The New Nuclear Arms Race

The Outlook for Avoiding Catastrophe

August 2020

By Akshai Vikram

PLOUGHSHARES FUND

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Cover: An unarmed Minuteman III intercontinental ballistic missile launches during an operational test at Vandenberg Air Force Base, Calif., April 26, 2017. Air Force Senior Airman Ian Dudley

Right: On 1952, the United States detonated its first full-scale H-Bomb, a Teller-Ulam thermonuclear device code-named Ivy Mike, on Enewetak Atoll. Photograph courtesy Los Alamos National Laboratory

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Executive Summary

During the Cold War, the United States and the Soviet Union only narrowly avoided nuclear war. At great domestic cost, Washington and Moscow pursued huge nuclear stockpiles that ultimately undermined their own security. After numerous crises, the superpowers grew to realize the dangers of nuclear weapons and worked together to build a robust arms control framework to reduce the risk of nuclear war. Yet the U.S. and Russia have since allowed much of that framework to wither. Today, the two countries are on the verge of a new arms race, with both sides investing in weapons that wrongly buy into Cold War-era myths.

The nuclear arms race is back. To stop it, the next U.S. president will have to take three crucial steps:

First, he will have to **stop the hemorrhaging of arms control by extending New START**, the sole remaining limit on U.S. and Russian nuclear weapons deployments.

Second, he should **mitigate the risk of accidental launch**. This should include adopting a No First Use declaratory policy, ending launch-on-warning for ground-based missiles, and canceling the Ground-Based Strategic Deterrent (GBSD).

Third, the next president must **work with Russia to roll back weapons that exacerbate the risk of nuclear conflict.** On the U.S. side, this includes the Trump administration's low-yield submarine-launched nuclear warheads, the first new nuclear weapon the U.S. has deployed since the Cold War, as well as the ineffective and destabilizing Ground-Based Midcourse Defense (GMD) system. On the Russian side, this includes nuclear-capable hypersonic missiles and the reintroduction of missiles previously banned by the Intermediate-Range Nuclear Forces Treaty.

The Cold War arms race was toxic. The production of nuclear weapons harmed civilians worldwide. The presence of nuclear weapons warped systems of government designed to limit executive power. Through multiple Cold War crises, nuclear weapons threatened the capacity of rational actors to control them. Accidents were too frequent, close calls too common. And the prioritization of nuclear weapons diverted resources from pressing national concerns.

Over time, leaders in both superpower capitals realized the dangers of the arms race, working together to construct seminal arms control agreements like the Intermediate-Range Nuclear Forces (INF) Treaty and the Anti-Ballistic Missile (ABM) Treaty. They also realized that the arms race was underpinned by a number of myths, namely 1) that nuclear weapons are merely more powerful conventional weapons, 2) that deterrence is stable, and 3) that ever-larger nuclear arsenals are necessary.

Today, Washington and Moscow have abandoned much of the arms control framework they built together, while also embracing Cold War-era myths they had previously discarded. Both sides are at fault. The U.S. has displayed interest in limited nuclear warfighting through its development and deployment of a new low-yield nuclear weapon for the Trident submarine. Russia violated the INF Treaty. Unrealistic technological programs like the U.S. Ground-Based Mid-course Defense (GMD) and new Russian missiles, including hypersonic missiles, undermine arms control while still failing to achieve their stated defense purposes.

Each of these dynamics is underpinned by a myth that should have been debunked by the Cold War. As Ronald Reagan and Mikhail Gorbachev argued: "A nuclear war can never be won and must never be fought." The instability of deterrence requires that both countries take a closer look at the escalatory and miscalculation potential of their new weapons systems, whether offensive (Russian missiles) or defensive (U.S. missile defense). The Cold War showed the inefficacy of nuclear stockpiles numbering in the tens of thousands. There is no reason for the U.S. and Russia to recommit to their current nuclear postures.

The U.S. and Russia still have time to avert a new nuclear arms race. But to do so, they must act decisively, purposefully, and quickly.

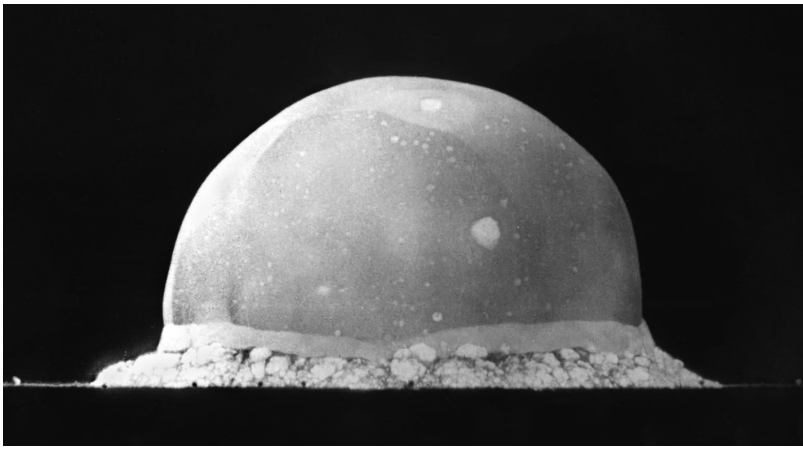
Introduction

Seventy-five years ago, the Manhattan Project first produced nuclear weapons. In the decades that followed, Washington and Moscow ran a terrifying nuclear arms race, eventually producing over 64,000 nuclear weapons. Despite the vast sums of resources spent on nuclear weapons, leaders in both capitals gradually realized that running an arms race was making both sides less safe. Over the course of the Cold War, the U.S. and the Soviet Union constructed an international arms control regime to rein in the nuclear risks unleashed by the Trinity Test in 1945.

Today, both countries are jettisoning that arms control infrastructure. They have apparently forgotten that the only way to win an arms race is to refuse to run. Rather than combat modern, twenty-first century threats, both countries are gearing up for another twentieth-century-style arms race. Not only would such a competition distract attention and divert resources from more pressing problems, chief among them climate change and infectious diseases, it would also severely undermine the very national security it purports to defend.

The coronavirus pandemic should change the way we think about national security. As events of the past months have made clear, neither the U.S. nor Russia was adequately prepared for this crisis. For the U.S. in particular, this should be a wake-up call. Despite the many trillions of dollars spent on defense and national security since the Cold War ended, the U.S. has underperformed since the start of the pandemic. Indeed, throughout the post-9/11 era, the U.S. national security apparatus has misjudged priorities and budgets, stockpiling missiles when it should have been stockpiling masks. Even if the coronavirus were to disappear tomorrow, U.S. defense spending would still leave the nation underprepared for the looming human security threats most likely to harm U.S. citizens, including economic inequality, refugee flows, rising authoritarianism, and structural racism. With so many challenges, the U.S. cannot afford to squander resources on a self-defeating arms race.

In this environment, leaders in the U.S. and Russia must learn from the past. The world only narrowly survived the last nuclear arms race between these two powers. A second one must be stopped now – before it is too late.



The Trinity explosion, 16 ms after detonation. The viewed hemisphere's highest point in this image is about 200 metres (660 ft) high.

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Re-Examining the Cold War Arms Race

During the Cold War, the United States and Soviet Union built staggering amounts of nuclear weapons; at their peak in 1986, the joint stockpiles of the two superpowers totaled more than 64,000 warheads.[1] Today, the U.S. and Russia retain the vast majority of the world's nuclear weapons. By any metric, both countries remain far away from their legal commitments under the Nuclear Non-Proliferation Treaty (NPT) to "achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament."[2] Rather than rededicate themselves to reducing their nuclear stockpiles, Washington and Moscow have recently started to relapse into familiar, Cold War-era thinking on nuclear weapons. This threatens to spark a new arms race, especially as long-standing Cold War-era treaties are jettisoned. Both countries are poised to repeat the costly mistakes of the past.

Myths of the Cold War

From World War Two through the height of the Cold War, policymakers and academics bought into a number of myths regarding nuclear weapons. Nevertheless, throughout this period, policymakers and academics came to reject a number of these myths, eventually constructing a robust arms control framework. Today, with the memory of the Cold War fading, the myths are regaining believers and the arms control framework is collapsing. That is a perilous combination.

Myth #1: Nuclear Weapons Are Just Like Any Other Weapon

From the destruction of World War Two came the nuclear myth that nuclear weapons are the same as conventional weapons, just bigger, and that a limited nuclear war is therefore a reasonable possibility. Prime Minister Winston Churchill exemplified this line of thinking when he dismissed Niels Bohr's concerns over the atomic bombing by saying "this new bomb is just going to be bigger than our present bombs. It involved no difference in the principles of war."[3]

American military commanders would press for the atomic bomb to be used as "just another weapon" numerous times, from Korea to Berlin. Washington believed nuclear weapons were a cheaper alternative to conventional forces and relied on them to deter an attack on Western Europe and its West Berlin exclave. Over time, the Soviet Union and the United States developed so-called tactical nuclear weapons, presumably suitable for battlefield use. By the 1960s, such nuclear weapons could only be called low-yield in comparison with the massive explosive yields of the biggest thermonuclear weapons – often many times more destructive than the bombs used on Hiroshima and Nagasaki.

This atmosphere lulled many of the superpowers' national security leaders to believe a limited nuclear war could be fought. For instance, if the Soviets crossed the Fulda Gap into West Germany, the United States would presumably respond with low-yield nuclear weapons, theoretically affording the Kremlin the option to keep nuclear war limited.

It is clear that many of the most senior members of the nuclear policymaking community did realize the revolutionary nature of nuclear weapons. President Truman cautioned that "starting an atomic war is totally unthinkable for rational men[.]"[4] His successors, Presidents Eisenhower and Kennedy, agreed, with the former remarking that in a nuclear war "there is no victory except through our imaginations,"[5] and the latter echoing that sentiment in saying "there will not be winners in the next nuclear war[.]"[6] Indeed, as historian Francis Gavin has illustrated, neither President Eisenhower nor Kennedy believed in limited nuclear war.[7] Senior U.S. military leaders affirmed this

belief, debunking limited war theory by telling Kennedy "there is no way, no matter what we do, to avoid unacceptable damage in the U.S. if nuclear war breaks out."[8]

After the Berlin and Cuban Missile Crises of the Kennedy administration, skeptics grew bolder in challenging the belief that nuclear weapons were the same as other weapons. Strategists such as Thomas Schelling also realized limited nuclear war was impossible and that the moniker of tactical nuclear weapons was a misnomer, as the use of any nuclear weapon would have strategic consequences.[9] President Ronald Reagan and Soviet leader Mikhail Gorbachev emphasized this realization in the 1980s when they jointly stated, "A nuclear war can never be won and must never be fought."[10]

Myth #2: Nuclear Weapons Are A Source of Stability

Nuclear weapons are frequently derided for their indiscriminate violence, but they are also conceived of by some as guarantors of security. Political scientists such as Kenneth Waltz believed they prevented international conflict; the U.S. Strategic Air Command (SAC) went so far as to make its motto "Peace is Our Profession."[11] Such confidence is misplaced. At its theoretical best, deterrence is predicated on the mass killing of civilians. In practical reality, it exposes the inevitability of human error. Intentional attack can be deterred. Accidents cannot.

The earliest days of nuclear weapons were characterized by a certain kind of ethical dissonance. Manhattan Project scientists knew that the weapons were designed to kill civilians, yet in some ways deluded themselves into ignoring that fact. As early as 1940, a Manhattan Project report declared that "the bomb could probably not be used without killing large numbers of civilians [.]"[12] Nevertheless, President Truman wrote that he and War Secretary Henry Stimson would only drop the bomb on a military target.[13] Similar denial seems to have characterized many of the scientists involved, who minimized the import of what they were doing by placing bets on the explosive yield of the first test. Truman quickly came to understand that the bombs were fundamentally anti-city weapons: he reportedly refused to approve a third atomic bombing because he hated to think about killing "all those kids."[14]

The Japanese surrender immediately following the bombings would have a profound effect on post-war strategy. As Lawrence Freedman has argued, Hiroshima and Nagasaki "rescued the doctrine of strategic bombardment."[15] The mass violence inflicted at Dresden and Tokyo had not broken the back of enemy resistance, but the atomic bombings seemingly had. The doctrine of strategic bombing was saved.

By 1960, the lethality of nuclear war planning reached absurd proportions. The U.S. planned to respond to a Soviet attack with the Strategic Integrated Operational Plan (SIOP). The unified plan called for a massive nuclear attack on not only the Soviet Union and its satellites in Eastern Europe, but also on Communist China – regardless of whether the latter was even involved in the initial conflict. The expected casualties included 275 million killed in the first few hours and 325 million more in the following months.[16] When briefed of the plan, President Kennedy remarked "And we call ourselves the human race."[17]

One of two Mk.39 thermonuclear bombs rests in a field in Faro, NC after falling from a disintegrating B-52 bomber in an incident known as the "1961 Goldsboro B-52 crash."

Moral and practical limitations made this situation even more perilous. Military leaders resisted calls to minimize enemy casualties. As SAC commander Thomas Power put it, "the whole point is to kill the bastards."[18] Nuclear near-misses also scared leaders into realizing that such weapons, nominally designed to keep the peace, might be beyond the ability of people to restrain. The history of nuclear near-misses is long and terrifying, highlighted in particular by the Cuban Missile Crisis.[19]

The Cuban Missile Crisis was only partly resolved by the level-headed rationality of Kennedy and Khrushchev. Kennedy famously put the chances of nuclear war between one-in-three and even for those two weeks in October 1962, but he was being overly optimistic.[20] Several lucky breaks prevented the worst from happening. On October 25, an American black bear set off a sabotage alarm at a base in Minnesota, causing nuclear-armed fighters to scramble. They were only stopped when a man drove his car onto the runway to stop them.[21] On October 27, an American U-2 accidentally strayed into Soviet airspace. If it had been mistaken for a bomber, which it very well might have, it could have triggered a Soviet general response.[22] That same month, American radar mistook a satellite launch for a Soviet nuclear attack on Florida.[23] It would take decades for U.S. leaders to fully realize just how close they had come to nuclear war; in 1992, former Defense Secretary McNamara was stunned to discover that nuclear weapons on Cuba were already operational and could have been used to repel a U.S. attack. This, he said, would inevitably have led to a full-scale retaliatory strike against the Soviet Union.[24]

If such banal mishaps could happen during the most dangerous nuclear stand-off of the Cold War, surely the presence of nuclear weapons increases rather than decreases the risk of accidental use. Rather than stabilize politics, they continually threaten to destabilize politics through our own imperfections.

President Kennedy, General Curtis LeMay and reconnaissance pilots.

Myth #3: You Can Never Have Too Many Nukes

A third nuclear myth of the Cold War era was the belief that ever-larger arsenals were necessary. This was perhaps the most acute driver of the arms race. The seemingly limitless production of nuclear weapons in the U.S. had several key drivers, such as bureaucratic competition and inter-service rivalry. During the Cold War, all four military services, the Army, Navy, Air Force, and Marines, had nuclear weapons. As Robert Norris explained, inter-service rivalry was a major factor in the Cold War nuclear arms race because nuclear weapons "were the thing to have."[25] Pursuing prestige, the service branches requested astronomical numbers of nuclear weapons. In the late 1950s, a Lieutenant General testified before Congress that the U.S. Army needed 151,000 nuclear weapons. Exhibiting only slightly more restraint, the Commander-in-Chief of Strategic Air Command told President Kennedy the Air Force required 10,000 Intercontinental Ballistic Missiles (ICBMs). Some Navy officers even suggested the need for 100 nuclear-armed submarines. Occasionally, inter-service rivalry actually exposed redundancies across force posture, as in 1958 when the U.S. Navy began arguing (correctly) that the submarines made the existing land-based ICBMs superfluous.[26] When the Pentagon budget diminished after the Cold War, the U.S. Army and Marines were forced to relinquish their nuclear weapons.

Another key driver of the quest for ever-larger arsenals was concerns about nonproliferation and alliances. Both superpowers were concerned by their allies' attempts to acquire nuclear weapons for themselves. Some of this worry would eventually be justified, as several countries managed to acquire them over the resistance of either superpower. To restrain such proliferation, the U.S. pursued greater and greater stockpiles, hoping that such an action might reassure allies and increase superpower credibility to extended deterrence.[27] The Soviet Union responded by trying to match U.S. nuclear weapons production. For the U.S., extended deterrence to allies is no longer dependent on the overproduction of nuclear weapons, if it ever was. Today, the U.S. allies most technologically capable of producing their own nuclear weapons are resolutely opposed to basing new nuclear weapons or losing arms control agreements.[28]

Even during the Cold War, analysts and policymakers were beginning to poke holes in the myth of the need for ever-larger nuclear stockpiles. As early as 1956, President Eisenhower thought 150 ICBMs were enough to deter the Soviet Union. During the Cuban Missile Crisis, President Kennedy waxed plaintively about the existence of Soviet missiles in Cuba, saying "they've got enough to blow us up anyway."[29] The advantages of superiority have been debated repeatedly over the decades, but it is evident that at key moments nuclear superiority, in the sense of having more nuclear weapons, was not enough to 'win' a crisis. For instance, U.S. nuclear superiority in 1950 did not stop Soviet support of the North Korean invasion of South Korea,[30] nor did Soviet superiority in the late Cold War allow it to kick the Americans out of West Berlin.[31] Richard Nixon complained about the loss of U.S. nuclear superiority by the time he became president, yet his National Security Advisor Henry Kissinger professed no idea how to use superiority for any sort of advantage: "What do you do with it?"[32]

Despite the public and private admissions of Cold War leaders that the U.S. and Soviet stockpiles had reached ludicrous proportions, it took until the late 1980s for those combined stockpiles to begin to decrease.

Titan II ICBM at the Titan Missile Museum in Arizona. Flickr / Steve Jurvetson (cc)

The Lingering Legacy of Nuclear Myths

The Cold War arms race and the nuclear myths which underpinned it left a number of dangerous inheritances. First, there is the legacy of cost. Rather than redressing social and racial inequities at home, the U.S. squandered much of its postwar posterity on nuclear weapons it did not need. From 1940 to 1996, the U.S. government spent more on nuclear weapons than it did on all welfare payments.[33] Leaders going back to President Eisenhower have argued that there is an enormous opportunity cost to the mass production and maintenance of the U.S. and now-Russian stockpiles.[34] As Pope Francis put it, "In a world where millions of children and families live in inhumane conditions, the money that is squandered and the fortunes made [on nuclear weapons]… are an affront crying out to heaven."[35] Since 1945, the U.S. has spent over $10 trillion on nuclear weapons.[36]

Second, the Cold War also presented severe constitutional challenges to the U.S. separation of powers, creating inconsistencies that persist today. The U.S. Constitution affords Congress the exclusive ability to declare war. However, in the nuclear age, a president can initiate nuclear war on his or her sole authority. Given the consequences of nuclear war, such a decision is surely too weighty to place on any one person, even the president of the United States.[37] Unbeknownst to most Americans, if the president orders a nuclear attack, it would be extremely difficult if not impossible to stop him. Indeed, since Nagasaki, the U.S. has already had a few presidential close calls. In 1969, President Nixon suggested bombing North Vietnam with nuclear weapons; he was drunk and thereby ignored.[38] Undeterred, he went to do the same on multiple occasions in April 1972 alone.[39]

Aerial view of the Runit Dome. The dome is placed in the crater created by the "Cactus" nuclear weapons test in 1958.

While Nixon was likely not entirely serious – he did not go so far as to actually order an attack – the fact remains that such a drunken order, if given, would likely have been carried out. The Framers of the U.S. Constitution refused to give the president sole authority to make laws, levy taxes, or declare wars. Yet since Hiroshima, U.S. presidents have successfully appropriated the sole authority to use nuclear weapons, threatening all life on earth. The unconstitutionality of such an arrangement is a dangerous legacy of the Cold War, one that a new arms race threatens to reinforce rather than reform.[40]

Third, the production of nuclear weapons has costs that are all too frequently ignored. Throughout the Cold War, it was frequently the most vulnerable sections of Soviet and U.S. society that bore the most direct costs of nuclear weapons production. Soviet testing exposed hundreds of thousands of Kazakhs

to dangerous radiation levels, as U.S. testing and mining did to Native American and Marshall Islands communities.[41] Even attempts to contain the irradiated waste from nuclear test sites continues to pose ecological problems with human costs.[42] Nuclear testing probably killed more people than the atomic bombings of Hiroshima and Nagasaki, leading to possibly as many as 460,000 premature deaths.[43] It is therefore more convenient than true to say that no lives have been lost to nuclear weapons since 1945.

Finally, Washington's and Moscow's continued reliance on nuclear weapons has undercut their nonproliferation efforts. How can other countries believe nuclear weapons are not necessary for their security, when even countries with powerful conventional forces are afraid to relinquish the bomb? This question bears special import ahead of the anticipated 2021 NPT Review Conference. Already, four countries – India, Pakistan, Israel, and North Korea – maintain nuclear weapons outside the NPT. A new arms race between the U.S. and Russia could very well cause more countries to pursue nuclear weapons.

The Rise and Fall of Arms Control

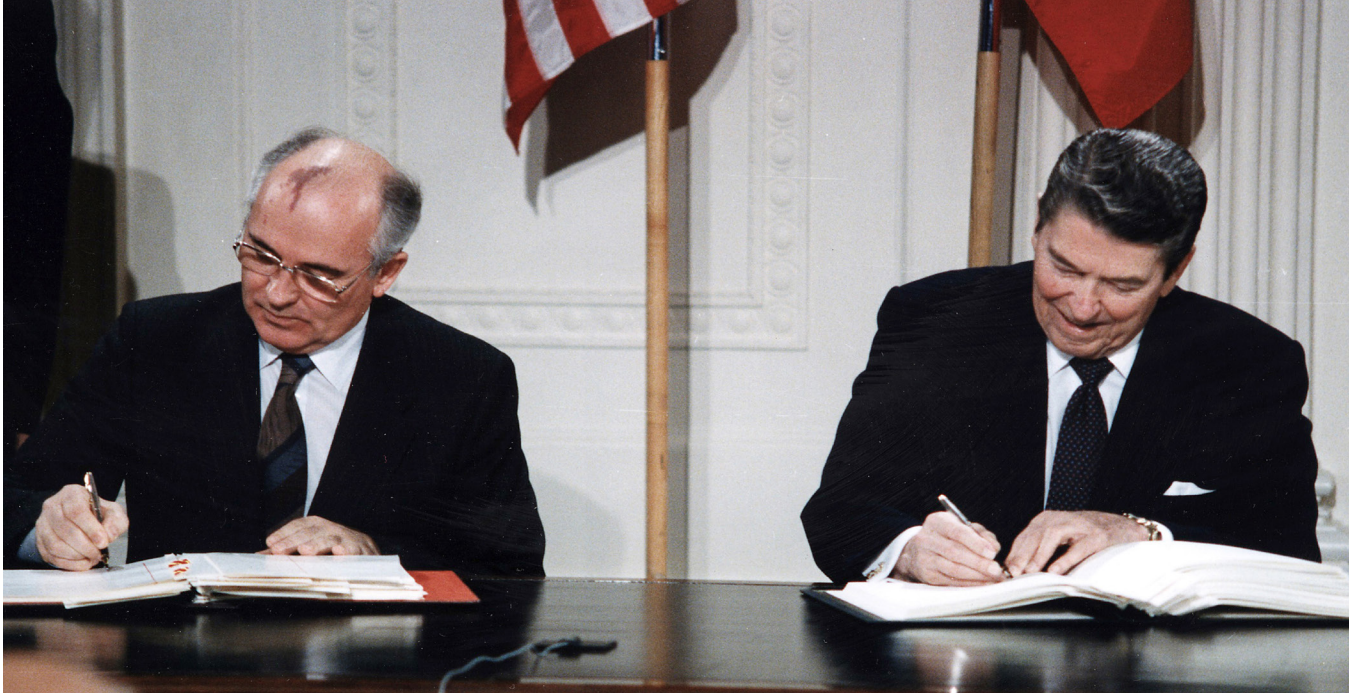
Realizing the existential peril of nuclear weapons, by the final years of the Cold War White House and Kremlin leaders worked together to craft a regime to contain the arms race. The recent unraveling of so much of that arms control regime threatens to take the guardrails off Washington and Moscow.

Early attempts to pursue arms control in the Truman and Eisenhower years fell short, yet by the early 1960s, the close calls of Berlin and Cuba allowed for real progress. As one of his last acts in office, President Kennedy signed the Partial Test Ban Treaty in 1963. President Lyndon Johnson followed by making unilateral reductions in fissile material and reactor closures.[44] His doggedness succeeded when in 1968 the superpowers agreed to the NPT.

Arms control would continue in fits and starts throughout the next two decades. By the time the Soviet Union unraveled in 1991, three arms control processes in particular had capped the arms race: the Anti-Ballistic Missile (ABM) Treaty, the Intermediate-range Nuclear Forces (INF) Treaty, and the first Strategic Arms Reduction Treaty (START I). START I was superseded by the New START Treaty, signed in 2010. Each of these treaty processes helped arrest the arms race. Sadly, the George W. Bush administration killed the ABM Treaty in 2002 and the Trump administration withdrew from the INF Treaty in 2019. New START, up for renewal in February 2021, could very well be next.

Signed in 1972, the ABM Treaty for the first-time limited U.S. and Soviet ability to build strategically destabilizing and technically unviable ballistic missile defenses. Such defenses promised, but never actually delivered, the reliable ability to intercept an incoming long-range nuclear strike. In signing the treaty, both powers had effectively conceded that Mutually Assured Destruction (MAD) was an inescapable fact of life.

Cold War hardliners in the United States were long hostile to the ABM Treaty and came close to scrapping it when President Reagan proposed his technologically unsound Strategic Defense Initiative (SDI, also derisively known as Star Wars), a proposed system of space-based missile interceptors. As the ideological successors to such hardliners, neoconservatives achieved their long-sought-after victory in 2002. Enjoying a rapport with the younger President Bush that they had never had with the elder, they moved quickly to withdraw the United States from the ABM Treaty, which by that point had lasted for thirty years. They claimed the U.S. had to withdraw in order to build interceptors to defend against rogue regimes like North Korea. Almost twenty years later, those interceptors "still do not work reliably enough



President Reagan and General Secretary Gorbachev signing the INF Treaty in the East Room of the White House, 8 December 1987.

to be useful, and probably never will."[45] Recently, former energy Secretary Ernest Moniz and former Sen. Sam Nunn argued that Bush's 2002 decision to withdraw from the ABM Treaty, together with his 2007 withdrawal from the Conventional Armed Forces in Europe Treaty, were the pivotal moments in revitalizing a new arms race.[46] Indeed, there is a direct line between the U.S. withdrawal from the ABM Treaty to Russia's most recent nuclear weapons buildup.

The key aspect of missile defense that opponents of the ABM Treaty missed was that defenses against strategic nuclear weapons were not only ineffective but destabilizing. In the absence of the ABM Treaty, Moscow – knowing that U.S. missile interceptors did not work but fearing they someday might – would resist reduction to its weapons and delivery systems in an attempt to maintain a force that could overload any U.S. defensive system. This would undercut the broader goal of reducing the global nuclear stockpile. Indeed, this is exactly what happened when the U.S. withdrew from the ABM Treaty. President Putin himself has said that the Kremlin's ongoing nuclear weapons and hypersonic missile buildup is Russia's response to the death of the ABM Treaty.

The story of the INF Treaty is similar. Presidents Reagan and Gorbachev calmed much of the world when they signed the INF in 1987. Unlike its predecessors, the INF was remarkable in that it eliminated a whole class of deployed weaponry. In doing so, it greatly reduced the risk of a false-alarm nuclear conflagration.

The flight-time of an ICBM from Russia to the United States is roughly thirty-five minutes. By contrast, an intermediate-range missile could cover the distance between the Soviet Union and Western Europe in less than ten minutes. By placing new intermediate-range missile systems in Europe in the 1980s, the Soviet Union reduced the lead time of a nuclear attack drastically. This greatly alarmed U.S. allies, with West German Chancellor Helmut Schmidt calling the deployments destabilizing.[47] Reciprocal U.S. deployment of its own intermediate-range ground-launched missiles only made the situation more precarious. As Soviet leader Mikhail Gorbachev put it, such a situation – reducing the flight-time between Soviet-allied Eastern bloc countries and U.S.-allied NATO ones – "increased the risk of nuclear war,"[48] as leaders would have even less time to decide whether an incoming attack was genuine. To combat this threat, Gorbachev and President Reagan signed the INF Treaty in 1987, eliminating the entire class of these intermediate-range weapons.

By the time of the Obama administration, Russia stood in violation of the INF Treaty.[49] The Trump administration decided to abandon the agreement entirely rather than negotiate with Moscow. Former Defense Secretary William Perry and Ploughshares Fund's Tom Collina have compared that decision to removing speed limits on a highway to penalize a speeder. In withdrawing from the INF, the Trump administration has removed an important check on the arms race. The re-introduction of land-based intermediate-range forces could have severe repercussions, especially as either side could mistake inbound conventional missiles for nuclear ones.

Today, the last remaining limit on U.S. and Russian nuclear deployments is the New Strategic Arms Reduction Treaty (New START). New START was intended by the Obama administration as a first step towards larger reductions. The treaty still leaves both sides with enormous firepower, far more than any the other nuclear powers possess. Even under the New START agreement, U.S. Ohio class submarines can carry up to 20 Trident missiles each, each of which can be equipped with up to 8 warheads, each capable of an explosive yield 32 times greater than that of the Hiroshima bomb. The U.S. has fourteen such submarines.[50] Nevertheless, as the last remaining legal constraint on the size of U.S. and Russian arsenals, New START is vitally important. So far, the Trump administration has refused to commit to extending the agreement. Instead, it has repeatedly threatened to let New START lapse, against Moscow's open objection. Unlike in the cases of the INF, there is no question that Russia is in full compliance with New START. The next president will have to decide whether to extend the agreement by February 2021. If the U.S. fails to extend, we will be left with no restraints on U.S. and Russian nuclear weapons for the first time since the 1970s.

President Barack Obama signs the New START (treaty) in the Oval Office, Feb. 2, 2011. Participants include, from left: Chairman of the Joint Chiefs of Staff Admiral Mike Mullen; Energy Sec. Steven Chu; Defense Sec. Robert Gates; Sec. of State Hillary Rodham Clinton; Sen. John Kerry, D-Mass.; Sen. Richard Lugar, R-Ind.; Sen. Dianne Feinstein, D-Calif.; Sen. Thad Cochran, R-Miss.; Sen. Jeanne Shaheen, D-N.H.; and Vice President Joe Biden.

New U.S. and Russian Systems and Deployments

Today, the nuclear situation remains perilous. Though far from their Cold War peaks, the U.S. and Russian stockpiles retain thousands of nuclear weapons, with hundreds on hair-trigger alert. The nuclear sword of Damocles that President Kennedy warned of persists, liable to be cut by "accident, or miscalculation, or madness."[51] It is therefore alarming that so much of the arms control infrastructure has been destroyed over the past several years. From the ABM Treaty to the INF Treaty, the U.S. has exited agreements that were once the bedrock of the post-Cold War order. The Trump administration could well make a similar decision on the New START Treaty very soon. To make matters worse, both the U.S. and Russia are currently designing, researching, and deploying new nuclear weapons, delivery systems, and anti-missile interceptors.

U.S. Programs

Ground-Based Strategic Deterrent

The United States retains three methods for delivering nuclear warheads: by silo-based intercontinental ballistic missile, by submarine-launched ballistic missile, and by bomber aircraft. Of the three, the bombers are the oldest, used to drop the first weapons on Hiroshima and Nagasaki. Next came the ICBMs, which were developed by the U.S. and Soviet Union in the 1950s and allowed for greater speed, survivability, and range. Submarine technology greatly improved on the ICBM program, as submarines could be deployed throughout the world's oceans and remain virtually undetected. Thus, in the event of a Soviet attack on the U.S., even if American land-based missiles and bomber aircraft were destroyed, U.S. submarines at sea would survive undetected, thereby deterring such an attack from occurring in the first place. As early as the Nixon administration, Defense Sec. Melvyn Laird argued that submarine invulnerability made the ICBMs strategically unnecessary.[52]

A US Air Force B-2 Spirit refuels from a KC-135 Stratotanker during the Bomber Task Force training exercise over England, Aug. 29, 2019. US Air Force photo by Staff Sgt. Jordan Castelan

Nevertheless, the land-based ICBM is still with us. Despite calls for its abolition in the 1990s, it has survived on Air Force bases in Montana, Nebraska, and North Dakota. As the current generation of ICBMs ages, the Trump administration is planning a successor ICBM program: the Ground-Based Strategic Deterrent (GBSD).

The GBSD is both expensive and dangerous. Northrop Grumman, which spends more money than any other defense contractor on lobbying – and more than any other company behind Amazon and Facebook – is expected to win the contract for the program without even having to compete for it.[53] Coming in at $150 billion, the cost projection alone should raise suspicion, especially as it has grown dramatically in recent years and is likely to grow higher in the near future. Arms control experts also argue the GBSD is premature, as the existing U.S. ICBMs, if refurbished, could last for another twenty years.[54] With such high costs, the onus should be on GBSD proponents to argue why this particular weapon is so vital, especially when the country faces numerous fiscal challenges. Yet of the three highest-profile arguments for the GBSD, none bears close scrutiny.

A meeting between RF President Vladimir Putin and US President Donald Trump on the sidelines of the G20 summit in Hamburg July 7, 2017.

The first, and strangest, of these is the "nuclear sponge" argument. A Cold War relic, the idea is that in a nuclear war, Moscow would have to dedicate a portion of its missiles to destroying the ICBM silos in the Midwest, missiles that could not then be dedicated to hitting more densely populated areas like coastal cities. Whatever logic the idea might have once had, today it is almost farcical. Russia could have no confidence in preventing U.S. retaliation even if the U.S. had no ICBMs.[55]

The second argument is more prosaic: ICBMs create jobs. In a narrow sense, it is true that the ICBM program provides jobs to missileers. But surely, there must be some more productive use of taxpayer money than to station young servicemembers in silos waiting for instructions to launch doomsday? The monotony of manning these missile silos has led to numerous incidences of drug and alcohol abuse at ICBM bases. Moreover, the positive economic effects of the ICBM program on their home states would be enhanced if the money were redirected to other, more productive, uses. These could include direct transfer payments to citizens of those states, greater social services, or other non-military uses, which studies show create more economic stimulus than Pentagon programs.[56]

The third reason given in favor of the GBSD is that the U.S. must have a strategic 'triad,' meaning three delivery mechanisms for its nuclear weapons. The doctrine of the triad has calcified into dogma. There is no supernaturally ordained reason the U.S. needs bombers, ICBMs, and nuclear-capable submarines. U.S. submarines at sea will remain undetectable for the foreseeable future. Other countries, notably the U.K., have managed to survive without a nuclear triad. ICBMs would be extremely difficult to use in any attempt at limited nuclear war; if used in a hypothetical nuclear clash with Iran or North Korea, for instance, ICBM debris would crash down on parts of the U.S. and Canada and the missiles themselves would overfly Russia, possibly spooking the Kremlin into a far greater nuclear disaster.[57] In an all-out nuclear war, the vast firepower of U.S. bombers and submarines would surely be more than enough. The best we can hope from ICBMs is that they would be destroyed in their silos.

Rather than providing stability, the ICBM program has been a significant source of insecurity. These are the 'use-it-or-lose-it' weapons, so called because in the event of a presumed incoming attack, the U.S. president retains the option to launch them before they can be destroyed in the silos. Given the sobering history of false nuclear alarms, these are the weapons most likely to be fired accidentally. Because of this 'use-it-or-lose-it' mentality, more formally known as 'launch-on-warning,' these weapons give decision-makers precious little time to deliberate the most dire of decisions; presidents would have roughly seven minutes to decide whether to launch a retaliatory strike if warned of an incoming strike, far too little time to make sure such an attack was indeed real.

Four decades ago, such a scenario very nearly took place. National Security Advisor Zbigniew Brzezinski was awakened at 3:00 AM to the news that 2,200 Soviet missiles had been launched against the United States. Certain that he and the rest of Washington, D.C. would soon be obliterated, he did not bother to wake his wife. As he was about to notify President Jimmy Carter and urge a retaliatory strike, he was told it was a false alarm.[58]

The real doomsday scenario is not that the U.S. would be caught unaware by a sudden 'bolt-from-the-blue'

An unarmed Trident II D5 missile launches from the Ohio-class ballistic missile submarine USS Nebraska (SSBN 739) off the coast of California. US Navy photo by Ronald Gutridge

nuclear attack that eliminates the ICBMs in their silos. In that event, the U.S. would still be able to retaliate with nuclear weapons from submarines or bombers. More likely is that a false alarm panics a president into launching these weapons on the mere warning that an attack is incoming, thereby precipitating a genuine nuclear exchange. President Clinton has supported exploring alternatives to the current system, suggesting that a constitutional process that requires the president to consult with other officials or agencies "would be a good thing."[59]

Low-Yield Submarine-Launched Warheads

After decades of movement away from Cold War-era belief in limited nuclear wars, the Trump administration's 2018 Nuclear Posture Review set off alarm bells by promising a new, 'low-yield' nuclear warhead mounted on Trident D5 missiles on submarines. The alarm was justified, as the low-yield warhead, known as the W76-2, is the first new nuclear weapon developed by the U.S. since the end of the Cold War.[60] Despite early Democratic opposition, the weapon was approved by Congress in 2019 and has entered into service. Nevertheless, the next administration can and should retire this dangerous weapon for three key reasons.[61]

The first has to do with the stated rationale for the low-yield weapon: in a hypothetical U.S.-Russian conventional conflict over Eastern Europe, if the Russians were losing, they might use a low-yield nuclear weapon to seek to 'de-escalate' the conflict. As summarized in the Trump administration's Nuclear Posture Review, Russia could 'escalate' a conventional conflict by introducing nuclear weapons in the hopes that doing so would result in the U.S. capitulating or 'de-escalating.'[62] To counter this perceived threat, the Trump administration decided that the U.S. needed a new low-yield nuclear weapon. Otherwise, the U.S. would be forced to choose between a conventional response and a disproportionately large nuclear one.

Leaving aside the fact that the U.S. already has low-yield nuclear weapons, for example yield-adjustable B61 bombs,[63] this line of thinking misreads the security situation. The problem is not that the U.S. would be unable to repel or deter Russian aggression – the U.S. has numerous conventional, cyber, and nuclear methods to do that. The problem is that the existence of a low-yield nuclear weapon makes the use of higher-yield nuclear weapons more likely by lowering the threshold for nuclear use overall.[64]

Ground-based interceptor missile at Fort Greeley, Alaska, Aug. 19, 2017. US Navy photo by Dominique A. Pineiro

This is particularly dangerous when one considers that hardly any war game has ever successfully managed to keep a simulated nuclear war limited.[65] Numerous Cold War presidents came to the conclusion that if tensions between Washington and Moscow went nuclear, there was no exit-ramp. The Soviets saw the situation similarly.[66] New low-yield nuclear weapons do not make sense unless one buys into the myth that nuclear war can be controlled at low levels.

Second, rather than stop a Russian advance through a clear message of eye-for-an-eye deterrence, the low-yield weapon would merely aggravate the fog of war. It would be impossible for Russian officials to know whether a Trident missile had been fired with a high-yield warhead or a low-yield one. Indeed, in November 2017, retired U.S. Air Force General Kevin Chilton made this exact point in a meeting of senior defense experts convened by Defense Secretary Jim Mattis.[67] The weapon would fail to signal any intention of keeping nuclear strikes limited. It would instead only communicate that the U.S. was resorting to nuclear weapons, which could easily precipitate a broader nuclear war.

Third, if a U.S. submarine were to launch a low-yield weapon, it would reveal its general location, thereby endangering its personnel to enemy fire. Presumably, any high-yield nuclear weapons the submarine would also be carrying would be lost as well. Considering that each of these submarines has a crew of over one hundred and fifty servicemembers aboard and that the U.S. only has fourteen of them, this weapon needlessly endangers American servicemembers.[68]

Missile Defense

Missile Defense has stymied nuclear arms reductions ever since President Reagan's insistence on the Strategic Defense Initiative tanked disarmament talks with Gorbachev at Reykjavik in 1986. From a personal, if presidential, hobbyhorse, missile defense has evolved into a right-wing touchstone. Post-Cold War Republican presidents have pursued it vigorously. President George W. Bush withdrew from the ABM Treaty in 2002, which had limited both nuclear superpowers' missile defense deployments for decades. When he entered office in 2017, President Trump was no less willing to sacrifice real U.S. security for the dubious promise of missile defense.

Speaking in October 2017, President Trump claimed that "we have missiles that can knock out a missile

in the air 97 percent of the time." He went on to claim that an adversary could not get through the missile defenses by simply firing multiple missiles to overload the system, in the hopes that at least one would get through.[69] Neither claim was true. The GMD has been unsuccessful in six of its last 11 tests and could in fact be overwhelmed by numerous missiles launched at the same time.[70]

Facts notwithstanding, the Trump administration pushed for increased missile defense spending in its 2019 Missile Defense Review. As with President Reagan's plan, the Trump administration proposal envisioned space-based interceptors.[71] Whether geared towards 'rogue' states or established nuclear powers, missile defense against long-range missiles makes little sense. North Korea possesses relatively small numbers of nuclear warheads and its ICBM capability remains limited. Iran has neither ICBMs nor a nuclear weapon. Yet even so, if either country managed to launch a nuclear ICBM at the U.S., the GMD would not be able to stop it; it cannot reliably even stop most missiles in controlled simulations and would fail against decoys and large attacks. Given these limitations, it would be even more difficult – indeed, next to impossible – to stop a Russian or even a Chinese attack. Both countries would simply overwhelm existing missile defenses, firing so many missiles at the U.S. that the chances of one getting through would be near certain. It is therefore foolhardy for the administration to continue supporting this $70 billion unsuccessful system.[72]

Missile defense is not just technically unreliable. It also antagonizes Russia for no discernable purpose. The U.S. routinely underestimates the extent to which Russian fear of American missile defense drives Moscow's dedication to a new nuclear arms race. Indeed, the nonpartisan Congressional Research Service lists U.S. missile defense programs as a key driver of Russia's hypersonic missile program.[73] It will be hard if not impossible for any new U.S. administration to make progress on arms control with Russia without first limiting U.S. missile defense programs.

The UR-100UTTKh ICBM, a Russian Federation hypersonic glide vehicle launched from the Dombarovsky Air Base..

Russian Programs

Hypersonics

The link between U.S. missile defense and Russian hypersonics was made explicit by President Putin himself in March 2018, when he drew a direct line between President Bush's ABM Treaty withdrawal and a series of new Russian military programs.[74] This Russian build-up proves the point: unreliable missile defense systems are bad for arms control.

The most attention-grabbing weapon Putin announced was a hypersonic missile. The term hypersonic can be misleading. Something is commonly defined as hypersonic if it travels at least five times faster than the speed of sound, or Mach 5. However, the term hypersonic missile is rarely used to describe traditional ICBMs, which travel closer to speeds of Mach 13 and can reach Mach 23 in their terminal phase.[75] Thus, hypersonic missiles have existed for decades – even Nazi Germany's V-2 rockets came close to hypersonic speeds. Russia's new hypersonic missiles therefore do not represent a particularly novel threat to the U.S. Moreover, while Putin has bragged that hypersonic missiles can avoid ballistic missile defenses, this does not represent a new advantage for Russia, as traditional ICBMs have always been able to avoid such defenses. As the Congressional Research Service summarized it, the Russian hypersonic Avangard

Soviet inspectors and their US escorts stand among Pershing II missiles dismantled in accordance with the INF Treaty in January 1989. US Air Force photo by Jose Lopez, Jr.

missile does not change the existing balance between Russian offensive and U.S. defensive forces."[76] Many of the other Russian programs launched by Putin bear even less threat for the U.S. – many are technologically overambitious, some have resulted in disastrous tests already, and most cannot be deployed within five years, if ever.

Washington should therefore not overreact to these Russian systems. In fact, the Russians have defended their systems as a response to U.S. developments, chiefly of course the withdrawal from the ABM Treaty. This is hardly surprising. As Tom Countryman put it, no one ever admits to starting an arms race: "it's always a response to what the other guys have done."[77] Rather, the U.S. should focus on the broader implications of the new Russian systems.

Instead of getting sucked into the misplaced hysteria around Moscow's new weapons, the United States should focus on their broader implications. For example, depending on how they are deployed, the new Russian hypersonic missiles may have negative consequences for nuclear stability. As James Acton outlined in a recent report, nuclear states frequently use nuclear weapons to signal their intentions to one another. The Avangard, however, is dual-capable, meaning it is not clear whether a deployed system is carrying conventional or nuclear warheads. When nuclear weapons are concerned, this kind of ambiguity is dangerous. Acton and others have therefore proposed that Russia commit to keeping nuclear weapons off its hypersonic missiles, as the U.S. has already agreed to do.[78]

Return of Intermediate-Range Nuclear Forces

The death of the INF Treaty threatens to reintroduce long-dormant dangers in Europe. Without the INF Treaty, world leaders could find themselves back in the short-fuse situation their predecessors faced in the 1980s, with intermediate-range forces in Europe decreasing the amount of time leaders have to assess and react to a crisis.[79] *The Nation's* Michael Klare has even argued that this could compel Russia to more formally endorse a launch-on-warning policy, which like its U.S. counterpart would only increase the risk of catastrophic accident.[80] Moscow's most recent nuclear policy statement leaves open this possibility.[81] Furthermore, James Acton and others have noted that, as with Russian nuclear-armed hypersonic missiles, intermediate-range forces undermine strategic stability. Without the INF Treaty, it is now even harder to distinguish certain nuclear-armed missiles from conventional ones, heightening ambiguity concerns.[82]

To be fair, all this is not to say that the U.S. was right to withdraw from the INF Treaty. As Steven Pifer has argued, the U.S. withdrawal allows Russia to now deploy whatever intermediate-range missiles it wants.[83] While Russia did violate the agreement, the Trump administration handed it a diplomatic victory by withdrawing without consulting U.S. allies in Europe. Rather than work to get Russia back into compliance, it simply walked away. Both the decision itself and the process that produced it were profoundly misguided.

The signing of the INF Treaty was one of the key moments that precipitated the end of the Cold War. The first treaty to ban an entire class of weapons – which the U.S. and Soviet Union dismantled by 1991 – it was a testament to the ubiquitous danger nuclear weapons pose. Both sides were admitting that the presence of this class of weapons made them less safe. Without the INF Treaty, Washington and Moscow run the risk of lapsing back into Cold War myths: that nuclear weapons are just like any other weapons and do not need to be treated differently, and that they are a source of stability.

Policy Recommendations

The next administration will have to act quickly to stop a new U.S.-Russia arms race. To have any hope of doing so, it must commit to three major approaches. First, it must extend New START in its first few weeks in office. Second, the president should take the initiative to discontinue dangerous and destabilizing policies, including declaring a No First Use doctrine, ending launch-on-warning, and canceling the new ICBM. Third, the White House should work with Russia and Congress to resume progress on arms reductions, starting with the most threatening nuclear systems.

Stop the Collapse of Arms Control: Extend New START

Upon entering office, a new administration would have one overriding arms control concern: extending the New START Treaty. The success or failure of arms control in the next decade will depend heavily on the fate of this agreement, as it is the last remaining limit on U.S. and Russian nuclear deployments. If we cannot retain the arms control we currently have, we will have little chance of placing more limits on our arsenals in the future.

The early Cold War scares over Berlin and Cuba shocked world leaders into producing a variety of arms control agreements. From the early test ban treaties and the ABM Treaty of the 1970s to President Obama's New START agreement, U.S. presidents of both parties have championed arms control with the Kremlin. If the U.S. allows the New START agreement to lapse, the 2020s could have fewer restrictions on nuclear weapons than any decade since the 1970s. Extension of the agreement, which the Russians support, must be the first priority of any administration if it is to stop a new U.S.-Russia arms race.

Without extending New START, the U.S. is sure to poison the well for any future arms control talks with Russia. President Obama hoped that New START would be an initial step towards larger reductions by both countries. Far more thorny nuclear issues plague the relationship than New START, as was evident in the second Obama term, when Russia began flagrantly violating the INF Treaty and bilateral relations soured over Russian aggression in Crimea. Yet even as fitful as progress has been in the decade since New START was signed, progress has been made. Both sides have decreased deployments in accordance with the terms of the treaty and Russia has also decreased its stockpile of non-strategic nuclear weapons, something it was under no legal commitment from New START to do.[84]

New START also provides valuable insight into Russia's new nuclear systems. Hypersonic missile systems, notably Avangard, are subject to New START's inspection and verification regime.[85] Forgo the treaty and the U.S. could lose valuable information about such systems. A collapse of New START would also remove limits on the new Sarmat ICBM.[86] Indeed, a post-New START Russia could very quickly and easily pose an increased nuclear threat to the U.S. just by placing more warheads on each missile than current limits permit.

Like its predecessor agreements, New START does not cover all nuclear systems, nor did it envision all the technological developments that would occur after its signing. There are certain Russian systems, such as the Poseidon torpedo and the Tsirkon hypersonic cruise missile, that go beyond the purview of New START. However, substantial evidence suggests that Russia will not be able to deploy them to any meaningful extent before New START's five-year extension would expire in 2025. Even that scenario might prove moot, as both of these projects are plagued by technological delays and may never actually culminate in usable systems. There is no reason for the U.S. not to extend New START out of fear of Russian systems that do not yet work, might never work, and would never be useful before the New START extension expires anyway.

Finally, it is important that the next administration extend New START for the broader message it would send: that the U.S. is still dedicated to reducing nuclear danger. In his first term alone, President Trump has abandoned the Iran nuclear deal, the INF Treaty, and the Open Skies Treaty. Reports indicate the White House is also considering a resumption of nuclear testing. This is a dangerous trend, particularly ahead of the Non-Proliferation Treaty Review Conference, postponed until 2021. Fifty years after pledging to pursue disarmament under the NPT, the U.S. must demonstrate that it continues to remain dedicated to progress on arms control.

Reduce the Risk of Accidental Launch: Declare No First Use, End Launch-on-Warning, and Cancel GBSD

Beyond extending New START, the next administration can take additional actions to slow a new arms race. Top of the list are adopting a No First Use nuclear policy, ending launch-on-warning, and canceling the new ICBM, the GBSD.

No First Use, ending launch-on-warning, and canceling the GBSD program are separate but interrelated proposals. Since 1945, the U.S. has reserved the right of first use, or the ability to use nuclear weapons first in any conflict. A No First Use policy would be a public statement by the U.S. that it would only use nuclear weapons in retaliation to a nuclear strike, thereby promising that it would never start a nuclear war. Strong majorities of U.S. voters support declaring a No First Use policy.[87] Launch-on-warning for land-based missiles is a legacy of the Cold War era. Currently, the U.S. retains 400 ICBMs on hair-trigger alert in silos across Montana, North Dakota, and Wyoming. In a nuclear war with the Soviet Union, the ICBMs would be highly vulnerable to attack by Moscow. To prevent them from being blown up in-silo, the Pentagon adopted a launch-on-warning policy, meaning that if an incoming attack is detected, the missiles be launched before the attack arrives. By the time the inbound missiles reached the silos, their intended target of U.S. ICBMs would already be on course to their targets in Russia. While some have argued that launch-on-warning does not constitute first use as it would theoretically be in response to an incoming attack, launching nuclear weapons on the basis of warning systems but before an attack can be confirmed could be a lethal mistake

The current policy – that the U.S. reserves the right to start a nuclear war – is a Cold War vestige. It was adopted in the early days of the Cold War, when Soviet conventional forces were far superior to their U.S. and NATO counterparts in the European theater.[88] Following World War Two, the U.S. rapidly demobilized. In contrast, the Red Army retained far greater conventional capability in Europe, especially around the exposed exclave of West Berlin. To deter a Soviet invasion which it could not stop through conventional means, the U.S. extended a nuclear umbrella over its Western European allies. If the Soviets invaded, the U.S. could respond with nuclear weapons.

With the collapse of the Soviet Union in 1991 and the development of a secure second-strike capability, in the form of virtually undetectable nuclear-armed submarines, both the first use doctrine and launch-on-warning have outlived their usefulness. Indeed, elements of both the Clinton and Obama administration came tantalizingly close to ending these policies. Speaking in January 2017, Vice President Biden announced that "deterring—and if necessary, retaliating against—a nuclear attack should be the sole purpose of the U.S. nuclear arsenal."[89] Regrettably, the Trump administration rejected that approach in its Nuclear Posture Review, choosing instead to "retain some ambiguity regarding the precise circumstances that might lead to a U.S. nuclear response."[90]

Retaining these policies is an unacceptably dangerous choice. Both increase the chance of a miscalculation, which could precipitate an accidental nuclear war. This is especially troubling in light of the long history

of false alarms, alcohol and drug use, and boredom at ICBM bases. As House Armed Services Chairman Rep. Adam Smith observed after visiting U.S. ICBM bases, "what struck me was that the job is unbelievably boring,"[91] a situation that has resulted in officers falling asleep on duty, cheating on tests, and abusing drugs.[92] Strategically redundant, the U.S. ICBM bases pose an unnecessary risk at best and a disaster waiting to happen at worst.

What is also concerning is the pressure such policies places on U.S. presidents. For example, if the U.S. believes an incoming Russian attack is underway, a U.S. president could have less than seven minutes to decide whether or not to launch land-based ICBMs before they are destroyed in their silos. In that time, under these policies, the president could be advised to use the missiles before he loses them, to launch on warning. Under such severe stress, a president might ignore the fact that the U.S. has ample ways to retaliate to such an attack even without firing its ICBMs. With such short decision-making timeframes, it is not hard to imagine a U.S. president making the wrong call, before the enemy attack is confirmed.

Declaring No First Use and ending launch-on-warning would give a new administration a number of benefits. First, it would undercut the stated rationale for the costly new ICBM, the Ground-Based Strategic Deterrent (GBSD). When the U.S. has multiple nuclear-armed submarines at sea at all times, each capable of unleashing the firepower of over a hundred thousand Hiroshima-sized bombs,[93] the U.S. does not need ground-based nuclear weapons systems, especially ones so visible they can be found on Google Maps.[94] Second, it would reduce the risk of accidental conflict and reassure allies and adversaries alike that the U.S. will not spark a nuclear war.

Scale Back Destabilizing Systems: Including Trump's Low-Yield Weapon, U.S. Missile Defenses, and Russia's Hypersonic and Intermediate-Range Missiles

The U.S. and Russia should both realize that they do not need the new nuclear weapons systems they are developing. Special attention should be directed towards restoring the line between conventional and nuclear weaponry and decreasing the risk of escalation. Specific systems to be retired or canceled include the low-yield Trident D5 missile (LYD5) and the Long Range Standoff Cruise Missile (LRSO) on the U.S. side and Russia's nuclear warheads on hypersonic missiles and its INF-violating missile deployments. The U.S. should also reconsider its investments in missile defense, as systems like the Ground-Based Mid-course Defense (GMD) antagonize Russia, hurt arms control, and yet still fail to attain their stated goals.

The line between nuclear and conventional systems must be reinforced. U.S. dual-capable weapons systems, such as the LRSO, have come in for deserved and sustained criticism for blurring the line between conventional and nuclear weapons.[95] These weapons pose unnecessary escalatory risks, especially if an adversary confuses them with conventional weapons. Weapons like the new, 'tactical' U.S. submarine-launched warhead, which blur the line between high-yield and low-yield nuclear weapons, should similarly be eliminated.[96] The dual-capable nature of some Russian missiles should also be discouraged. For example, the U.S. has already declared that it will not place nuclear warheads on its hypersonic missiles. It should retain that commitment while at the same time diplomatically pressuring Russia to make a similar one.

Lastly, the U.S. and Russia should re-assess the collapse of the INF Treaty. In pulling out of the treaty in 2019, the U.S. hurt its ability to push back against Russia's violations of the treaty. Thankfully, the U.S. has not yet responded with its own INF Treaty-violating deployments, in part because European allies would likely refuse to host them.[97] However, both sides run the risk of reviving the 1980s Euromissile Crisis without the landmark treaty that ended it.[98]

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