The Future of Strategic Arms Control

Steven Pifer

Abstract: U.S.-Russian strategic arms control faces an uncertain future. The post-Cold War nadir in relations, questions about compliance with the Intermediate-range Nuclear Forces (INF) Treaty, modernization programs and doctrinal questions pose challenges to the future of the strategic arms control regime. One possibility is that it ends in 2021 when the New Strategic Arms Reduction Treaty (New START) expires. A more ambitious approach could provide for further reductions but would require resolving questions where the two countries have substantial differences. Perhaps the best to hope for is New START's extension to 2026, which will give all sides time to explore what comes next.

Keywords: Arms control, strategic weapons, United States, Russia
Stichwörter: Rüstungskontrolle, strategische Waffen, USA, Russland

1. Introduction

Strategic arms control has provided a critical element of the U.S.-Soviet and U.S.-Russia relationships for some five decades. The 2010 New Strategic Arms Reduction Treaty (New START) has reduced U.S. and Russian strategic nuclear forces to their lowest levels since the 1960s. The future of strategic arms control, however, is unclear.

In the years following New START's signature and entry into force, Washington and Moscow were unable to build on the treaty to achieve a follow-on agreement that would have provided for further reductions. Russian officials instead raised issues such as missile defense and conventional precision-guided strike systems and said that they would have to be resolved first. Today, generating an agreement on further reductions – or merely maintaining New START in the early 2020s – faces a range of challenges in addition to those other issues raised by Moscow: U.S.-Russian relations have fallen to their lowest point since the end of the Cold War, and uncertainty about the future of the 1987 Intermediate-range Nuclear Forces (INF) Treaty could impact New START. Both sides are engaged in or preparing to engage in major strategic force modernization programs, and questions have arisen regarding Russian and U.S. nuclear doctrine.

It is possible to define a way forward that would build on New START, bolster stability and security, and further reduce nuclear arsenals, but it would require that the United States and Russia compromise on key issues that thus far have proven intractable. It may be more realistic to aim for a more modest course, such as measures to reduce the chance of miscalculation and extend New START to 2026.

2. A Long Background

The United States and Soviet Union launched the Strategic Arms Limitation Talks (SALT) at the end of the 1960s. Over the years, both have had multiple (and not always identical) objectives for strategic nuclear arms control, including: to enhance strategic stability by reducing incentives to strike first with nuclear weapons in a crisis, to reduce nuclear force levels and their associated costs, to increase transparency regarding nuclear forces, and to bolster nuclear non-proliferation credentials.

In 1972, the SALT negotiations produced the Interim Offensive Arms Agreement, which capped the numbers of intercontinental ballistic missile (ICBM) and submarine-launched ballistic missile (SLBM) launchers on each side. SALT also produced the Anti-Ballistic Missile (ABM) Treaty, which prohibited nationwide missile defenses and constrained each side to just two missile defense sites, each with no more than 100 ABM interceptor launchers.

Other agreements followed. The 1974 ABM Treaty Protocol limited each side to one ABM site with 100 launchers. The 1979 SALT II Treaty limited the total number of strategic delivery vehicles – ICBM and SLBM launchers plus heavy bombers – on each side. It was never ratified, though both sides observed its limits in practice until 1986.

The INF Treaty in 1987 marked a significant departure in arms control. It did not limit but banned all U.S. and Soviet ground-launched ballistic and cruise missiles with ranges between 500 and 5,500 kilometers. The treaty resulted in the elimination of nearly 2,700 missiles and their associated launchers by summer 1991. The 1991 START I Treaty limited the United States and Soviet Union each to no more than 6,000 accountable warheads on no more than 1,600 strategic delivery vehicles, requiring both sides to make significant reductions in their accountable strategic warheads and delivery vehicles.

The Soviet Union collapsed at the end of 1991, but Russia took on the Soviet obligations under the INF and START I treaties (as well as other agreements). In early 1993, the United States and Russia concluded the START II Treaty, which limited each side to no more than 3,000-3,500 accountable strategic warheads. START II also banned all heavy ICBMs as well as ICBMs with multiple independently targetable reentry vehicles (MIRVs). That was seen in Washington as a major step to strengthen strategic stability, as ICBMs with multiple warheads in fixed silos could tempt the other side to consider a first strike in a severe crisis. It was less well received by the Russian military, which regarded MIRVed ICBMs as the backbone of Russian strategic forces. START II never entered into force, and the attempt to conclude a START III treaty in the late 1990s made little headway.

The George W. Bush administration in 2001 took a different approach to arms control. President Bush suggested to Russian President Vladimir Putin that, instead of a treaty, both sides just

DOI: 10.5771/0175-274X-2018-2-67

declare their planned level of strategic forces; the United States intended to maintain 1,700-2,200 operationally deployed strategic warheads. Putin pushed for a treaty, however, and Bush ultimately agreed. The 2002 Strategic Offensive Reductions Treaty (SORT) limited each side to no more than 1,700-2,200 operationally deployed strategic warheads, but it contained no agreed definitions, no counting rules and no verification provisions. It did not constrain the number of launchers or missiles.

U.S. and Russian officials discussed further limitations during the second Bush term in view of the approaching end of START I (it was due to expire in December 2009). Washington wanted to constrain deployed warheads only. The Russian side wanted limits to apply to strategic delivery vehicles as well. The sides could not find agreement.

The Bush administration also withdrew from the ABM Treaty in 2002, given its desire to deploy a limited national missile defense to deal with the future ICBM threat posed by rogue states such as North Korea. Moscow expressed regret over the U.S. decision but at the time did not register a strong objection; Russian officials later cited the decision as indicating that the United States was not seriously committed to arms control.[1]

3. New START

President Barack Obama took office in January 2009 wanting to make serious progress in reducing nuclear arms. Speaking in Prague in April 2009, he laid out his vision for a world without nuclear weapons, though he made clear that, as long as nuclear weapons existed, the United States would maintain a safe, secure and effective nuclear deterrent.

Obama was prepared to return to a more traditional approach with Russia on limiting and reducing strategic offensive weapons. Washington early on indicated to Moscow its readiness to negotiate limits on both warheads and strategic delivery vehicles. Negotiations began in earnest in spring 2009.

In April 2010, the United States and Russia concluded the New START Treaty. Following ratification, the treaty entered into force on February 5, 2011. Its limits, which took full effect on February 5, 2018, constrain each side to no more than 1,550 deployed strategic warheads, no more than 700 deployed ICBMs, SLBMs and nuclear-capable bombers, and no more than 800 deployed and non-deployed launchers for ICBMs and SLBMs plus deployed and non-deployed nuclear-capable bombers.[2]

New START contains a variety of verification and transparency measures. Both sides exchange extensive data concerning their strategic nuclear forces every six months. They exchange notifications at a rate of about 2,000 per year regarding certain changes to their strategic forces. Each side is allowed 18 inspections of the other side's strategic forces per treaty year.

Under its terms, the New START Treaty will expire on February 5, 2021. It can, however, be extended by up to five years by agreement by the sides.

On February 5, 2018, the U.S. State Department and Russian Foreign Ministry separately announced that their country had met the New START limits.[3]

U.S. and Russian New START Levels, February 2018

	Deployed Strategic Warheads (1,550)	Deployed Strategic Missiles + Bombers (700)	Deployed + Nondeployed Missile Launchers and Bombers (800)
United States	**1,350**	**652**	**800**
Russia	**1,444**	**527**	**779**

4. A Pause on Strategic Arms Control

The Obama administration sought to conclude New START quickly, as it hoped to have the treaty in place by the time that START I expired by its terms in December 2009 or as soon as possible thereafter. U.S. officials hoped to follow New START with a more ambitious agreement providing for additional reductions.

When signing New START, Obama called for another round of U.S.-Russian negotiations aimed at an agreement that would provide for further cuts and include all U.S. and Russian nuclear weapons – strategic and non-strategic, deployed and non-deployed.[4] Some U.S. officials envisaged an agreement that would include a single aggregate limit covering all nuclear warheads, perhaps with a sublimit covering deployed strategic nuclear warheads (the weapons of greatest concern, because they could be launched on very short notice).

Russian officials, however, chose not to engage on further nuclear arms reductions. They instead raised other issues, insisting that those questions had to be resolved before there could be another round of U.S.-Russian reduction negotiations. In particular, Moscow expressed concern about U.S. missile defenses, conventional precision-guided strike systems and third-country nuclear forces.

The Russians have seemed to attach greatest importance to the question of missile defense. In 2004, the United States

1 For more detailed accounts of the U.S.-Soviet and U.S.-Russian nuclear arms control negotiations, see: Thomas W. Wolfe, *The SALT Experience* (Cambridge, MA.: Ballinger Publishing, 1979); John Newhouse, *Cold Dawn: The Story of SALT* (New York: Holt, Rinehart and Winston, 1973); Strobe Talbott, *Endgame: The Inside Story of SALT II* (New York: Harper Colophon Books, 1980); Strobe Talbott, *Deadly Gambits* (New York: Alfred A. Knopf, 1984); Maynard W. Glitman, *The Last Battle of the Cold War: An Inside Account of Negotiating the Intermediate Range Nuclear Forces Treaty* (New York: Palgrave MacMillan, 2006); and Steven Pifer and Michael E. O'Hanlon, *The Opportunity: Next Steps in Reducing Nuclear Arms* (Washington, D.C.: Brookings Press, 2012).

2 A deployed strategic warhead is a warhead on a deployed ICBM or SLBM; as nuclear-capable bombers normally have no weapons on board, each deployed bomber is attributed as one deployed strategic warhead (even though bombers can carry multiple weapons). A deployed ICBM or SLBM is an ICBM or SLBM in a launcher. A non-deployed launcher is a ballistic missile launcher that does not contain an ICBM or SLBM.

3 Ministry of Foreign Affairs of the Russian Federation, "Foreign Ministry Statement," February 5, 2018, http://www.mid.ru/en/foreign_policy/news/-/asset_publisher/cKNonkJE02Bw/content/id/3054864; Department of State Fact Sheet, "New START Treaty Aggregate Numbers of Strategic Offensive Arms," February 22, 2018, https://www.state.gov/t/avc/newstart/278775.htm.

4 Macon Phillips, "The New START Treaty and Protocol," Obama White House Archives, April 8, 2010, https://obamawhitehouse.archives.gov/blog/2010/04/08/new-start-treaty-and-protocol.

began deploying ground-based mid-course defense (GMD) interceptors in Alaska and California, with the goal of protecting U.S. territory against a limited ICBM strike that might be mounted by a rogue state such as North Korea (U.S. policy statements made clear that U.S. missile defenses were not directed against Russian strategic ballistic missile forces).

In 2011, under the European phased adaptive approach agreed by NATO, the United States began deploying warships armed with Standard Missile-3 (SM-3) missile interceptors in European waters. In 2016, SM-3 interceptors were deployed at the "Aegis Ashore" site in Romania (with a second site to open in Poland sometime in 2020).

Russian officials said that U.S. missile defenses affected the strategic balance. Although the SM-3s in or near Europe lacked the velocity and were poorly placed to engage Russian ICBM warheads, Moscow expressed far greater concern about those interceptors than the GMD systems. An effort to bridge the differences between the sides and find agreement on a cooperative NATO-Russia missile defense for Europe failed in 2011.[5]

Russian officials also expressed concern about U.S. conventionally-armed cruise missiles and future systems such as conventionally-armed hypersonic glide vehicles. They asserted that the precision of such systems had reached the point where they could attack strategic targets that formerly could only be destroyed by nuclear warheads and thereby affect strategic stability. In a March 2011 speech to the Conference on Disarmament, Russian Foreign Minister Sergey Lavrov expressed concern about "non-nuclear armed strategic offensive weapons."[6]

Russian officials stated that the next negotiation on nuclear arms had to be multilateral, bringing in other nuclear weapons states. For example, in June 2013 Lavrov asserted "we have also to bear in mind that further steps that could be proposed on reducing strategic offensive weapons will have to be considered in a multilateral format, because the further reductions would bring us to levels comparable to the nuclear arsenals possessed by countries other than Russia and the U.S."[7] This statement downplayed the enormous disparity between the U.S. and Russian nuclear arsenals, on the one hand, and the nuclear arsenals of third countries, on the other. Russian officials presented no plan for how a multilateral nuclear arms control agreement would be structured in practice. Washington believed there was room for at least one more bilateral negotiation with Russia, given the large gap in numbers between the nuclear superpowers and any third country.

5 For a fuller discussion of the possibilities for U.S./NATO-Russian cooperation on missile defense and the failure of the sides to reach agreement, see Steven Pifer, "Missile Defense in Europe: Cooperation or Contention?" Brookings Arms Control Series Paper 8, May 2012, https://www.brookings.edu/research/missile-defense-in-europe-cooperation-or-contention/.

6 Ministry of Foreign Affairs of the Russian Federation, "Statement by H. E. Mr. Sergey Lavrov, Minister of Foreign Affairs of the Russian Federation, at the Plenary Meeting of the Conference on Disarmament, March 1, 2011," www.In.mid.ru/bdomp/brp_4.nsf/e78a48070f128a7b43256999005bcbb3/2de66a92e764dbb8c3257846004dfd44!OpenDocument.

7 "Lavrov: Talks on further nuke cuts have to involve not only Russia and U.S. but also other countries," *Russia Beyond the Headlines,* June 22, 2013, https://rbth.com/news/2013/06/22/lavrov_talks_ on_further_nuke_cuts_have_to_involve_not_ only_russia_and_us_27372.html.

As a result of these issues, no progress was made on further strategic arms control after New START's conclusion and entry into force in 2011. Following the respective 2012 presidential elections in Russia and the United States, American officials attempted in early 2013 to revive the strategic dialogue, proposing an executive agreement on missile defense transparency to break the missile defense stalemate.[8] The effort went nowhere.

A new arms control problem arose in 2014, when the U.S. government charged that Russia had violated the INF Treaty. Press reports indicated that Russia had tested a ground-launched cruise missile of intermediate range.

Russian officials denied the violation and instead charged the United States with three violations of the treaty: (1) that the United States used prohibited intermediate-range ballistic missiles as targets in missile defense tests, (2) that U.S. armed unmanned aerial vehicles (UAVs) were the equivalent of prohibited intermediate-range ground-launched cruise missiles, and (3) that the Aegis Ashore missile defense sites in Romania and (soon) in Poland used launchers for SM-3 missile interceptors that could also contain and launch cruise missiles.

The Obama administration sought but failed to bring Russia back into compliance with the INF Treaty. In early 2017, Trump administration officials stated that Russia had begun deploying the ground-launched cruise missile, known by the Russian designator 9M729 and U.S./NATO designator SSC-8. In December 2017, the Trump administration said its goal was to bring Russia back into compliance with the INF Treaty, and it announced an "integrated strategy" of diplomatic, military and economic response measures aimed at changing the calculation in the Kremlin and persuading Russia to return to compliance.

5. Challenges to Strategic Arms Control

In summer 2018, the prospects for further strategic arms control steps appear bleak. The U.S.-Russia relationship remains mired at a post-Cold War nadir. American officials state that Russia's aggression against Ukraine remains the biggest obstacle towards moving toward a more normal bilateral relationship between Washington and Moscow, but it is unclear if the Kremlin is prepared to alter its Ukraine policy. It appears content to maintain a simmering conflict in Ukraine's east and rejects any discussion of the status of Crimea. Bilateral relations are also burdened by differences over Syria as well as charges of Russian interference in the 2016 U.S. presidential election.

Russia is in the midst of a major modernization of its strategic nuclear forces, and the United States is ramping up its own strategic modernization effort. The Russian military is currently building the Borey-class ballistic missile submarine, the Bulava SLBM, the SS-27 ICBM and air-launched cruise missiles. It is also preparing to reopen the Blackjack nuclear-capable bomber production line and is developing the Sarmat, a new heavy ICBM. Russia, moreover, is developing several new kinds of nuclear systems of strategic range.

8 Tom Z. Collina, "Russia, U.S. Trade Missile Defense Offers," *Arms Control Today,* June 3, 2013, https://www.armscontrol.org/print/5795.

Much of the Russian strategic modernization program seems to be replacing old systems with new systems. Had the Russian defense budget been better funded in the 1990s and early 2000s, some of these modernization programs likely would have started earlier. The Sarmat raises a stability concern, as a heavy ICBM carrying multiple warheads in a fixed silo could provide a tempting target in a crisis. The Russian military, however, traditionally has favored large ICBMs and may see the Sarmat's ability to carry a large number of warheads and/or decoys and penetration aids as a hedge against future U.S. missile defense developments.

The United States is proceeding on a different modernization schedule, which will begin to peak in the mid-2020s. The U.S. military plans to produce the Columbia-class ballistic missile submarine, a new ICBM (the Ground-Based Strategic Deterrent or GBSD), the stealthy B-21 bomber and Long-Range Stand-Off (LRSO) air-launched cruise missile. Like the Russian program, much of this modernization effort is about replacing older systems that are aging out and approaching the end of their service life.

Both the Russian and U.S. strategic modernization programs thus far seem sized to fit within the central limits of New START. That, of course, will only be relevant as long as New START remains in force.

Developments regarding non-strategic nuclear arms and nuclear doctrine also raise questions. The Russian military continues to maintain a large number of land-, sea- and air-based non-strategic nuclear weapons, raising concerns about whether Moscow regards these as weapons for deterrence or for war-fighting. Official Russian military doctrine says that Russia would resort to nuclear weapons "in response to the use of nuclear and other types of weapons of mass destruction against it and/or its allies, as well as in the event of aggression against the Russian Federation with the use of conventional weapons when the very existence of the state is in jeopardy."[9]

The U.S. Department of Defense has expressed concern, however, that in a conventional conflict initiated by Russia and even when the existence of the Russian state is not at stake, the Russian military might still resort to non-strategic nuclear weapons if it began to lose at the conventional level.[10] This is sometimes referred to as "escalate to de-escalate" in the United States. Russian experts and some U.S. analysts say there is no evidence that this is official doctrine, but the Pentagon and NATO believe that it is.[11]

Concern that Russia has lowered the threshold for use of non-strategic nuclear weapons with lower yields was a major factor in the Trump administration's nuclear posture review, which was released in early February. It stated that the United States would produce a nuclear-armed sea-launched cruise missile with low-yield options and a low-yield Trident ballistic missile warhead, as counters to the Russian arsenal and to give the United States a broader range of nuclear choices.

The nuclear posture review also indicated that the United States is making another notable adjustment to its policy. While, like its predecessors, the review states that the United States would use nuclear weapons only in "extreme circumstances," those extreme circumstances now include "non-nuclear strategic attacks" on population, key infrastructure, nuclear forces or nuclear command and control systems – an apparent expansion of the circumstances in which the United States would consider nuclear use.

Compliance with the INF Treaty remains a major point of contention between both sides. It is not clear how the Trump administration's integrated strategy will affect Kremlin calculations. The Russians may discount the announced Pentagon plan to proceed with treaty-permitted research and development of an American intermediate-range missile, believing that, if the U.S. military actually were to field the missile, NATO would not be able to reach consensus to deploy it. The silence of senior European leaders on the Russian violation of the INF Treaty suggests the Kremlin is feeling little diplomatic heat.

Absent progress toward resolving this question – and the Russian charges of U.S. violations – it is difficult to see how long the INF Treaty can last. If Russia remains in violation, pressure to withdraw from the treaty will likely grow in Washington, in particular from Republican skeptics of arms control. There may also be interest in some U.S. military quarters in seeing the end of the treaty, which prevents development and production of U.S. ground-launched intermediate–range missiles as a counter to China's large intermediate-range missile arsenal.

If the INF Treaty collapses, or if it remains in force but under the shadow of continued doubts about Russian compliance, that would likely affect New START. In 2017, Republicans on Capitol Hill proposed language for the National Defense Authorization Act that would block any funding for extending New START beyond 2021 unless Russia was in full compliance with the INF Treaty. That language did not make it into the final bill, but Republicans could well propose it again.

Other questions raise uncertainties about the future of strategic arms control. Putin has adopted a hard attitude toward the United States, although he appears to have left the door slightly ajar for an improved relationship with Trump. Russian officials have shown no imaginative suggestions for moving forward on arms control, even on their proposal for a multilateral nuclear arms reduction negotiation.

For his part, Trump's confused remarks on the topics suggest that he has little grasp of the complexities of nuclear weapons and nuclear weapons policy. He has shown no personal interest in arms control. When Putin, in a January 2017 telephone conversation, raised the question of discussing a possible extension of New START, Trump reportedly at first did not know what the treaty was and then dismissed it as a bad Obama deal. Moreover, his administration's nuclear posture review appears to diminish the role of arms control in U.S. nuclear security policy.

9 Embassy of the Russian Federation in the United Kingdom, "Military Doctrine of the Russian Federation, December 25, 2014: Section III, Para. 27," June 29, 2015, http://rusemb.org.uk/press/2029.

10 Department of Defense, "Nuclear Posture Review, 2018," February 2018, https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF.

11 For an example of one U.S. analyst's view, see Olga Oliker, "Russia's Nuclear Doctrine: What We Know, What We Don't, and What That Means," Center for Strategic & International Studies, May 2016, https://csis-prod.s3.amazonaws.com/s3fs-public/publication/160504_Oliker_RussiasNuclearDoctrine_Web.pdf.

6. The Future

U.S. and Russian officials held a round of strategic stability talks in September 2017. Although they agreed to meet again, no new round had been held as of July 2018. Strategic stability talks could offer a useful venue for both sides to consider steps to deconflict their forces when they operate in close proximity and thus reduce the risk of accident or miscalculation; to discuss their nuclear doctrines and implications thereof; and to explore what issues might be addressed if they could agree to new negotiations.

It would be useful for the strategic stability talks to take an expansive look. The traditional stability model based on the U.S.-Russian strategic nuclear relationship appears increasingly outdated. That bipolar model should be replaced by a multilateral model (including, for example, China and North Korea) that also considers issues such as missile defense, precision-guided conventional strike and new domains such as cyber and space. That will be much more complex than the stability model of the Cold War.

There appear to be three possible courses for the future of New START. First, the treaty could simply expire by its terms on February 5, 2021. Assuming that the INF Treaty was no longer in force then, for the first time in at least 30 years, no nuclear arms control arrangements would be constraining U.S. and Russian nuclear forces.

In the absence of strategic arms limits, there might not be a dramatic increase in strategic nuclear forces. Other reasons, such as limited budgets, might keep Washington and Moscow from embarking on a major expansion of their strategic forces. But there could be upward creep in numbers, especially warhead numbers. For example, under New START, the U.S. Navy maintains its deployed Trident SLBMs with, on average, four or five warheads per missile even though the missiles can carry up to eight warheads. Would there be a temptation to increase the number of Trident warheads absent New START? On the Russian side, New START will likely require that Sarmat ICBMs be deployed with fewer warheads than their capacity. Absent New START, the Russian military would have no reason not to load additional warheads.

The loss of transparency provided by New START would have a negative impact on predictability and stability. The end of the treaty would mean the end of the flow of information from the treaty's data exchanges, notifications and inspections. As a result, both sides would have significantly less knowledge about the other's nuclear forces. Each would have to resort to worst-case assumptions regarding the other side, which would invariably lead to more expensive decisions about how it equipped and operated its own strategic forces.

The end of New START, particularly if coupled with the collapse of the INF Treaty, would undermine U.S. and Russian credibility in sustaining and strengthening the nuclear non-proliferation regime. Non-nuclear weapons states would become more frustrated with the lack of action by nuclear weapons states, and other nuclear-armed countries, such as China, might be tempted to expand their nuclear forces.

China has built up its nuclear forces at a relatively modest pace over the past 30 years. That in part reflects the limited amount of fissile material available to the Chinese military, but Beijing has made its military decisions in the context of a world in which U.S. and Russian nuclear forces were constrained and being reduced. Would the Chinese adopt a different course in a world in which no negotiated limits constrained U.S. and Russian nuclear force numbers?

The end of strategic arms control in 2021 thus poses a grim prospect. It would mean a nuclear world that is less predictable, less stable and less secure.

The second possible future course is agreement by both sides to extend New START to 2026, as permitted by the treaty. This would keep in place the constraints, predictability and stability provided by New START, and give Washington and Moscow more time to consider what arms control measures, if any, might follow New START. Extension could be accomplished by agreement between the two presidents; it would not require new legislative consent to ratification.

Extending New START may well require preservation of the INF Treaty, at least on the American side. If Russia and the United States have the political will, there are ways to resolve their compliance concerns.[12]

If Moscow truly believes that the range of its 9M729 ground-launched cruise missile does not exceed 500 kilometers, it could arrange an exhibition and technical briefing for a U.S. experts team (there might be political value in including NATO experts as well). If that exhibition led to a reassessment of the U.S. compliance finding, that could resolve the issue. If it did not, both sides would need to discuss other ways to address the question. Of course, if the missile has a range greater than 500 kilometers, all 9M729s and their launchers would have to be eliminated in order for Russia to come back into compliance.

As for Aegis Ashore, both sides could consider whether observable differences – if possible, functionally-related observable diff erences – might address the Russian concern that SM-3 interceptor launchers in Romania and Poland could hold cruise missiles. Both sides might also explore an arrangement, with the agreement of NATO and the Romanian and Polish governments, under which Russian experts would be allowed periodically to visit the sites and choose some number of the launchers, say two of the 24, to be opened so that they could confirm that the missiles were indeed SM-3 interceptors.

The other two Russian concerns (regarding missiles used in missile defense tests and armed unmanned aerial vehicles) might be resolved by drafting language to differentiate permitted ballistic missiles for use as targets in missile defense tests from prohibited intermediate-range ballistic missiles and to differentiate armed UAVs from ground-launched cruise missiles. The Special Verification Commission established by the treaty provides the venue to address these questions, as well as procedures for exhibiting the 9M729 and Aegis Ashore SM-3 interceptor launchers.

12 This discussion draws on discussions conducted by the trilateral U.S.-German-Russian Deep Cuts Commission (deepcuts.org).

The third and more ambitious future course is to supplant New START between now and 2026 with a new treaty. Ideally, that treaty would involve reductions that go beyond those mandated by New START and would include *all* U.S. and Russian nuclear weapons, including reserve and non-strategic nuclear weapons. This would be a complicated undertaking, as it would involve limits on weapons not previously constrained by treaty and would require new verification measures, for example, provisions for monitoring numbers of nuclear warheads held in storage sites.

It is estimated that the United States and Russia each have in the neighborhood of 3,800-4,500 nuclear warheads of all types, not counting those nuclear weapons that have been retired and are awaiting elimination. A dramatically new arms reduction approach would entail a negotiation of a U.S.-Russian treaty setting an overall limit of no more than 2,000 nuclear warheads for each side. That would mean a 50% cut in current arsenals. The treaty might also have a sublimit of 1,000 deployed strategic warheads – the weapons that are more readily usable and thus of greatest concern. Beyond the 1,000 sublimit, both sides would be free to choose their mix of reserve strategic and non-strategic nuclear weapons. (Retired weapons would be addressed separately.)

Securing that kind of agreement from Russia would almost certainly require U.S. readiness to reduce below New START's limit of 700 deployed ICBMs, SLBMs and nuclear-capable bombers. Russia is currently well below that limit, and the United States as of February had about 130 more deployed strategic delivery systems. The new treaty might set a limit of 500 or 550 deployed strategic delivery vehicles, accompanied by a limit of about 600 deployed and non-deployed ICBM and SLBM launchers and nuclear-capable bombers.

This kind of agreement would entail serious reductions by the United States and Russia. It would promote a more stable nuclear balance. It would leave the nuclear superpowers with six or seven times as many nuclear weapons as the nearest third country (France).

Based on Russian government statements, such a treaty would be very difficult to negotiate. It would require that the United States address – at least partially – Moscow's concerns on issues such as missile defense and conventional precision-guided strike systems.

Missile defense has proven a particularly difficult question in the past. For the foreseeable future, there is little reason to think that the U.S. Senate would consent to ratification of any treaty that contained limits on missile defense. There are, however, measures short of treaty limits, such as an executive agreement on transparency along the lines proposed by the United States in 2013, which might alleviate Russian concerns.

Under the 2013 U.S. proposal, the two countries would declare annually for major elements of their missile defenses such as interceptors, launchers and key radars the numbers of systems that they had as well as the projected numbers for each of the subsequent ten years. That would give each side a detailed understanding of the other's missile defense programs, from which each could calculate whether the other's missile defenses posed a serious threat to its strategic offensive forces.

Other steps might be possible. For example, NATO could declare its intention not to deploy more than a certain number of SM-3 interceptors in the European area, which could provide some assurance to Russia about U.S./NATO missile defense capabilities. Consideration could be given, particularly if Iran does not increase the range of its ballistic missiles, to putting the interceptors in storage and mothballing the SM-3 site in Poland (for political reasons, the United States would likely want to compensate with a military deployment in Poland involving a like number of U.S. military personnel). The Pentagon could revive an earlier Missile Defense Agency proposal to allow Russian experts to observe U.S. missile defense tests to confirm that their capabilities to engage strategic ballistic missiles are limited.

A combination of such steps would fall short of Moscow's demand in the past: a legally-binding treaty that limits the number, velocity and location of missile interceptors. They could nevertheless partially address expressed Russian concerns.

Conventional precision-guided strike systems would be a new subject for any U.S.-Russian negotiation. That said, if a new treaty were to maintain New START's deployed warhead counting rule, any warhead on an ICBM or SLBM – regardless of whether it was nuclear or conventional – would be captured by the 2,000 aggregate limit and 1,000 sublimit.

Hypersonic glide vehicles atop ICBMs and SLBMs would pose a challenge. Since they do not fly a ballistic trajectory, the U.S. view is that they are not captured by New START's limits, even though these systems could replicate the range and speed capabilities of ICBMs. They raise particular concern because, while their launch would be detectable, hypersonic glide vehicles may be difficult to track when gliding along the upper atmosphere. Moreover, unlike ballistic missile warheads, which travel a predictable ballistic trajectory once released, hypersonic glide vehicles can change course. Thus, a side might observe the launch of a booster carrying a hypersonic glide vehicle but have little idea of its intended target.

In any event, the cost of these systems might lead both sides to conclude that they could be limited as a niche capability. It might also be early enough in the exploration of long-range hypersonic glide vehicles to consider whether negotiating, including with China, a ban on testing and production would make sense.

Yet another question regards conventionally-armed sea- and air-launched cruise missiles. These would likely prove very difficult to constrain, given the importance such systems play in U.S. (and, increasingly, Russian) power projection capabilities. It might be worthwhile, however, to hold a military-to-military discussion of the impact of such conventionally-armed cruise missiles on the strategic balance.

The other question that would have to be addressed is Russia's call for the next round of nuclear arms negotiations to be multilateral. It is unclear how a multilateral arms control agreement that would be acceptable to all would be structured, given the large disparity between U.S. and Russian nuclear

weapons numbers on the one hand (3,800-4,500 each) and the nuclear weapons numbers of third countries (no more than 300). Britain, France and China likely would not consent to something like the 1922 Washington Naval Treaty, which set unequal limits on the tonnage allowed for capital warships.

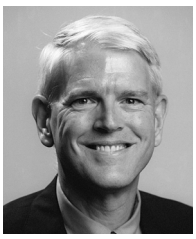
One possibility might entail a new U.S.-Russian arms reduction treaty accompanied by unilateral, politically-binding, no-increase commitments on the part of at least Britain, France and China. The latter three could modernize and replace their nuclear weapons but would not increase the total number as long as the United States and Russia were reducing. This would require some transparency by Britain, France and China; for example, they would need to declare the total number of their weapons.

Negotiating such agreements would be complicated and require considerable time. Doing so in 2011 would have been hard enough. Given the problematic nature of the U.S.-Russia relationship in 2018 and other factors, it is very difficult to see both sides now undertaking anything on this scale. Even if they were ready to begin a broad negotiation on the range of questions, disagreements over approaches to specific problems could require years to resolve.

7. Conclusion

Over the next three years, the possibility of an end to the U.S.-Russian nuclear arms control regime (the collapse of the INF Treaty and expiration of New START) appears distressingly real. Hopefully, the prospect of the less predictable and less stable world that would follow will spur Washington and Moscow to work to keep some kind of limitation regime in place.

It may be that the best outcome that could be achieved for strategic arms control in the near-term is extension of New START to 2026, perhaps with some commitment by the United States and Russia to begin exploring the issues that they would have to address in a new negotiation. That would preserve New START's stability and predictability benefits for another five years and buy both sides time to think about what kind of arms control arrangements, if any, should govern their future strategic nuclear relationship.



Steven Pifer is a nonresident senior fellow with the Brookings Institution, where his work focuses on arms control, Ukraine and Russia. He is a retired foreign service officer who spent more than 25 years with the U.S. Department of State. He holds a bachelor's degree in economics from Stanford University.