nuclear escalation with either intercontinental ballistic missiles (ICBMs) or submarine-launched ballistic missiles (SLBMs) would represent a significant escalation as these are both strategic delivery platforms equipped with high-yield warheads. The United States does have a small number of W76-2 low-yield SLBM warheads, but it would be impossible for an adversary to distinguish an SLBM equipped with a high-yield warhead from an SLBM equipped with a W76-2, thus carrying significant escalation risks.[9]

Thus, the United States is likely to prefer the air-delivered option. This could include a fighter or a bomber carrying a B61 gravity bomb or a bomber launching a nuclear-armed ALCM. Both have low-yield options, but the B61 gravity bomb, which has a lower yield option and can be carried by either bomber or fighter aircraft, would be the best candidate to respond proportionately.

Diversion of Bombers. Employing the B61 in a regional war would significantly degrade the tempo of U.S. conventional operations. Given that the B61 is a gravity bomb that cannot be launched from stand-off range, and given that both Russia and the PRC have large, capable networks of integrated air defense systems (IADS), the most likely candidate for delivering

the weapon is a long-range penetrating stealth aircraft—likely a B-2 Spirit bomber or its next-generation successor, the B-21 Raider.[10] Given that these assets are the only U.S. aircraft with both the range and the stealth attributes required to penetrate defended airspace, they would also be essential in a conventional air campaign. Thus, conducting a limited nuclear strike would require diverting these aircraft from conventional operations to nuclear operations.

Some portion of the bomber fleet would already have been diverted at the outset of the conventional conflict—withheld by U.S. Strategic Command (STRATCOM) at air bases in the continental United States for nuclear alert. Based on Cold War nuclear alert rates, around 25 percent of nuclear-capable bombers and tankers would likely be withheld, and the Commander of STRATCOM might request additional withholds after an adversary nuclear employment.[11] Thus, independent of the hypothetical retaliatory strike mission, *at least* a quarter of U.S. long-range bombers would likely be unavailable to the theater commander. Generating the nuclear strike package would likely further reduce the number of available bombers.

Diversion of Supporting Aircraft. Beyond diverting strike platforms from conventional operations, executing such a nuclear strike would also require diverting enabling aircraft like tankers, airborne warning and control system (AWACS) aircraft, electronic warfare aircraft, and fighter escort aircraft. For example, Operation Midnight Hammer—the June 2025 U.S. strike mission against Iranian nuclear sites—used at least 118 aircraft to support just seven B-2 bombers carrying the strike package.[12] A similar strike against a near-peer adversary would be far more challenging, as Iran has relatively primitive air defense capabilities which had already been degraded by the Israeli Air Force in the days leading up to the Midnight Hammer strike.[13]

STRATCOM would require large numbers of these supporting aircraft to generate the bomber mission described above. In 2016, for example, STRATCOM conducted exercise Polar Roar, which used 25 tankers to support just five bombers.[14] Depending on the distance the strike package would have to travel, STRATCOM may require a greater ratio of tankers to bombers. AWACS, electronic warfare, and fighter aircraft would likewise be diverted from their conventional missions in large numbers.

Impact on Conventional Operations. An ongoing conventional air campaign would not only pause for days on end to generate and execute a low-yield bomber strike—much of the overall conventional fight that did not rely on maritime assets would also pause because these aircraft enable logistics and sustainment for all forward-deployed forces. Moreover, due

to the limited number of low-yield options in the American arsenal, the United States could probably only generate one to two rounds of low-yield strikes before it would be forced to rely on high-yield, strategic weapons.

While such complications would be particularly acute for low-yield gravity bomb missions, even bomber-delivered nuclear stand-off strikes from a very stealthy and highly survivable platform such as the B-21 would require a significant number of support and sustainment aircraft. While a B-21 launching a next-generation nuclear cruise missile at an adversary would be less taxing than delivery by a B-52 or even a B-2 delivering a gravity bomb, the impact on conventional operations would remain, nonetheless. Further, a B-21 that is able to penetrate enemy air defenses with a gravity bomb reduces the chance that enemy IADS would engage and destroy the inbound nuclear-armed ALCM. For this reason, a penetrating stealth platform carrying a B61 remains, all things considered, a preferable option to signal restraint and resolve following a limited adversary nuclear employment within a confined theater of operation. But, as noted, all air-launched options would impose significant costs on the ongoing conventional campaign.

Plausible Outcomes

The United States is not postured to fight a limited nuclear war outside of a very narrow and sub-optimal set of operational constraints. Doing so would require either escalating to strategic nuclear warfare immediately or hamstringing conventional operations for an extended period. By contrast, both Russia and China are postured for such a conflict. This reality incentivizes limited nuclear escalation by Russia or the PRC, given that both Moscow and Beijing recognize that the United States would struggle to fight a protracted conventional war and that Washington would struggle to respond to limited escalation.

While Russia or the PRC could employ limited nuclear strikes to coerce Washington directly, they could also escalate to further complicate the operational requirements of conventional protraction. Cratering the runways at Andersen Air Force Base in Guam—the central aerial logistics node for all U.S. forces operating west of the International Date Line—with conventional weapons would require the People's Liberation Army Rocket Force (PLARF) to fire repeated salvos of expensive weapons, all the while knowing that the United States could repair the runways quickly. If the PLARF employed nuclear weapons on Andersen, however, a single surface burst would destroy much of the base, making it unusable for an extended

period and crippling the U.S. regional logistics network.[15] Given that forward-deployed U.S. forces also depend on allies for basing and overflight, Beijing or Moscow could use limited nuclear strikes to manipulate allies' perceptions of risk and limit U.S. forces' maneuver in the area of operations.

Consequently, if the United States attempted to fight a nuclear war with its current forces, it would likely both cede the initiative to its adversary at the conventional level and lose a theater nuclear war, too. Protraction and limited nuclear escalation present distinct but related challenges to U.S. military planners. The United States must solve *both* problems if it hopes to deter regional wars with its peer adversaries.

Implications for U.S. Nuclear Posture

The United States needs a nuclear posture that can credibly deter limited, non-strategic nuclear war without either forcing it to escalate to central, strategic war or forcing it to lose an ongoing conventional fight. This *Backgrounder* does not directly address the conventional force requirements of protraction, but it does identify a future U.S. theater nuclear force posture that, if employed, would have a lesser impact on ongoing conventional military operations.

Long-range penetrating bombers and stealthy fast-attack submarines are useful platforms for delivering theater nuclear weapons, especially in the Indo–Pacific.[16] However, these attributes of both platforms make them useful for prosecuting conventional operations, too. Every B61 gravity bomb or long-range nuclear-capable ALCM loaded onto a B-21 Raider means fewer conventional munitions, and every nuclear sea-launched cruise missile deployed on a fast-attack submarine means one less conventional cruise missile in its vertical launch system tubes. While this trade-off is likely necessary in some instances, generating the U.S. theater nuclear deterrent should not come at the expense of conventional operations.

More diverse theater nuclear delivery platforms can spread the mission more widely across platforms and lessen the impact of non-strategic nuclear force generation on conventional operations. Ground-launched nuclear options have significant operational utility and would be less likely to impair conventional operations. The United States has only recently begun fielding ground-launched cruise missiles and ballistic missiles—platforms it could not develop until the first Trump Administration withdrew from the Intermediate-Range Nuclear Forces (INF) Treaty in 2019.[17]

INF-range systems, ground-launched missiles with ranges between 500 kilometers and 5,500 kilometers, are a relatively new class of weapon for

the Army, so assigning them a nuclear mission would not undercut existing conventional systems. Moreover, increasing the demand for these systems could create more robust economies of scale and drive down the unit price of the missiles and launchers. While deploying these systems on allies' territory would present a near-term political-military challenge to Washington, fielding these systems and deploying them forward will enhance extended deterrence and assurance.[18] Allies should welcome efforts to close the theater nuclear deterrence gap.

To plan responsibly for protracted war with peer great powers, the United States must prepare for its adversaries to engage in coercive nuclear escalation. It must establish a robust theater nuclear deterrent that can respond to local nuclear escalation and therefore reduce its dependence on strategic nuclear forces for theater deterrence. Right now, its plausible responses to theater nuclear escalation are either to do nothing, escalate to strategic nuclear war, or forfeit the conventional fight. That reality is unacceptable and invites adversary escalation.

Filling the theater deterrence gap will also contribute to conventional deterrence by demonstrating a capability to both deny an adversary the benefits of escalation and impose substantial costs on an adversary for engaging in any kind of aggression. The United States must field a more capable theater nuclear arsenal that can be generated without impairing conventional operations.

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