

Russia and China Are Running in a Nuclear Arms Race While the United States Is Jogging in Place

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KEY TAKEAWAYS

The United States is entering a new period of nuclear instability with Russia and China.

During this period, the incentives for Russian and China to employ nuclear weapons during conflict may increase.

The U.S. should ensure that it has the right policies, plans, and capabilities to deter Russia and China from using nuclear weapons during conflict.

The expansion of nuclear arsenals in Russia and China, coupled with the increasing number of threats against their neighbors, points to an uncertain security future. Indeed, given this expansion, and the slow pace of U.S. nuclear modernization, the incentives for Chinese or Russian nuclear deployment during times of crisis will increase.

In a purely conventional conflict in which a U.S. adversary enjoys a superiority in theater nuclear systems (systems that can deliver nuclear warheads to targets several hundred to a few thousand miles away), that adversary may be willing to employ nuclear weapons to either force the United States out of the fight or to regain the initiative in a conventional conflict if it concludes that it is losing.

Compounding this fact, the current American nuclear arsenal was developed to deter aggression and nuclear coercion from a single actor: the Soviet Union.

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During the Cold War, the rules of deterrence were clearly understood. In today's world—where the United States must deter not one but two nuclear peers, as well as the expanding North Korean nuclear arsenal—the capabilities required to deter aggression and strengthen strategic stability are more diverse than what is contained in the legacy American nuclear arsenal.

The United States therefore should take the steps necessary to counteract this emerging nuclear instability by developing the plans, policies, and capabilities needed to effectively deter Russia and China from employing nuclear weapons during times of acute crisis and conflict. Doing so would better serve the United States, strengthening strategic stability: the absence of incentives for a power to launch a nuclear first strike against an adversary's nuclear forces during a general war.

A Changing Security Environment

It is, at this point, almost facile to say that the global security order is destabilizing. From Russia's invasion of Ukraine to China's increasingly threatening stance toward Taiwan, there is a general sense that the global order is at an inflection point.¹

While there are some bright spots on the darkening security landscape—including allies and partners in Europe and the Indo-Pacific countering aggression and a Russian invasion that is proving enormously costly to Moscow—there is one area where the United States is dramatically falling behind: the ability to deter adversaries from employing theater nuclear weapons during a conflict.

There have been significant changes in the nuclear landscape of the past several years. To begin with, Russia has expanded and diversified its nuclear arsenal since at least 2008, giving it a range of different warheads with a number of yields on a variety of systems.² In addition, China is expanding and diversifying its own strategic and non-strategic nuclear arsenals.³

Further, the Russian withdrawal from New START and China's repeated unwillingness to even discuss nuclear arms limitations measures mean there are no limitations on the Russian or Chinese nuclear arsenals.⁴ In addition, Russia's invasion of Ukraine and China's apparent willingness and ability to invade Taiwan, combined with renewed concerns about an Iranian bomb and the expansion of the North Korean nuclear arsenal—all point to a degrading global security environment.⁵

Meanwhile, the United States, with the notable exception of a new sea-launched cruise missile program, is pursuing a “one-for-one” nuclear modernization program that began in 2010.⁶

Put another way, while the autocrats in Beijing, Moscow, and Pyongyang (and potentially Tehran) are running in a nuclear arms race, the United States is jogging in place.

Consequently, nuclear stability, also known as strategic stability, is eroding, particularly at the theater nuclear level.

As noted earlier, strategic stability refers to the absence of incentives to launch a nuclear first strike, particularly against an adversary's nuclear forces, as part of a general war.⁷ Maintaining strategic stability was a central component of the Cold War, as it kept acute crises from devolving into open conflict.⁸

In the nuclear age, if either side has an incentive to strike first with nuclear weapons—because the benefits of striking first are so large and the consequences of *not* striking first are so grave—then crises that might otherwise be settled diplomatically could erupt into nuclear war.⁹

During the Cold War, both sides addressed this problem out of fear that a future diplomatic crisis could lead to an escalatory spiral ending in nuclear war that neither side wanted, but neither side knew how to avoid nuclear war once they embarked upon that path.¹⁰

During the early part of the Cold War, both sides expanded and diversified their strategic arsenals to ensure that no adversary first strike would be effective enough to destroy their nuclear weapons in an opening salvo of a war.¹¹ By denying the ability of one side to destroy a nuclear arsenal, states could reduce incentives for such a first strike. Later in the Cold War, both sides cooperated to a modest extent to establish structures that strengthened strategic stability.¹² Such structures included arms control treaties, verification activities, and confidence-building measures. In this way, little by little, arsenal sizes shrank as the incentives for, and chances of, nuclear war decreased.

Over the past 20 years, however, these structures and mechanisms have eroded. Indeed, as Russia and China invest in theater nuclear weapons—in which the United States has largely divested—and as nuclear arms control has died, new incentives for Russia and China to employ nuclear weapons in a defined theater of operations during times of acute crisis are emerging.¹³

Understanding the Incentives for a Limited Employment of Nuclear Weapons

For the sake of argument, let us posit that any U.S.-led coalition could defeat Russia or China in a purely conventional conflict. Let us also posit that disincentives to attack each other's strategic nuclear arsenals, located in the missile fields of their homelands, remain strong. Indeed, given the size of the intercontinental ballistic missile (ICBM) and bomber forces in

Russia, China, and the United States, coupled with some degree of submarine-based survivable second-strike capability, any nuclear strike designed to destroy an opponent's strategic nuclear arsenal would likely not only fail but trigger a general nuclear war of immense size and destructive capacity. In short, the existing *strategic* arsenals capable of touching any location on the planet deter China, Russia, and the United States from escalating a conflict to a general nuclear exchange.

As noted earlier, in a purely conventional conflict in which an adversary (say, China) does not have unquestioned dominance but enjoys a superiority in theater nuclear systems (that is, systems that can deliver nuclear warheads to targets several hundred to a few thousand miles away), that adversary may be willing to employ nuclear weapons either to force the United States out of the fight or to achieve operational effect that will allow it to regain the initiative in a conventional fight it concludes it is losing.

In the western Pacific, the absence of American theater-range nuclear forces is striking. The United States removed its nuclear forces from Korea in 1991 and retired the nuclear variant of the Tomahawk cruise missile (a system ideally suited to theater deterrence in the Pacific) following the 2010 *Nuclear Posture Review*.¹⁴

During the past decade and a half, however, China developed a wide variety of theater-range, nuclear-capable missiles that can target American and allied bases across the western Pacific.¹⁵ This means that should the United States choose to respond to a Chinese theater-range, low-yield nuclear weapon (less than 25 kilotons of explosive power) with a nuclear weapon of its own, it would have to choose from its strategic, high-yield nuclear weapons (with a few hundred kilotons of explosive power) based in the U.S. homeland or from a low-yield gravity bomb flown from the United States or Europe. While the United States has a submarine-based low-yield warhead, the highly constrained number of such weapons makes any retaliation with such a system extremely limited.

While the prospect of using a low-yield gravity bomb may be attractive on its surface, the advances in enemy air defenses make flying directly over a target extremely risky. In addition, the movement of such weapons out of Europe would almost assuredly cause tensions within NATO and potentially create other second-order effects in Europe.

While the United States has strategic nuclear systems that can hit any target in the world, responding to a relatively low-yield theater nuclear strike with ballistic missiles or nuclear-capable bombers generating out of the U.S. homeland would create a few potential problems:

Conflict Escalates. Using a high-yield weapon in response to a low-yield weapon would be a significant escalation of the conflict. Such an escalation

is not necessarily a bad thing, but it does run the risk that both sides might find themselves in an escalatory spiral from which they do not know how to extricate themselves. Indeed, using a strategic nuclear weapon that is 10–100 times more destructive than the initial low-yield nuclear weapon may not be a viable response because of the disproportionality between the yields.¹⁶

U.S. Homeland Becomes an Operational Theater. Using intercontinental-range systems generating from the U.S. homeland to strike an adversary, particularly if hitting the adversary’s homeland, may mean that the conflict is no longer confined to a theater of operation but may encompass the homeland itself, meaning that cities and bases in the U.S. homeland may become fair game for a strike by adversary forces. In addition, such strikes make it more likely that the adversary will attempt to destroy the U.S. strategic nuclear arsenal before the United States can destroy theirs. This “use it or lose it” phenomenon is the exact undesired escalatory spiral that policymakers feared and sought to avoid during the Cold War.¹⁷

Indeed, the entire purpose of using theater-range systems to hit targets within an area of operation is to limit the conflict by not threatening the adversary’s regime. Using weapon systems that are high yield and capable of striking any target on the planet opens the door to strikes upon the U.S. homeland—because these weapons are designed to and capable of destroying the adversary’s regime.

China Could Choose a U.S. Coalition Target. Continuing with the notional scenario of a U.S.–China conflict, there is an asymmetry of potential targets in a fight between China and a U.S.-led coalition. That is, China can select targets in Australia, Guam, Japan, the Philippines, and Taiwan. Such targets are critical to the flow of forces into theater and the generation of combat power. Striking those targets with nuclear weapons would impact the United States’ ability to generate combat power without striking the American homeland itself. On the other hand, the only real targets for a possible retaliatory nuclear strike against China would be the Chinese mainland. While the United States could certainly strike military targets in China, such as air bases or key naval ports, such a strike with a nuclear weapon (which would probably be a high-yield strategic weapon) would raise the prospect that China would strike the American homeland as part of a retaliatory response in kind.

This is not to say that the United States would never use its strategic weapons to respond to a theater-range, low-yield nuclear strike, even one conducted against a non-U.S. target. Nor is it to say that any such strike would immediately trigger an adversary nuclear strike on the American homeland. But the chances of escalation increase significantly if the United

States responds to a theater-range, low-yield nuclear weapon with a high-yield intercontinental-range weapon—to the point that the credibility of such a strike (that is, the perception of America’s willingness to conduct such a strike) could be called into question by Beijing.¹⁸ This lack of credibility directly erodes strategic stability.

While thus far this *Backgrounders* has focused on a notional conflict with China, the problem is far greater than simply China. There are any number of scenarios in which an adversary could employ theater-range or low-yield nuclear weapons and the United States would be hard pressed to respond in kind. Such scenarios include Russia employing theater nuclear weapons against Ukraine to stave off conventional defeat (and in which the non-strategic nuclear weapons stationed in Europe are off the table due to a divided NATO), a North Korea that increasingly relies upon its expanding nuclear arsenal to maintain relevance, and a potential future Iran that engages in nuclear coercion.

Indeed, the consequences are that, should a direct conflict between the United States and China or Russia break out, there is a real chance that the adversary could escalate to theater nuclear strikes should it deem it necessary to win the war. And that is a kind of war the United States is currently postured to lose.

Preparing to Navigate a Period of Strategic Instability

When incentives exist for an actor to employ nuclear weapons during a conflict, then there is strategic *instability* at the theater nuclear level. Given the timelines needed to produce new—particularly new nuclear—capabilities, it is very possible that the next 15–20 years will be highly unstable at the theater nuclear level.

What, then, can the United States do to restore stability?

To begin with, the United States should re-examine the force posture and capabilities needed to deter adversaries from escalating to a limited, theater nuclear war during conflict. Before the weapons themselves are built, the United States should understand the requirements of deterring two near-peer nuclear adversaries at the same time while also attempting to re-stabilize the security environment at the theater level. This will require understanding what strategies, policies, plans, and capabilities are needed to deter nuclear escalation by both Russia and China.

To some extent, this is happening now. As then–U.S. Strategic Command’s Admiral Charles Richard said in 2022, “[W]e can start by rewriting deterrence theory.... [I]t’s actually working quite well in the current [Ukraine] crisis—that is radically different: non-linearity, linkages, chaotic behavior,

inability to predict—all attributes that just don't show up in classic deterrence theory."¹⁹

Required capabilities include not just warheads and missiles but also integrated air and missile defenses. Modernized nuclear command, control, and communications architecture and nuclear deterrence decision-making and situational awareness architectures are also needed to ensure that the force can execute deterrence operations if so ordered. Finally, the diversity of nuclear warheads and associated delivery platforms (along with the proper force mix and size) matter as well.

The United States does not need to build as many nuclear weapons as Russia and China combined in order to deter both actors—nor does the United States need all the wide varieties of nuclear systems that Russia has or the array of missiles that China has. More analysis is needed, however, to determine how many nuclear warheads are needed to strengthen stability at the strategic level (and after more than three decades of shrinking nuclear arsenals due to arms control measures, the United States may have to consider expanding the size of its strategic arsenal given Russian and Chinese actions) and how diverse its nuclear capabilities must be in order to deter adversaries from escalating to a limited theater nuclear war.

There are several potential actions that could strengthen U.S. capabilities to deter nuclear war in the near to medium term. These include potentially uploading additional nuclear weapons to ballistic missile and bomber forces; developing anti-ship nuclear capabilities; and developing and fielding mobile, ground-based (strategic and non-strategic) nuclear systems.

Perhaps most importantly, the United States should reinvest in its human capital. Nuclear physicists and warhead designers are needed to revitalize the arsenal, as are nuclear strategists, but so are highly skilled welders, fabricators, and machinists.²⁰ The United States should have the workforce and the physical infrastructure to produce the fissile material and associated materials needed for the arsenal to work.²¹

While some additional costs will be incurred, primarily from fielding additional theater-range nuclear missiles and strategic ground-based nuclear systems, the costs should not be prohibitive. If the Defense Department used existing programs of record (such as using the new nuclear sea-launched cruise missile program as the basis for theater-range mobile ground-based missiles and the existing Sentinel ICBM replacement program as the basis for mobile ground-based strategic systems), additional research and development costs would be minimal. Most of the costs would stem from additional purchases of individual units of missiles—but such additional purchases would drive down the per unit cost of those missiles

the United States already plans to purchase, much as the per unit cost to the F-35 is dropping.²²

Finally, deterring nuclear war is without question one of the most fundamental jobs of the Department of Defense. Even if the cost is significant, the United States has an obligation to ensure that the nuclear arsenal receives the funds it needs.

Conclusion

In short, the only way to restore stability at the theater nuclear level is for the United States to not only modernize the strategic nuclear arsenal but revitalize its theater nuclear force. To this end, the United States should:

- **Analyze overarching material and non-material requirements to deter theater nuclear adventurism**, particularly in the Pacific as China's nuclear forces grow with no signs of slowing;
- **Identify required plans, strategies, doctrine, and force posture requirements** through a series of analyses, exercises, and allied engagement efforts;
- **Establish and maintain robust and modernized nuclear command, control, and communications and decision-making architectures** so that deterrence actions and messages can be coordinated and executed in a timely fashion, particularly during acute crises and conflict;
- **Examine the required size and diversity of the overall nuclear arsenal** to include potentially expanding the strategic arsenal to pre-*New START* levels, adding more theater-range non-strategic nuclear weapons, and potentially adding an additional survivable second-strike capability in the form of road-mobile nuclear weapons; and
- **Revitalize American human capital** to ensure the capabilities necessary to field a credible and effective deterrent.

The current U.S. nuclear posture is insufficient to deter nuclear war. The United States should make significant changes to preserve nuclear stability.

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