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Beyond New START: Forecasts for Future Russian-US Arms Control

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Beyond New START: Two Forecasts For Future Russian–US Arms Control

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A Russian Yars intercontinental ballistic missile launcher parades through Red Square during the Victory Day military parade in central Moscow on 9 May 2022. Russia celebrates the 77th anniversary of the victory over Nazi Germany in the Second World War. (Photo by Kirill KUDRYAVTSEV/AFP) (Photo by KIRILL KUDRYAVTSEV/AFP via Getty Images.)

Chapter One: Forecasts for Future Russian-US Arms Control

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A world without the New START Treaty (NST) or treaty-based strategic arms control cannot simply be categorised as 'unacceptable'.¹ That world is possible. It has been increasing in likelihood for some time and thus it must be both understood and anticipated. The NST will expire on 5 February 2026 and it could disappear much sooner, depending on the actions of either Russia or the United States. No amount of positive thinking on the value of strategic arms control or talking points about the importance of the treaty can change its status as a hostage in the broader bilateral relationship.

Historical experience shows that arms-control agreements often take years to negotiate. Success hinges on slow, frustrating delegation work bearing fruit during narrow windows of mutual political interest. At the moment no delegations are meeting. None of this foundational work is taking place. There is little sign of political interest in Moscow and Beijing. Russian President Vladimir Putin and Chinese President Xi Jinping have shown over the last decade that they have little interest in reducing or managing risk, escalation, or arms races through concrete steps, and this trend is likely to continue well into the future. Larger dynamics are instead driving all sides away from cooperation at the negotiating table and towards competition at the military level.

These moments of uncomfortable limbo have existed before in the history of arms control, which has often been one of disappointment, missed opportunities and hard work derailed by broader geopolitical events. But history shows that seemingly intractable problems have been overcome. Landmark agreements have been reached and parties have learned to live with lower numbers of delivery systems and warheads and unforeseen levels of transparency. To some observers, Russia and China have interests that are well served by arms control, as does the US leadership, and prospects could brighten at some future moment of opportunity.

It is useful to look beyond the current dark moment to a future time when leaders might want to negotiate the contours of a post-NST security environment. Questions and answers could be guided by lessons learned from the NST, in particular: how has the NST worked or not worked from a US perspective? Can NST-related issues be resolved in either a new, narrower agreement or broader security framework? Is there a common ground between the US and Russia upon which to negotiate and implement an NST follow-on agreement? And finally, what should the US want in a future agreement and how does it get there? But there are also larger questions at play beyond simply bringing legally binding strategic arms control into the future. These questions centre on the function of arms control in this security environment, the reasons why parties would choose cooperation over competition and the ultimate form of such cooperation.

Understanding the Benefits and Imperfections of the NST

Experts have debated the benefits and disadvantages of the NST from its conception to its likely deathbed. Many of these debates are intrinsic to arms control as a national-security instrument. Some specific issues regarding the NST's framework have existed since its origins. Other issues emerged during NST implementation, either with respect to the treaty itself or outside of the treaty as the broader security environment changed with regards to Russia and China. This happens over the life of any treaty: a combination of internal and external pressures, a record of successes and failures and issues from birth and from life. All of this paints a complex picture of the positives or negatives of an agreement.

Given the decline of arms control in the national-security conversation, the complex reality of the NST is often lost. The NST is reduced to a caricature of itself: a failed

attempt to prevent all that has happened with Russia and China which can be easily discarded, a panacea to stop the looming dangers of an arms race, or a central pillar of strategic stability which must be preserved or replaced at any cost. Again, this happens with many arms-control agreements that survive beyond a certain duration; they become outdated and dangerous or timeless and essential. Debunking these mythologies is useful.

The 2011 NST was never an easy agreement to negotiate and implement, simply because no arms-control agreement with Russia is ever easy. Russians are hard and capable negotiators, often frustrating to US counterparts.² Negotiations are themselves long and challenging. Bargaining does not end with an agreement's signature and ratification but continues throughout implementation. Negotiating the NST may have been *easier* than previous agreements, judging by negotiating duration, but its relative speed was due to inherent advantages at that time. The NST was built on several decades of legacy agreements. It was also overseen by experts who had engaged across the table for years. It was a moment of some degree of US-Russian cooperation on mutual security concerns. It had a popular US president capable of investing the necessary time and energy into the negotiating process, and an experienced core of legislators and staffers in the Senate able to discuss and debate the merits of ratifying the treaty. Despite all these advantages, the NST negotiation and ratification were still complex and difficult.³

The NST implementation was no different. Successful arms-control implementation requires 'tending the garden'; i.e., tedious, time-consuming, necessary work.⁴ The garden that was the NST was never an easy one to tend. Arms-control work with the Russians requires attention to detail and a willingness to stress even the most minor issues before they become major problems. US implementers faced several sets of obstacles over the course of the treaty's implementation as they tended the garden while relations worsened.

First and foremost, Russia needed to be below the central limit of 700 deployed launchers (intercontinental ballistic missiles (ICBMs), deployed submarine-launched ballistic missiles (SLBMs) and deployed heavy bombers equipped for nuclear armaments), 800 deployed and non-deployed launchers and 1,550 nuclear warheads

Negotiations: New START was not an easy agreement to negotiate, despite the speed at which talks were concluded.



(ALBERTO PIZZOLI/AFP/Getty Images)

on deployed launchers before the treaty's deadline of 5 February 2018. For all the criticisms of the NST 'forcing' the US to reduce while 'allowing' Russia to build up, the NST put limits on the Russian strategic triad at precisely a point when Moscow's military modernisation and nuclear-infrastructure programme rebounded. Russia was close to or above the limits when the treaty began, and its deployed warhead numbers spiked in the years prior to the NST's central limits coming into effect.⁵ Russia reached the central limits of the treaty by eliminating legacy systems and reducing the number of warheads on deployed launchers.

In contrast, much of the US numerical reduction was bookkeeping from START I, removing items like B-1 bombers and converted missile-defence launchers.^{6,7} Some of the reductions were achieved by the US using treaty-approved procedures to remove B-52 heavy bombers and *Trident* II SLBM launchers from accountability by rendering the converted items incapable of

Table 1: New START Treaty Aggregate Numbers of Strategic Offensive Arms, 1 September 2022

Category of Data	United States	Russia
Deployed ICBMs, deployed SLBMs, and deployed heavy bombers	659	540
Warheads on deployed ICBMs, on deployed SLBMs, and nuclear warheads counted for deployed heavy bombers	1,420	1,549
Deployed and non-deployed launchers of ICBMs, deployed and non-deployed launchers of SLBMs, and deployed and non-deployed heavy bombers	800	759

Source: US Department of State

employing nuclear weapons.⁸ The US made clear in the negotiations that conversions of heavy bombers and SLBM launchers would be used to achieve the reductions necessary under the NST, following the conversion procedures outlined in the agreement.⁹ While this conversion programme progressed, Russia attempted repeatedly to renegotiate provisions of the NST regarding conversion procedures agreed to in Section 3 of the treaty.¹⁰ Russian inspectors made a deliberate decision to not exercise their treaty right to inspect converted launchers in an attempt to build leverage.¹¹ The Russian side instead publicly stated their displeasure with these procedures wherever Moscow thought it might be advantageous and attempted at certain moments to use the conversion issue both to refuse to extend the agreement and accuse the US of non-compliance.¹²

The NST grappled throughout its tenure with questions concerning new Russian missile systems. Some systems – such as the RS-26 *Rubezh* (RS-SS-X-28) ICBM and the *Barguzhin* rail-mobile ICBM – were ultimately shelved. Others, like the perpetually in-development RS-28 *Sarmat* (RS-SS-X-29) heavy ICBM and the deployed *Avangard* (RS-SS-19 *Stiletto* Mod 4) ICBM-mounted hypersonic-boost glide vehicle, are accountable by treaty definition. Some of Russia's so-called 'novel' systems, such as the nuclear-powered and nuclear-armed cruise missile, *Burevestnik* (RS-SSC-X-09 *Skyfall*), do not meet the definitions of treaty-accountable launchers; ultimately, they may or may not be developed and deployed. In addition to the question of whether these systems would ever be deployed, there were complex issues as to when systems would first become accountable under the agreement in terms of prototypes, exhibitions and inspections.

Up until recently, NST implementation had been mutually rewarding and frustratingly difficult, a reminder that arms control requires hard work in all of its phases. The NST endured several past bouts of hostage taking which threatened its implementation, showing its durability through Russia's invasion of Ukraine in 2014, the resulting bouts of sanctions and counter-sanctions, Russia's violation of the Intermediate-Range Nuclear Forces (INF) Treaty, the milestone of the NST's central limits coming into effect, debates about extension of the NST, COVID-19 restrictions, and the first year of

Implementation: A Soviet inspector viewing the nosecone of a US BGM-109G *Tomahawk* cruise missile.



(Alamy)

Russia's current war in Ukraine.¹³ Misperceptions about leverage – who wants this more, who needs this more – drove thinking about the value of the NST as a hostage. Like much in the bilateral relationship, the NST succumbed to the recent bottoming-out, culminating with Russia's 'suspension' of the NST.¹⁴ This followed an accumulation of implementation issues, with Russia's failing to restart inspection activities – paused by the COVID-19 pandemic – and unwilling to attend the requisite two annual sessions of the NST's implementation body. The NST became one of the last hostages taken in the bilateral relationship to be left alive. It also demonstrated that Russia was no longer going to fence this issue off from broader security issues – as it seemingly has now done with other arms-control agreements.

The second mythology to tackle is that the NST was transformational. All arms-control treaties suffer from some degree of overhyping at their conception. The NST was an important but inherently modest agreement. It did not represent the dawning of a new era in strategic

arms control. It did not signal a radical restructuring of the US nuclear triad. The ratification of the agreement did not result in momentum for the US Senate ratification of other agreements like the Comprehensive Nuclear-Test-Ban Treaty (CTBT) or Fissile Material Cut-off Treaty (FMCT). Russia rejected the offer made in president Barack Obama's speech in Berlin in 2013, in which he proposed to pursue further strategic-warhead reductions.¹⁵ Other bilateral issues, like missile defence or agreements covering all nuclear warheads, did not gain traction. As such, the NST did not transform the US–Russian relationship.

The NST at its heart was the continuation of a long line of bilateral strategic arms-control agreements stretching back to the early 1970s.¹⁶ Similarly, none of these agreements could completely change the bilateral relationship, prevent Soviet crackdowns in Central and Eastern Europe, affect Soviet human-rights and

emigration policies, stop Soviet material support reaching communist insurgent and terrorist groups, or prevent the invasion of Afghanistan in 1979 – nor did they help the Soviets in preventing US escalation in Vietnam or US support for Israel in the Yom Kippur War. Each built on and modified accordingly the definitions and verification provisions of their predecessors as launcher and warhead limits gave way to reductions to lower levels. Like other agreements, the NST never realised the hopes of its greatest advocates, but nor did it confirm the evils of its harshest critics.

The NST did what it was intended to do. It set limits on deployed and non-deployed strategic launchers and deployed strategic nuclear warheads. It provided transparency and verification on these systems. All of this came with a great deal of time and energy behind the scenes to keep the agreement operating. It was never designed to do more than that. It did not prevent

Figure 1: **The United States' nuclear triad**

NAME	RANGE (KM)	NUMBER OF STAGES	NUMBER OF LAUNCHERS (ESTIMATED)	INITIAL OPERATIONAL CAPABILITY
LGM-30G Minuteman III	12,000+	NUCLEAR X 1 WARHEAD TYPE AND NUMBER SILO BASING OPTION	3	400
UGM-133A Trident D5/D5-LE	12,000+	NUCLEAR X 8 WARHEAD TYPE AND NUMBER OHIO-CLASS SSBN BASING OPTION	3	280
AGM-86B	2,400+	NUCLEAR X 1 WARHEAD TYPE AND NUMBER B-52H STRATOFORTRESS BASING OPTION	N/A	500
B61-7/11	N/A	NUCLEAR X 1 WARHEAD TYPE AND NUMBER B-2A SPIRIT BASING OPTION	N/A	1985 (B61-7) 1997 (B61-11)
B83-1	N/A	NUCLEAR X 1 WARHEAD TYPE AND NUMBER B-2A SPIRIT BASING OPTION	N/A	300 1983

Sources: IISS; *The Military Balance* 2022; *Bulletin of the Atomic Scientists*

Russia from openly competing in other areas. It did not capture all Russian nuclear warheads or every conceivable new Russian nuclear-armed system.¹⁷ It could not solve Russia's violation of the INF Treaty, its aggression (with conventional weapons) against its neighbours, or its irresponsible actions in other domains. It could not expand to suddenly cover China's growing nuclear arsenal and the emerging 'two-peer' problem. As time passed, the focus became less about what the NST did well and more on what it did not do. This has left the NST with a misplaced legacy. It is blamed for everything it did not do, rather than being credited for the value it brought for both sides.

The Search for Common Ground: Information versus Emotion

The reality of the NST – a modestly successful agreement difficult to negotiate, ratify and implement – highlights an inherent value so often taken for granted. Many on both sides have been spoiled by five decades of steady bilateral engagement on arms control and three decades of exchanging classified information verified by onsite inspections regarding the strategic nuclear forces of the other side. This transparency had long persisted, despite massive changes in the geopolitical environment, the bilateral relationship, the technology and the forces. Having enjoyed the benefits of data exchanges for so long, perceptions and institutions were shaped around getting such information for relatively low costs.

Information, not limits or reductions, is the most valuable commodity in arms control. This is particularly true of information derived from arms control, where data is tracked over time and confirmed by onsite inspections. Discussions about US-Russian strategic forces have been straightforward for a long time because we have exchanged information. In an era of ongoing and planned changes to the US and Russian nuclear arsenals, the fact that an agreement like the NST (and START I before it) provided so much consistent data over such a long time period is critical to remember. The disadvantages of not having this kind of information for both sides are readily apparent from other debates on nuclear policy and posture where information is lacking, such as US discussions on the composition of Russian non-strategic nuclear arsenal, the current and

future trajectory of Chinese strategic forces and the size of North Korea's nuclear arsenal.¹⁸ Russians, likewise, face challenges in accurately analysing and responding to US systems of concern upon which there is a dearth of information, such as missile defences or long-range conventional strike capabilities.¹⁹

If parties are reminded about the utility of information in stabilising some small but important part of the relationship, common ground seems relatively easy to find. The two sides have 50 years' experience in negotiating these issues. Both sides have benefitted from the legally binding transparency provided by the NST to shape their forces, based on understanding those of the other side. Both sides seem to enjoy their special status as responsible nuclear-weapon states (NWSs) leading the field in managing their nuclear competition. Both sides want to avoid giving non-nuclear states and other nuclear-armed states alike the perception that formal arms control has stalled and that more radical measures need to be taken to coerce NWSs to reduce their numbers.

At some point Russia will have to sift through the political, economic and military ramifications of its costly war of aggression against Ukraine. It will need to balance the funding of rebuilding its conventional forces, addressing the weaknesses that have now been demonstrated, with 'doubling down' on nuclear weapons, through acquiring additional non-strategic capabilities or revised strategies to fill a perceived deterrence gap.^{20,21} It will have to weigh up whether to push more money towards a military which has shown a poor return on investment, against the need to bolster its domestic civilian economy.^{22,23} Stabilisation at the higher end of the conflict spectrum with the US would appear desirable, as it would allow Moscow to focus on other pressing issues.

Likewise, many in the US want to focus on China as the 'most consequential threat' and deal with attendant issues like regional conventional capabilities, economic re-shoring, science and technology competition and the two-peer nuclear problem.²⁴ However, it is desirable to know and see what Russia has in its strategic nuclear arsenal for the marginal costs of implementing an agreement, rather than having another distracting and costly arms competition factored into the China-focused geopolitical mix.

Common ground has existed over the last decade. It has been frequently pointed out. But it has proven to

not be solid enough upon which to build a new agreement. Why?

Firstly, both sides want the next agreement to cover more than the NST covers. The sides have staked out expansive markers of what they want in the next agreement. The US has stated at various times that all Russian warheads should be captured in the next agreement; Russian strategic delivery systems not captured by the NST should be included; and China should be at the table.^{25,26,27} Russia has its own well-worn and ill-defined list it wishes to have addressed in the next agreement, including missile defences, long-range conventional strikes, the conventional balance in Europe, NATO forces in Central and Eastern Europe, space-based capabilities, the nuclear forces of France and the United Kingdom, and so on.²⁸ These markers have hardened over time into preconditions.

Secondly, the sides leverage the known good to get the possible better. Both sides have stated their willingness to walk away from the table, or not sit at the table at all, if their preconditions are not met. From the standpoint of finding common ground for a future negotiation, this is the worst of all possible worlds. Value in the form of mutual interests is left hostage for greater gains which are unlikely to be realised. Positions are entrenched but vague. Each side grows more hardened in their position, while there is nothing on paper in terms of text to negotiate. No middle ground can be found when positions are all versus nothing or when there are no formal proposals around which to anchor discussions. It is an illusion of a negotiation.

Thirdly, the sides are rapidly losing knowledge and experience on arms-control policy formulation, negotiation, and implementation – and with it the connective tissue that ties arms control to hard security policy. As evidenced by the number of next-generation arms-control initiatives, many are aware of the problem that there are very few experienced arms controllers left with practical experience of negotiations, bureaucratic processes and treaty-drafting procedures. Compounding this problem is that few of these next-generation experts have any connection to areas like military intelligence, war planning, or security policy, that complement and support arms control.

The end of the ‘golden age of arms control’ is considered to be in 1990, with the culminating point occurring in 1999, when many initiatives reached an impasse

Competing priorities: US Republican Senators hold a press conference discussing their concerns of New START’s coverage.



(Mark Wilson/Getty Images)

and progressed no further.²⁹ The successful conclusion of the NST in 2010 represented the culminating effort of a generation of arms controllers who had cut their teeth on the INF and START I negotiations in the 1980s and had done the difficult baseline implementation work in the 1990s, and were largely sidelined when great-power competition was replaced by the global war on terror, with a brief respite during the Obama administration, returning those who remained to the top of the arms-control field in their respective organisations. While a new generation of experts is being assembled through various early and mid-career initiatives, there is no substitute for real-world practical experience which brings together people in intelligence analysis, nuclear-force planning, deterrence strategy, formal negotiations and treaty implementation.

*Fourth of all, the sides see arms control as a ‘bargain with the devil’.*³⁰ The devil in some cases is the other side, but for some, arms control itself is the devil. Putin and the regime he has created in Russia have developed a revisionist history of the 1980s, 1990s and 2000s that is built on grievances against a US seeking to undermine, dismantle and destroy the Russian state.³¹ Within this outlook, arms-control treaties are on the long list of Western tools used to disarm Russia in preparation for this master plan.³² Russia is also happy to point out to the world the many times the US has walked away from arms-control agreements or refused to ratify them.³³ Likewise, the US has its own long list of problems with Russia and a set of open questions as to whether, after the invasion of Ukraine, relationships

can ever be repaired with the current Russian regime.³⁴ The US has long documented Russia's arms-control compliance record over the last two decades as Russia undermined or violated a host of international agreements, a list which has fuelled the visceral mistrust of some in the US national-security community of any arms control with Russia.^{35, 36, 37} In this environment, experts' notions of pragmatic negotiation calculations on costs and benefits are often replaced by political realities of emotion and moralism. The results are easy to spot: demonisation, self-righteousness, zero-sum thinking, no vision of a shared way ahead, hostagetaking and mutual recriminations.

Fifth and finally, the sides lack the minimum political will necessary to take the first step. Making the first move is difficult in a damaged relationship, requiring effort and risk for unknown results. But someone must move first, if only to re-establish a working relationship. Almost every book on negotiating with Russians refers to the importance of building a level of trust with Russian counterparts necessary to transact business.³⁸ Likewise, almost every memoir by US arms-control negotiators talks about the difficulties, but not impossibilities, of establishing the working relationship with their counterparts necessary to do business.³⁹ Familiarity and trust at the working level have disappeared over the last decade, but it is unclear whether these are prerequisites for finding common ground and a way forward on arms control.⁴⁰ The main question is whether there is a shared interest.

Cleaning Out the Arms-control Attic

In this anticipated relationship – one without trust or familiarity but with some shared interest, with dwindling practical experience, amidst a litany of expansive but vague preconditions – some clarity is needed to determine next steps. The over-cluttered suite of arms-control concepts needs to be cleaned out to find this clarity. It is not for a lack of time and effort on the part of US and allied officials, nor a lack of ideas generated by US and allied experts, that no common ground has been found with China and Russia. Beijing and Moscow have not been persuaded and have refused to engage due to a simple lack of shared interest in avoiding arms races (they are both racing and see no downsides to doing so) or conflict (they both are far less concerned about

escalatory risks than post-Cuban Missile Crisis Chinese and Soviet leaders in the Cold War). Many plausible ideas have been posited over the last decade as a potential follow-on framework to the NST. Many ideas were premised, unfortunately, on the key assumption of the NST staying in force. With that premise entirely removed or at best looking very much reduced, much is likely impractical or insufficient in the existing and emerging security environment. Some guidance is valuable in sorting the still-useful from the outdated. Here are four recommendations:

1. *Pare down expectations for what comes next.* As with the NST, what comes next is unlikely to be transformative for larger dynamics in the security environment, including progress towards a world free of nuclear weapons, or an expansion into new domains. Progress with arms control is usually incremental, building upon and updating the most recent agreement. The focus should be on retaining the informational foundations of preceding agreements with Russia. The question then becomes whether to try and do slightly more than the NST with either Russia or China, or try to do slightly less than the NST with both Russia and China together.
2. *Discard outdated proposals accumulated over the last two decades.* Further reductions, grand bargains and new domains seem unlikely to be viable solution spaces. Proposals centred on deeper numerical reductions were questioned in the security environment of 2013. They look even more implausible now given the changes in the security environment over the last decade. Similarly, proposals looking at a US-Russian 'grand bargain' agreement that would capture a broad mix of nuclear/non-nuclear and offensive/defensive capabilities under one framework are also likely impossible, given the bilateral relationship and the complex mix of US security challenges from peers, near-peers and regional adversaries. Proposals of arms control in new domains have also failed to mature, as these domains remain the least able to be constrained by traditional arms-control frameworks and are in the areas in which governments want most to compete, dominate and 'win'.

3. *Recognise that non-legally binding measures could be ineffective and insufficient for achieving US goals regarding Russian and Chinese nuclear forces.* Strategic stability and risk reduction become less appealing as organising principles when dealing with leadership in Russia and China who seek a world order fundamentally different to the one that exists today and are willing to undermine stability and increase risks to achieve those ends. Likewise, failure to make progress on issues perceived to be ‘low-hanging fruit’ in areas such as transparency and confidence-building measures has shown these to be neither as ripe nor within as easy reach as US observers expected.⁴¹ Norms are seen as good and stabilising, but norms require a great deal of time and energy to be agreed even among likeminded states. Norms have shown little effect on constraining behaviours by the non-likeminded states they are meant to influence. Russia and China have displayed a willingness to discard these norms whenever expedient, and the US and its allies little will to enforce these norms or punish their violation.⁴² Political agreements, seen as easier to negotiate and codify than legally binding agreements, also likely lack either palatability or durability to serve their necessary purpose in the security environment.
4. *Stop pursuing arms-control or risk-reduction agreements in sequence, and instead open up several fronts for negotiation simultaneously.* There is no single agreement which will solve all of the looming problems on the security horizon. New START may be the only example of a successful solo arms-control effort. In fact, the US insistence on pursuing it alone first prevented progress on other areas, such as conventional-arms control, thought to be less important. As previously mentioned, it also failed to have a catalytic effect on other stalled treaties, on further reductions or on expansions into other systems of concern. It was the first step, but the other steps failed to materialise. The result was that New START stood alone and exposed when the bilateral relationship deteriorated. At the zenith of arms control, talks on outer space, missile defences, strategic weapons, theatre weapons, conventional weapons and European security all

occurred in parallel. They were linked but not mutually dependent, allowing the sides to build cross-domain bargains or exploits openings that emerged. While negotiating one domain at a time allows for easy hostage taking, parallel negotiations have a higher chance of potential progress.

Clearing the lists of the impossible or unattainable goals, leaving the more attainable ones and some space for new ideas to accumulate, will help focus attention on what remains: a legally binding treaty with a limited scope and tailored to the emerging security environment. If, to paraphrase Winston Churchill, legally binding agreements are the worst form of arms control for strategic nuclear weapons except for all the others that have been tried, then steps should be taken to increase the probability they might succeed, or at least serve as the basis for discussion and potential progress.⁴³ For strategic arms control to endure, it must come in a form that can survive in the anticipated security environment and with the expected set of players at the negotiating table. Many of these have rejected legally binding arms control as a Cold War anachronism ill-suited for future endeavours, as an impossibility given US domestic politics, or as a lengthy process which cannot be negotiated before the NST ends in 2026. All of these criticisms have merit, but all these can be addressed through the following measures:

1. *Remember the benefits of legally binding treaties.* Legally binding treaties do much that is overlooked by people unfamiliar with their negotiation and implementation. They provide a formally agreed mechanism to share classified information with adversaries. They outline legal protections for inspectors, as well as specify who pays for what costs associated with verification and implementation. They create an implementation body to serve as a venue for formal and informal dialogue on a host of strategic stability-related issues. They serve as a training ground for the next generation of bilateral and multilateral arms-control negotiators, implementers, interpreters, translators and legal experts. They are durable and lasting, in the sense that it takes a lot to break them.
2. *Rebuilding bipartisan consensus for arms control as a tool to manage great-power competition.* Just as there

is on nuclear modernisation, there is a bipartisan coalition on strategic arms control to be built and sustained. But this requires selling arms control to a spectrum of legislators with differing goals, rather than relying on the moral suasion of arms control or disarmament as a categorical imperative. Some legislators will want to focus on China. Some want to ensure US nuclear modernisation. Some want to build new nuclear capabilities. Some want to cut or refocus the defence budget. Some want to burnish foreign-policy credentials by talking tough at the table to Russia and China. These are not goals that are incompatible with pursuing arms control with Russia and China. Appeals can be made in these areas; concessions are also likely in order. The US Senate should be deeply involved in setting the negotiating parameters for the next agreement. They should play an active role in the negotiations and they should be told in advance they will be provided with the negotiating record to aid in their ratification deliberations. These are known risks for the executive branch's negotiating parameters, but they are risks which can be managed and which are worth taking to build a needed partnership.

3. *Understanding the timeframes of arms-control negotiations.* Arms control is a lengthy process. The US and its allies should be preparing now for the outcome that the NST collapses prior to or expires in 2026 and nothing replaces it. As many have noted, this would be the first period since 1972 that US and Soviet/Russian strategic nuclear arsenals have not been subject to some form of legal limits.⁴⁴ Fear of this environment should not, however, be the primary driver for US negotiators. The end of the NST – as with many predecessor agreements which have ended over the last two decades – is the result, rather than the cause, of many of the instabilities in the world today. The world after the NST could look very similar to the world today, much of which is already competitive and unconstrained. Russia and China may not engage in negotiations before 2026, but the US and its allies should have a say in what a new 'acceptable' security environment would look like

and should outline their vision of arms control in this environment on their own timeline.

4. *Improving coordination among deterrence planners, technology experts, intelligence analysts and arms-control negotiators.* Arms control is a team sport – even domestically. It has always needed to coexist in an ecosystem driven by deterrence and armaments concerns. Its negotiating teams have always been brought together from inter-agency bureaucracies with different priorities and concerns. Just as 'integrated deterrence' has become the terminology of choice in US national-security documents, so has integrated arms control.⁴⁵ The preceding sections have shown the host of historical challenges that have faced arms control in general and the NST more specifically. Removing some of the clutter is a reminder that viable arms-control approaches require consensus between disparate communities of interest. This consensus provides not just durability but also better ideas than those focused on advancing one small agenda.

What Should the US Want in a New Agreement

The world after the NST can be sketched out. Already both sides have been seen moving towards the point where treaty-provided data will cease entirely and, thenceforth, grow increasingly outdated and redundant. The US and Russia, as the US noted in the 2022 and 2023 Compliance Reports, will base their estimates of the other's strategic force posture on intelligence information and their own analysis to fill in the gaps.⁴⁶ Uncertainties will increase. The delta between floors and ceilings in estimates will expand. Worst-case assumptions will prevail, given the poisoned bilateral relationship. Assumptions based on competitive conditions, a lack of information and the assumption of the need to hedge against the other will likely drive force-posture decisions, which will in turn lead to equivalent responses.

Analysts are beginning to explore where force postures and structures may go in this environment.⁴⁷ The US could employ its hedge of undeployed warheads to fill the perceived deterrence gap as it seeks to execute its modernisation programme.⁴⁸ Russia could increase the number of warheads deployed on its existing ICBMs and SLBMs,

Uploading: If New START collapsed, Russia could upload several hundred warheads to already deployed silo-based ICBMs.



(Robert Wallis/Corbis/Getty Images)

increase the output of its warm-missile- and warhead-production lines, or expand the development of its so-called 'novel' systems.^{49,50,51} China would likely assume US and Russian changes are directly related to their own nuclear-force decisions and could change the – currently unknown – endpoint of its own nuclear-modernisation plans accordingly. All sides will look to exploit and expand their respective nuclear infrastructures to compete effectively in a new dynamic environment. It would seemingly be of little value for China, Russia and the US to acquire more nuclear weapons (possibly driving other states, such as India and Pakistan, to also do so, with no additional security benefits), but dynamics spurred by a lack of information may drive all the parties in this direction.

If this is the predicted environment, common ground appears conceptually. The absence of arms control could be a reminder of the value it provided in certain competitive spaces when it was in existence. After years

of strategic nuclear-arms build-up with little apparent security benefit, political will could coalesce around the idea that some level of transparency and predictability is preferable to unwanted and costly arms racing and force-posture developments that decrease crisis stability. Arms control could have its moment again. This moment, if it comes, may have some pitfalls:

- Arms control could be asked to do too much in a competitive two-peer world, with hub-and-spoke regional relationships driving local arms races in East and South Asia and the Middle East. It needs to be scoped appropriately to what is achievable.
- Arms control could also be pushed into a 'grand bargain' framework. Again, trades need to be considered within a narrow scope of nuclear weapons, on systems judged to be of critical value to the US in the emerging security environment.
- Arms control could be pressed for too much transparency, after a prolonged period of hiding and controlling information. The US should focus on the information it needs to avoid arms-race and crisis instabilities, particularly information that adds confidence to what is known from other sources and information that helps to call out Russian lies and disinformation.
- Arms control could again be refocused on numbers and the need to drive them downward. In a deeply competitive environment, however, numbers are less important than information. Reductions could come from a new agreement, but they should not determine the success or failure of a negotiation.

If this is the anticipated future moment (collapse, competition, remembrance, opportunity), what should the US want, and how can the US best situate itself for this possibility?

Making progress when the opportunity presents itself often means doing the work well in advance, requiring a concrete proposal on nuclear weapons to serve as the cognitive anchor for future negotiations. Such a proposal needs to cover several bases. It must complement US deterrence and national-security goals. It must be driven by analysing the US future force structure against the anticipated forces structures of Russia and China – this analysis should drive the key questions of the proposal. It must be a clear

Figure 2: **Modernisation of the United States' nuclear triad**

NAME	RANGE (KM)	WARHEAD TYPE AND NUMBER	NUMBER OF STAGES	NUMBER OF LAUNCHERS (ESTIMATED)	INITIAL OPERATIONAL CAPABILITY
LGM-35A Sentinel	12,000+	NUCLEAR X1 (POSSIBLE MIRV) WARHEAD TYPE AND NUMBER SILO BASING OPTION	3	400	2029
UGM-133A Trident II D5LE2	12,000+	NUCLEAR X8 WARHEAD TYPE AND NUMBER COLUMBIA-CLASS SSBN BASING OPTION	3	280	2030s
AGM-181 Long-Range Stand-Off Weapon (LRSO)	2,400+	NUCLEAR X1 WARHEAD TYPE AND NUMBER B-21 RAIDER B-52H STRATOFORTRESS BASING OPTION	N/A	500	2030
B61-12	N/A	NUCLEAR X1 WARHEAD TYPE AND NUMBER B-21 RAIDER BASING OPTION	N/A	480	2022

Sources: IISS; *The Military Balance 2022*; *Bulletin of the Atomic Scientists*

articulation of what the US wants out of a nuclear-focused arms-control agreement with Russia and China. It must be easily explainable in terms of the interests of US allies and partners. It must be understandable to other states who may be less familiar with the history and workings of arms control. It must be defensible in terms of it being in Russia's and China's interest to engage with it. It must also likely be one piece of a broader effort, whereby the US articulates its arms-control positions and goals through multiple proposals in multiple areas to see where progress can be made. The focus here is on the nuclear proposal:

- **Form: A legally binding agreement.** The goal here is to create something durable, capable of withstanding shifts between US administrations and the predictable ups and downs in relationships with Russia and China. While the agreement may ultimately take some other form, it should start with the most ambitious goal.
- **Focus: Data on nuclear forces.** The goal here is to reduce uncertainties in particular areas by providing

data which can be checked against information gathered through other sources. The US wants data on Russian and Chinese nuclear forces. Russia and China seem to want their own lists of data from the US; a concrete proposal on what the US wants should force their hands on coming back with a concrete counter-offer on what they specifically want in these areas. Harsher limitations (bans, restrictions, eliminations, etc.) are likely to be overly expensive for the US to negotiate and unlikely to solve major concerns. Treaty-based data sharing may be more useful and more achievable.

- **Flexibility: Bilateral or trilateral.** The goal here is to have one proposal that can cover the various possibilities of player involvement by Russia and/or China. If all parties are involved, the treaty could include some ceilings designed to slow the perceptions of an out-of-control arms race. If only two parties agree, however, it will be more difficult to argue for caps and ceilings. It could instead

be a data-sharing agreement to account for the need to respond to the third party.

■ **Functionality: An expanded mandate for the treaty-implementation body.** Functionality means the range of operations that can be run on a computer or other electronic system. In the past, legally binding treaties have had a technical-level implementation body with a narrow authority. This limited functionality has left treaties vulnerable; they cannot adapt to broader trends in the security environment or discuss issues outside the treaty. Increased functionality in the form of a broader mandate and the ability for a treaty-mandated body to be able to discuss both the treaty itself as well as other strategic issues between the parties, would allow for broader discussions on next steps.

After a period of unfruitful build-ups, a trilateral approach with some form of loose ceilings or ranges would appear to be in all countries' interests. However, only so much depends on the merits of such an agreement. Putin will choose to engage or not depending on his own calculations about how he chooses to compete with the US post-invasion of Ukraine. Xi, likewise, will have to decide for himself whether to take up such a proposal. The pathway to future Chinese participation likely lies through lessons self-taught in Beijing, rather than persuasive arguments made from Washington and, to a much lesser extent, Moscow. China may have to learn independently, just as the US and USSR did, that more numbers and capabilities do not necessarily result in any tangible security improvement when other parties respond.

The goal of a concrete proposal is to frame the public debate and provide options, hopefully those supporting options provided through other proposals in other tracks. If China chooses not to participate, a US–Russian bilateral deal focusing on information exchange would allow each side to manage competition with China's strategic-forces growth while avoiding worst-case assumptions about the other. No ceilings or ranges would apply given Chinese non-participation, but the US and Russia would know what one another were doing as they responded to the third player in the peer equation. Progress may be made, in this agreement or another, on non-nuclear systems of concern. If a deal

remains elusive regarding limits on missile defences or conventional long-range strike systems, or for that matter offensive space and cyber capabilities, a working, functioning treaty-implementation body could serve as a consultative venue for such discussions to develop shared interest in restraint and increase understanding and predictability for these systems.

The process must begin anew somewhere, and there are advantages to being the first mover. The first mover can set out clearly what it wants in a new agreement and what the negotiating process will be. The global community needs to see that the US has a plan for moving forward with its adversaries, not just like-minded states. If Russia and China do engage, it will be within a framework set out by the US. If Russia and China choose not to engage, the US will only look like more of a leader. The US is also more comfortable being on the offense in arms control, proposing and defending its own initiatives, as opposed to debating and blocking the proposals made by Russia and China.

In tandem with the tabling of a concrete proposal on nuclear weapons, the US should be prepared to take tangible steps with its allies to show the downsides of Russia and China choosing *not* to engage in this arms-control proposal. This proposal would be balanced and bolstered by a clear articulation to Russia and China what the alternative to arms-control negotiations will be: the US and its allies will compete, they will adapt their strategy and postures accordingly, and because of these alterations, Russia and China will not gain the expected security benefits from such a competition. The current regimes in Moscow and Beijing, and their likely successors, are unconvinced by the moral arguments of arms control, and have not seen any real consequences for their irresponsible behaviour. They instead see value in building more forces, increasing risk and promoting instability. A convincing case must be made to them as to why it is in their interest to come to the table and negotiate. A clear picture must be painted of what happens when they do not engage. This plan has an uncomfortable timeline, likely stretching beyond 2026, but it is precisely this kind of timeframe to which both the deterrence and arms-control communities must grow more accustomed in their thinking. It can serve as a model not only for addressing nuclear weapons specifically, but also for finding other potential pathways for arms control.

Chapter Two: New START, Hard Stop

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Introduction

On 21 February 2023 President Vladimir Putin declared that Russia was suspending the implementation of New START, the last remaining US–Russian nuclear-arms-control treaty. This happened almost exactly 11 years after its entry into force and one year after its extension.

At first glance, it may seem that the 50-year history of nuclear-arms control is over. This is not necessarily the case. There is still a chance that Russia will restore New START to full operation. More importantly, nuclear-arms control is still needed – as an unrestricted arms race and the associated unpredictability of the ‘nuclear balance’ is not in the interest of any state, whether nuclear or non-nuclear, including Russia. Suspension of New START, however, means that arms control needs reinvention. The arms-control negotiation process, the underlying framework of which was developed in the 1970s, can no longer serve its original purpose. That reinvention is one of the biggest challenges the international community is to face in the coming years. Serious negotiations can hardly begin while the war in Ukraine continues, but discourse about new approaches must be launched as soon as practically possible.

This chapter will consider three issues: how and why New START was suspended; the crisis of nuclear-arms control after 2010; and the parameters of arms control beyond New START.

New START Suspension

The – publicly known – events leading to Russia’s suspension of New START began with Moscow’s abrupt cancellation of the Bilateral Consultative Commission (BCC) meeting on 29 November 2022, two days before it was due to begin. The BCC was due to discuss the resumption of inspections and Russia also planned to raise its long-standing complaints about the American implementation record (i.e., Russia claimed that the conversion of submarines and heavy bombers was not irreversible).⁵² The resumption of inspections after the temporary suspension caused by the COVID-19

pandemic seemed a technical issue, but Moscow refused to allow an American-requested inspection in August 2022 and demanded written guarantees from the United States that the travel and payment sanctions levied on Russia would not affect their inspectors in travelling from Russia to the US.⁵³

The BCC cancellation apparently caught Russian diplomats by surprise, based on the style in which initial statements were made, indicating that the decision was most likely made at the very top end of the Kremlin without prior discussion. There are suggestions that it was made at the 25 November 2022 meeting of the Security Council of the Russian Federation, which, officially, discussed the meeting of the Foreign Intelligence Service (SVR) Director Sergey Naryshkin and CIA Director William Burns in Istanbul.⁵⁴ Apparently, the discussion was broader and involved the entire spectrum of Russia’s relations with the West, with it being concluded that relations with the US and NATO were broken with no prospect of repair in the foreseeable future. The BCC, it would seem, became collateral damage to that strategic decision and new policy.

Initial statements suggested that Russian diplomats in charge of arms control hoped the cancellation could be reversed and the BCC would be held at a later date.⁵⁵ Eventually, however, they had to accept it was irreversible and two months later the Foreign Ministry declared that engagement on arms control remained impossible as long as the US continued to pursue ‘strategic defeat of Russia’.⁵⁶ Putin’s announcement of suspension of New START drew the line beneath that sequence.⁵⁷

Perhaps the most significant implication was that arms control had lost its special status in the bilateral relationship, as well as more broadly. Historically, the US and the Soviet Union, and latterly Russia, sought to ‘compartmentalize’ or protect the process from broader political developments and various crises. Indeed, SALT I (Strategic Arms Limitation Talks I) negotiations began and successfully concluded during the Vietnam War, even though

Soviet involvement there was greater than the American involvement in Ukraine today. Experts have convincingly argued that the trend toward the rejection of compartmentalisation is all-encompassing and, in fact, was started by president Barack Obama's administration in 2014 with the comprehensive response to Russia's annexation of Crimea.⁵⁸ Russia has joined the trend by ending the compartmentalisation of arms control.

Russian suspension of New START raises two pertinent questions: whether it had the right to do it, and what the practical consequences may be.

The Law of Treaties

Russia used Article 62 of the Vienna Convention on the Law of Treaties (VCLT) for suspending participation in New START, the same as it had cited in 2007 regarding freezing the implementation of the Conventional Forces in Europe (CFE) Treaty. Article 62 allows parties to suspend implementation of a treaty in case of fundamental change of circumstances, which 'constituted an essential basis of the consent of the parties to be bound by the treaty'. The clarification issued by the Foreign Ministry on the day Putin announced suspension stated that US and NATO assistance to Ukraine contradicted the principle of indivisible security, which is contained in the preamble to New START.⁵⁹ 'US policy is aimed at undermining the national security of Russia', the statement continues in direct reference to the VCLT, 'which directly contradicts the fundamental principles and understandings enshrined in the preamble to New START, on which the Treaty is based and without which it would not have been concluded'.⁶⁰ Putin's press secretary, Dmitry Peskov, subsequently explained that from the Kremlin's point of view, the US and other NATO nuclear states (namely, France and the United Kingdom), are 'de facto at war with us'.⁶¹

Obviously, the validity of this explanation is contestable. Assistant Secretary of State Mallory Stewart commented that circumstances had indeed changed, but this was the result of Russian and not US behaviour. The US, in contrast, 'actively worked to avoid [unfavourable conditions], including by holding an extraordinary session of the U.S.-Russia Strategic Stability Dialogue in January 2022'.⁶² Mutual accusations will continue, but

the disagreement cannot be resolved in the foreseeable future while these conditions remain in place.

Article 72(1) of VCLT 'releases the parties between which the operation of the treaty is suspended from the obligation to perform the treaty in their mutual relations during the period of suspension'.⁶³ At the same time, Article 72(2) cautions that 'during the period of suspension the parties shall refrain from acts tending to obstruct the resumption of the operation of the treaty'. In line with Article 72, the above-referenced statement of the Foreign Ministry clarified that Russia would not violate numerical and qualitative restrictions of New START, but that provision of all data and notifications would be suspended except for notifications about launches of ballistic missiles, which are covered by the 1988 Ballistic Missile Launch Notification Agreement.⁶⁴ In theory, this will allow Russia to return to full compliance with the treaty at any moment – if such a decision is made, of course, which at the moment does not seem likely. This means that all transparency measures with respect to strategic offensive arms – arguably, the main reason for Moscow and Washington agreeing to New START in the first place – would be stopped. Beyond that general point, two specific challenges are likely to be particularly serious:

- Firstly, in the absence of onsite inspections, the US will not be able to verify the number of deployed warheads. Eventually, the US will likely have to proceed from a worst-case assumption that the number of uploaded warheads is greater than any declared figure.
- Secondly, in the absence of notifications, it will be difficult to differentiate strategic forces exercises from the so-called operational deployments – the legal definition for high-alert status (effectively, preparation for a strike). This feature may further increase the tension between the two countries and provide Russia with additional opportunities for nuclear-brinksmanship 'games'.

Although the strategic balance is highly resilient and will not change in the next several years, we will have to deal with increasingly low predictability, mutual suspicions and perhaps, eventually, the launch of programmes that could further destabilise strategic stability.

The Crisis of Nuclear-arms Control

To fully understand the predicament in which we find ourselves, it is illustrative to compare how much time the US and the Soviet Union/Russia spent negotiating – and not negotiating – during and after the Cold War.

In the 22 years between the commencement of SALT I talks in 1969 and the signing of START I (Strategic Arms Reduction Treaty I) in August 1991, there were only three short breaks: 1976 to early 1977 (US presidential campaign and review by the new administration), August 1979 (signing of SALT II) to October 1981 (commencement of Intermediate-Range Nuclear Forces (INF) Treaty talks) and November 1983 (when the Soviet Union walked out of negotiations) to January 1985 (when it returned under a new formula). In total, the two sides spent approximately five years without negotiations and the rest of time discussing one treaty or another.

In contrast, during the 31 years since the end of the Cold War, the US and Russia spent only around five years negotiating (START II negotiations in 1992, followed by on and off discussions of START III in 1997–2000, less than a year of Strategic Offensive Reductions Treaty (SORT) negotiations in 2001–02, and, finally, less than a year of New START negotiations in 2009–10) while the rest of the time they did not engage at all, except for the Strategic Security Dialogue (SSD), which began in 2010 and usually consisted of twice-yearly 1–2 day-long meetings that did not qualify as pre-negotiations, i.e., did not even start covering details of a possible framework for the next treaty. Only in the summer to early autumn of 2020 and in late 2021 did the US and Russia manage to create working groups that engaged in in-depth discussions which could be called pre-negotiations.

At the zenith of arms control, in the last years of the Cold War, three regimes covered the entire range of nuclear arsenals – START I (strategic weapons), the INF Treaty (US and Soviet ground-launched ballistic and cruise missiles with ranges between 500–5,500 kilometres) and Presidential Nuclear Initiatives (PNIs) – politically binding unilateral statements (covering the majority of other US and Soviet nuclear weapons). The post-Cold War period, by comparison, is a list of failures. START II never entered into force. START III

High watermark: The end of the Cold War was arguably the zenith of bilateral arms control.



(Peter Turnley/Corbis/VCG/Getty Images)

did not materialise, even though the 1997 framework was quite actionable. SORT, although called a treaty, was actually a joint statement that lacked verification, transparency and other essential elements. The 1987 INF Treaty collapsed in 2019 due to the United States' long-standing accusation against Russia of it developing the 9M729 (RS-SSC-8 *Screwdriver*) ground-launched cruise missile which violated the agreement's range restrictions, a violation which Moscow never admitted to. Perhaps more importantly, the parties did not properly use the mechanism intended to resolve suspicions and uncertainties.⁶⁵ The suspension of New START completes this woeful record.

The failures of arms control during the post-Cold War period can be attributed to several causes: the end of global geopolitical confrontation between the US and the Soviet Union in the early 1990s and concomitant reductions in their nuclear arsenals, which reduced the risk of nuclear war; the lower priority accorded to arms control with the collapse in military capabilities through this period, which had to compete with other goals; a reluctance to invest political capital in pushing for further disarmament agreements, such as the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and the Fissile Material Cut-off Treaty (FMCT); and the unwillingness to look for concessions – an unavoidable element of serious negotiations – through the inter-agency mechanism and US Congress, for example. The attitude of the George W. Bush administration is indicative of this approach: it held arms control in low regard (e.g., its withdrawal from the Anti-Ballistic Missile (ABM) Treaty), but at the

Figure 3: Russia's nuclear triad

NAME	RANGE (KM)	NUMBER OF STAGES	NUMBER OF LAUNCHERS (ESTIMATED)	INITIAL OPERATIONAL CAPABILITY	
RS-18 (RS-SS-19 Stiletto Mod 3)	9,000+	NUCLEAR X 6 WARHEAD TYPE AND NUMBER SILO BASING OPTION	2 + PBV	<20	1980
RS-12M Topol (RS-SS-25 Sickle)	11,000+	NUCLEAR X 1 WARHEAD TYPE AND NUMBER ROAD-MOBILE TEL BASING OPTION	3 + PBV	9	1988
RS-20 (RS-SS-18 Satan Mod 5)	10,000+	NUCLEAR X 10 WARHEAD TYPE AND NUMBER SILO BASING OPTION	2 + PBV	46	1988
RS-12M2 Topol-M (RS-SS-27 Mod 1)	11,000+	NUCLEAR X 1 WARHEAD TYPE AND NUMBER SILO ROAD-MOBILE TEL BASING OPTION	3 + PBV	60	1997
RS-24 Yars (RS-SS-27 Mod 2)	11,000+	NUCLEAR X 3 WARHEAD TYPE AND NUMBER ROAD-MOBILE TEL SILO BASING OPTION	3 + PBV	18	2006
RS-24 Yars S (RS-SS-2)	11,000+	NUCLEAR X 3 WARHEAD TYPE AND NUMBER ROAD-MOBILE TEL BASING OPTION	3 + PBV	99	2010
RS-18 (RS-SS-19 Stiletto Mod 4)	10,000+	NUCLEAR X 1 WARHEAD TYPE AND NUMBER SILO BASING OPTION	2	6	2019
R-29RMU2 Sineva/Lainer (RS-SS-N-23 Skiff)	8,000+	NUCLEAR X 4 WARHEAD TYPE AND NUMBER DELFIN-CLASS (PROJECT 667BDRM (DELTA IV) SSBN BASING OPTION	3 + PBV	96	2007
Bulava (RS-SS-N-32)	8,000+	NUCLEAR X 6 WARHEAD TYPE AND NUMBER BOREY-CLASS (PROJECT 955 (DOLGORUKIY) SSBN BOREY-A-CLASS (PROJECT 955A) SSBN BASING OPTION	3 + PBV	100	2018
Kh-55SM (RS-AS-15B Kent)	2,800+	NUCLEAR X 1 WARHEAD TYPE AND NUMBER TU-95MS BEAR H/MOD BEAR H TU-160 BLACKJACK/MOD BLACKJACK BASING OPTION	N/A	SEVERAL HUNDRED	1984
Kh-102 (RS-AS-23B Kodiak)	C. 4,000	NUCLEAR X 1 WARHEAD TYPE AND NUMBER TU-95MS MOD BEAR H TU-160 MOD BLACKJACK BASING OPTION	N/A	SEVERAL HUNDRED	1995

Sources: IISS analysis; IISS Military Balance+; *The Military Balance 2022*; National Air and Space Intelligence Center

same time presided over the biggest unilateral reduction of the American nuclear stockpile.

The primary reason Moscow and Washington have failed to agree on what arms control post-New START will look like is because of their fundamental differences in how they approach, and have approached, the security environment and, accordingly, which issues should be tackled through arms control. By its nature, New START was a transitional treaty, which was foremost supposed to address the loss of transparency into each other's strategic capabilities after the expiration of START I in 2009. Resolving this opacity was urgent and the US and Russia limited themselves to the achievable basics; both postponed more ambitious plans for the next treaty, which New START, with its 10-year lifetime, was supposed to bridge.

Following the signing of New START, then-president Obama expressed hope that the next treaty would concentrate 'on reducing both our strategic and tactical weapons, including non-deployed weapons'.⁶⁶ The goal of expanding arms control to nuclear stockpiles, both deployed and non-deployed, in all categories (strategic and non-strategic) became a central element of the American agenda.⁶⁷

Russia's approach was almost antithetical. Russia, like the Soviet Union, had long insisted that limitations on missile defence should be an integral part of any arms-control deal. The US-led wars in Iraq in 1991 and 2003 and NATO intervention in Kosovo in 1999 resulted in Moscow seeking limitations on high-precision long-range conventional weapons. Russian officials and analysts argued this class of weapons gave the US a chance to defeat Russia without resorting to nuclear weapons. It was in response to this perceived vulnerability that Russia increased its reliance on nuclear weapons in its 2000 National Security Concept and in the 2000 Military Doctrine.⁶⁸

From Moscow's perspective, New START represented a concession because it did not address these weapons. Russia agreed to limit discussion of missile defence in the preamble of the treaty and to forego its demands on the inclusion of long-range conventional weapons, but indicated that these concessions were not repeatable. During the New START ratification hearings, Foreign Minister Sergei Lavrov consolidated

elements of the Russian position, which had previously been raised separately, into what he called an 'integrative approach' (later to be known as a 'security equation'). Lavrov argued that any future agreement should combine strategic nuclear weapons, long-range conventional weapons, missile defence and 'space weapons', the last of which has never been properly defined.⁶⁹

American and Russian ratification resolutions only reinforced the differences in the approaches of the two parties.⁷⁰ The US Senate rejected negotiations on missile defence and long-range conventional weapons, but insisted that any future negotiations include non-strategic nuclear weapons. The Russian Duma, in contrast, insisted that missile defence and long-range conventional weapons had to be part of any future agreement while also rejecting separate negotiations on tactical nuclear weapons, although it left open the possibility that this category be put on the table under certain conditions.

Subsequent meetings within the SSD framework only echoed the two differing approaches. In 2013, Obama proposed an additional one-third reduction within the New START context to 1,000 accountable warheads for each party, but Moscow refused on the basis that arms control should only be limited to strategic nuclear weapons.⁷¹

The summer of 2020, however, saw an accelerated tempo over discussions to extend New START, which was due to expire in February 2021. Another seemingly routine SSD meeting between special presidential envoy for arms control Marshall Billingslea and Deputy Foreign Minister Sergey Ryabkov unexpectedly resulted

Coverage: Russia and the US have differing views about what and what not to include in arms control.



(DANIEL MIHAILESCU/AFP/Getty Images)

in a decision to create working groups to discuss a framework for a future treaty. After several months of intense discussions, US national security advisor Robert O'Brien and Russian Secretary of the Security Council Nikolai Patrushev came close to a resolution of one of the most controversial issues: Russia agreed to freeze its nuclear stockpile – the first time Moscow put non-deployed (including non-strategic) nuclear weapons on the negotiating table. The agreement did not materialise due to the US insisting that the freeze should be verifiable, whereas Russia only agreed to a politically binding commitment.⁷²

Although Russia retracted its offer on freezing the nuclear stockpile the following year, the agreement is nonetheless significant as it demonstrated that Russia was not completely averse to it and could, perhaps within a broader package, agree to limit it.

By 2021, there were also reasons for the US to consider making changes to its historic position. Russia had made significant advances in missile defence and long-range conventional weapons, to the extent that its 2014 Military Doctrine introduced the notion of non-nuclear deterrence.⁷³ It still lagged behind the US, but the technological gap had narrowed and it was no longer in the interest of the US to leave these two issue-areas unregulated. By narrowing the agenda to nuclear weapons, Washington effectively gave Russia a free hand in pursuing modernisation in these areas. In addition, Russia also actively worked on developing anti-satellite (ASAT) weapons and hypersonic aero-ballistic and Mach 5+ sea-launched missiles and was the first to deploy them.

Following the US–Russian summit in June 2021, Moscow and Washington resumed the SSD and subsequently created two working groups, including one to examine advanced conventional weapons, outer-space weapons and both sides' missile defences. While their work was confidential, participants privately suggested that in-depth discussions revealed greater common ground between the approaches of the two parties than would appear from prior official statements.

This work was interrupted by Russia's full-blown invasion of Ukraine and one year later Moscow suspended New START. The age of bilateral arms control, which began in 1969, appears over. One is left to wonder

whether it is needed in the future and, if so, whether it is even feasible and what its goals may be in the new era.

The Future of Arms Control: Back to Basics and New Horizons

Going back to basics

Before trying to chart the future of arms control, it is worth considering what it can, and what it cannot, achieve.

The original conceptualisation of arms control was quite limited. It dates back to the early 1960s and was primarily intended to reduce the cost of the arms race and to 'make war less likely', while reducing the probability of nuclear war between the two Cold War superpowers by weakening the incentives for a surprise large-scale nuclear-first strike.^{74,75} This goal was operationalised as 'efforts to limit the numbers, types, or disposition of weapons'.⁷⁶ Underlying the aim was the assumption that any imbalance, which gives one of the parties a theoretical capability to win a nuclear war, would be dangerously destabilising and bound to trigger an arms race as the disadvantaged party sought to catch up. Accordingly, US–Soviet arms-control efforts during the Cold War concentrated on three closely interrelated goals:

- achieving a rough balance of deployed (i.e., ready to use) delivery vehicles and, at a later stage, of warheads attributed to deployed delivery vehicles;
- adopting measures to regulate modernisation to guard against unanticipated breakthroughs; and
- measures to avoid war as a result of accident or misunderstanding.

These same principles have also been applied to conventional-arms control, including the Mutually-Balanced Force Reduction Talks (MBFR) (1973–89) and resulting 1990 CFE Treaty, which emphasised limiting the capability of NATO and the Warsaw Pact to launch a large-scale surprise attack.

As a tool for managing and ensuring a military balance, arms control is not the same as total nuclear disarmament. The two overlap on a practical level to the extent that reductions will likely utilise arms-control tools to ensure that disarmament is pursued in a balanced and safe manner, but whereas the former is a tool, the latter is a goal.

Nonetheless, after the end of the Cold War, the concepts of arms control and total nuclear disarmament became blurred, at least in public perception. The end of the superpower confrontation seemed to open the way to the total elimination of nuclear weapons. However, the rather limited achievements of the arms-control process resulted in growing disenchantment among non-nuclear states, who expected much faster movement toward complete elimination of nuclear weapons. This conflict stimulated the conclusion of the Treaty on the Prohibition of Nuclear Weapons (TPNW).

The return of a systemic conflict pitting the US against China, Russia and perhaps other major powers arguably makes nuclear disarmament unachievable for the foreseeable future.⁷⁷ The US and its allies are unquestionably the strongest economic and military ‘bloc’ in the world and are capable of defeating any adversary in a conventional war. For those states, nuclear deterrence is a dual guarantee of not being attacked and of avoiding total defeat in the case of a direct conflict. Hypothetically, if Russia did not have nuclear weapons, it is likely it would not have attacked Ukraine because, if it did, NATO would have likely entered the war on Kyiv’s behalf and defeated Russia. China’s nuclear build-up may also indicate its intention to place greater reliance on nuclear weapons due to its increasingly tense relationship with the US.

The goal of a world free of nuclear weapons must not be abandoned, of course, but it is imperative to clearly differentiate between the goal of total nuclear disarmament and the tool of arms control in practical policy. The prevention of a general war and controlling any arms race is an urgent task and as a matter of practical policy should have its own place in states’ policies. Total nuclear disarmament is a longer-term goal which must include addressing the reasons countries seek nuclear weapons; the United States’ Creating an Environment for Nuclear Disarmament (CEND) initiative is a helpful framework for this ambition and its working group on interim measures to reduce the risks associated with nuclear weapons represents an appropriate and sufficient link between arms control and disarmament. Returning to the post-Cold War tendency of conflating arms control and nuclear disarmament would only risk losing both.

The Scope of Arms Control

A ‘return to the basics’ does not equal a return to the arms-control agreements of the Cold War era. The attempt to continue applying old-style agreements fits the post-Cold War security environment poorly and is one of the reasons for the collapse of the arms-control framework.

One characteristic of arms control in the 1970s and 1980s was the clear divide between nuclear and conventional weapons. Conventional forces were essentially an ‘upgraded’ version of equipment used in the Second World War – for example tanks, mechanised infantry, artillery, attack helicopters and combat aircraft, intended for use on the battlefield. Nuclear weapons were a ‘doomsday tool’. As a result, arms control was able to develop along two independent tracks: nuclear (the SALT–START sequence) and conventional (the MBFR–CFE sequence) with success or failure of one not affecting the other. This separation no longer appears to be feasible.

The introduction of long-range precision-guided conventional weapons and their successful use by the US in the Gulf War ushered in a new era: it became theoretically possible to wage and win a large-scale war at the theatre level, if not at the strategic level, below the nuclear threshold. This development has had four consequences for arms control:

1. Firstly, a bridge between the conventional and the nuclear domain emerged and the Cold War pattern of holding separate negotiations could no longer be sustained.
2. Secondly, the perceived value of nuclear weapons increased for states that lagged behind in long-range conventional capabilities. Resultantly, stragglers such as Russia sought to close the technological gap, resulting in conventional-arms races, while also developing scenarios for limited nuclear use to de-escalate a large-scale conventional war.
3. Thirdly, according to traditional categorisation, the majority of precision-guided weapons are theatre-range, but they have strategic implications. Consequently, the long-standing breakdown of short-, intermediate- and strategic-range weapons, is less relevant.
4. Fourthly, Russia, in a major departure from the Cold War Soviet pattern, began to emphasise dual capability as a major design benefit for its

missiles, owing to the revolution in increased precision; less is known about China, but it seems to be following the same path.

Similar developments have affected missile defence and DA-ASAT (direct-ascent anti-satellite) missiles. Contrary to the 1970s and even 1980s, the line today between strategic and non-strategic missile defences has diminished. Capabilities have become more efficient, as seen in the ongoing war in Ukraine, where Russia had limited success in destroying Ukrainian air and missile defences in the early phase of the war and, as a result, has used more offensive weapons as the war has continued in an attempt to attrit Ukraine's defences. This is the 'classic' dynamic of the offence–defence relationship, which underlay the 1972 ABM Treaty. Further, penetration capabilities for strategic-missile defence have evolved as well. Consequently, concentration on offensive weapons alone will be difficult and perhaps undermine the efficiency of future treaties.

Finally, one important, albeit still developing, feature is the emergence of China as a major nuclear power. The recent revelation of the massive build-up of its strategic forces potentially creates a 'nuclear triangle' when the strategic balance – and associated arms control – has traditionally been bilateral. Russian–Chinese military cooperation further complicates the situation: in 2019, Putin disclosed that Russia was assisting China with building an early warning system (EWS), which assumes close integration of the two countries' EWSs, and that the two countries undertake limited joint military exercises, including of patrols with strategic bombers.⁷⁸ This trend predates the war against Ukraine by several years and clearly reflects a long-term policy for Beijing and Moscow, which will not be reversed, regardless of how and when the ongoing war ends.

A nuclear triangle is inherently unstable (see China–India–Pakistan or North Korea–US–China for real-world examples of this instability). Were the US to insist on a capability that allows it to reliably deter both Russia and China, this would provide it with a clear superiority vis-à-vis either of them. Moreover, such an attempt would bring China and Russia even closer together, which is not the most desirable outcome for the US. On the other hand, equal limits for all three countries

Trilateral: China's strategic force expansion complicates a previous bilateral arms-control arrangement.



(GREG BAKER/AFP/Getty Images)

would allow China to expand its arsenal and create a Chinese–Russian combined superiority over the US, which is presumably unacceptable for the US as well.

Further, it will be difficult, if at all possible, to exclude France and the UK: Russia has already insisted they become parties in any future arms-control agreement and Beijing will likely support Moscow on that. Five- (or indeed nine-) party balances are even less stable than trilateral structures and negotiating limits that would satisfy all five (or all nine nuclear-armed states) will be an immensely challenging task. The Washington Naval Treaty may serve as a precedent for multilateral arms control, but it also details the weaknesses of such a scheme.

In the end, 'back to basics' will not be easy. Negotiators will have to agree on several key issues before any negotiations can even begin:

- **How many parties?** In the near future, the traditional bilateral US–Russian format is more than sufficient, but eventually a transition to a multilateral format may become unavoidable. Perhaps it may also be worth considering a two-level arrangement: bilateral and five-party negotiations/agreements conducted/concluded in parallel, while the sizeable and growing arsenals of nuclear states not involved in the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) could be temporarily put aside to be included at the next stage (it may be advisable to consider requesting them to make politically binding statements about freezing their nuclear arsenals in the meantime).
- **Which issue areas should be included?** Since there is no longer compartmentalisation, the scope of

future agreement(s) could be stretched almost to infinity and never concluded. Equally, a very narrow focus (nuclear weapons alone) will not work either. The Russian ‘strategic equation’ approach appears reasonably sensible as a starting point, but will need to be adjusted. For example, the vague concept of ‘space weapons’ may need to be narrowed down to ASATs, including those which are space-based, because they may be more practical for damaging large satellite constellations than DA-ASAT missiles. Overall, the guiding principle should perhaps be the same as in the early arms control, with an emphasis on decreasing capability for a surprise large-scale attack (not necessarily nuclear) as well as – for defence systems – an assured second strike.

■ What is the format of future agreement(s)? All relevant issues cannot be squeezed into one treaty, especially since it will be impossible to quantify relationships between nuclear and conventional weapons. A more sensible approach is the one that was used for SALT I: separate agreements with links between domains presumed rather than explicit. It may also make sense to give them different legal status – treaty, executive agreement, politically binding measures, etc. After all, only nuclear weapons need strict accounting, whereas conventional weapons only begin to matter when their number is measured in hundreds.

A Narrow Versus Broad Agenda

The goal of preventing large-scale war (whether nuclear or initially conventional with a high risk of crossing the nuclear threshold) can be achieved through two inter-related, but distinct paths, which have immediate relevance for the arms-control agenda.

The first, or Path I, focuses on the *prevention* of surprise attacks, which requires greater transparency of the parties’ military activities. This is primarily (although not exclusively) achieved through confidence-building measures (CBMs), many of which remain in existence today (Incidents at Sea Agreement (INCSEA) and the Agreement on the Prevention of Nuclear War).

The second, or Path II, addresses the *capabilities* for large-scale surprise strikes. This path presumes more

comprehensive arms-control treaties, such as the SALT-START line, to address the deployed capabilities, which can be used on short notice.

As an aside, there could also be a Path III: a further development of Path II, which merged into the disarmament domain and is in line with Obama’s vision of controlling entire nuclear stockpiles. Path III is how arms control began to merge with the goal of total nuclear disarmament after the end of the Cold War, and subsequently has contributed to the denigration of arms control by some in the US and Russia. Path III does not appear realistic in the near future given the collapse of existing arms-control agreements and the extremely high tension in the US–Russian relationship.

There is nothing particularly new about this conceptualisation of arms-control paths: since the late 1960s, the US and the Soviet Union/Russia pursued both Path I and Path II. Some of these agreements they pursued bilaterally, others as part of multilateral efforts. A clearer understanding of the goals and the scope of each path, however, is important in order to better plan the future arms-control process. They are characterised by differences in feasibility and sequencing.

With regard to feasibility, measures that do not affect the posture and normal operations of the forces and do not involve intrusive verification should be easier to negotiate. Path I (primarily CBMs) is also easier to pursue in multilateral formats: the Commission on Security and Cooperation in Europe (CSCE)/Organization for Security and Co-operation in Europe (OSCE) CBMs, which led to the Vienna Document, testify to that. In contrast, Path II may involve significant changes in military postures and R&D programmes; they also force militaries to change normal operations of forces as a result of substantive restrictions and to accommodate in-depth verification inspections. Consequently, negotiations are bound to be more difficult, as governments are forced to make harder choices as they make concessions or face domestic opposition; in short, Path II requires abandoning military programmes of some importance by one or both sides, and thus also requires significant investment of political capital to succeed, which is always in short supply and only possible in limited windows of time. Path II measures are also more difficult to multilateralise. In other words, in terms of feasibility, Path I measures can address the most

immediate tasks of preventing war and generally represent a ‘lower-hanging fruit’.

Sequencing, however, is more of a challenge, and is not straightforward for either Path I or Path II. As a rule, CBMs are easier to negotiate in periods of high tension (the INCSEA negotiations and the Madrid and the Stockholm CBM conferences are examples) precisely because these measures are more practical and feasible; these can also be complemented with elementary arms-control measures along the lines of SALT I (i.e., caps with minimal impact on R&D and qualitative arms racing).

Yet transparency of postures and activities may be difficult to achieve during the Russia–Ukraine War and probably also in the immediate post-war period. Russia’s refusal to share data about its armed forces in the context of the Vienna Document in early 2023 was apparently in part (in addition to broader political motives) caused by a reluctance to disclose data which could provide a window into wartime posture and casualties sustained. At the same time, discussion about Path II measures, which should shape military postures in the future, could begin any time the political atmosphere allows it.

Path I: Possible Additional CBMs

Measures aimed at preventing escalation due to misperception, which is particularly likely in a highly tense situation, should take priority. Some of these measures already exist, but it may be advisable to make them more systematic and eventually build a comprehensive multilateral regime either among the five nuclear states or with a broader set of countries. These should include:

- Advance notifications about launches of ballistic missiles of strategic and theatre ranges. These could follow the rules of the Hague Code of Conduct, but be legally binding. Data should include at least impact area, launch area and the type(s) of missiles.
- Given the radically increased role of cruise missiles, a similar notification regime could be considered also for long-range (those above 300 km) cruise missiles (the area of active war could be temporarily excepted).
- Notifications about exercises of strategic forces. These will primarily apply to Russian and Chinese mobile intercontinental ballistic missiles (ICBMs),

Limitations: Putin’s de-siloing of arms control will make progress difficult.



(Contributor/Getty Images)

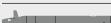
but could also include notifications about naval and air exercises, especially in the vicinity of the other side.

- An analogue of Nuclear Risk Reduction Centers (NRRCs) in all nuclear states to ensure reliability and confidentiality of notifications: the more data is exchanged through notifications, the greater the need for confidentiality.
- Multilateral INCSEAs, either among the permanent members of the United Nations Security Council (P5), preferably also non-NPT nuclear-weapon states (NWSs), or in regional formats, such as the OSCE or Association of Southeast Asian Nations (ASEAN) context.

At some point, perhaps toward the end of 2023 or in early 2024, it may make sense for Russia and the US to make politically binding statements (whether unilateral or joint) on the adherence of the US and Russia to the central limits of New START. Without verification, New START will amount to little but a CBM, although even that may somewhat help stabilise the situation. It would be even better if such an informal arrangement includes biannual exchanges of data – one of the elements of the transparency regime under New START.

At a later date, it may be desirable to seriously contemplate a transparency regime for long-range dual-capable and conventional weapons, considering the prominent role they have played in all armed conflicts in the post-Cold War era. The focus of such a regime could be on Europe and adjacent sea and air space and include

Figure 4: Russian nuclear systems under development

NAME	RANGE (KM)	WARHEAD TYPE AND NUMBER	NUMBER OF STAGES	NUMBER OF LAUNCHERS (ESTIMATED)	INITIAL OPERATIONAL CAPABILITY
RS-28 Sarmat (RS-SS-X-29)  <ul style="list-style-type: none"> ◦ Type – ICBM ◦ Fuel type – Liquid 	10,000+	NUCLEAR X MULTIPLE OR HGV WARHEAD TYPE AND NUMBER SILO BASING OPTION	3 + PBV	UNKNOWN, LIKELY AT LEAST 40	POSSIBLY 2023
Kedr (RS-SS-X-?)  <ul style="list-style-type: none"> ◦ Type – ICBM ◦ Fuel type – Unknown, likely solid 	UNKNOWN	NUCLEAR, LIKELY MIRV WARHEAD TYPE AND NUMBER UNKNOWN, LIKELY SILO AND ROAD-MOBILE TEL BASING OPTION	UNKNOWN	UNKNOWN	POSSIBLY EARLY-2030S
Burevestnik (RS-SSC-X-9 Skyfall)  <ul style="list-style-type: none"> ◦ Type – GLCM ◦ Fuel type – Nuclear 	10,000+	NUCLEAR X1 WARHEAD TYPE AND NUMBER UNKNOWN, LIKELY ROAD-MOBILE TEL BASING OPTION	N/A	N/A	UNKNOWN
Poseidon  <ul style="list-style-type: none"> ◦ Type – UUV ◦ Fuel type – Nuclear 	UNKNOWN	NUCLEAR X1 WARHEAD TYPE AND NUMBER BELGOROD-CLASS (PROJECT 09852) SSBN KHABAROVSK-CLASS (PROJECT 09851) SSBN KHABAROVSK-II-CLASS (PROJECT 09853) SSBN BASING OPTION	N/A	UNKNOWN, LIKELY AT LEAST 12	POSSIBLY MID-2020S

Sources: IISS analysis; IISS Military Balance+; *The Military Balance 2022*; National Air and Space Intelligence Center

exchange of data on deployment and movement of such missiles as well as their platforms (ships, submarines and aircraft). The regime could cover all ballistic and cruise missiles with the range above 300 km (after the demise of the INF Treaty, the 500-km cut-off range has lost relevance and the Missile Technology Control Regime (MTCR) definition may be more appropriate). A similar regime could be negotiated for the Asia-Pacific; this may be more challenging and it does not seem practical to delay a Europe-focused regime in pursuit of this.

In the end, the system of transparency and notification measures should include all deployments and activities that may be perceived by the other side as dangerous. Achieving such a regime will be difficult: the Russian record with respect to the Vienna Document (especially the circumvention of its provisions on mandatory observation of large-scale exercises) demonstrates the challenges. The benefits will be considerable as well: they will help seriously reduce the risk of war and help stabilise the security environment.

The greatest challenge will be the engagement of China. It may be advisable to first create such a regime for the Euro-Atlantic space and then begin to gradually involve states in East and Southeast Asia, as well as the Asia-Pacific, so that China's opposition becomes increasingly untenable.

Path II: A New Stage of Arms Control

There can be many options for the next stage of arms control, but in all likelihood it will feature a more comprehensive approach, perhaps following the example of the Nuclear and Space Talks (NST) in 1983–91, which included three working groups – on strategic, ground-launched intermediate-range, and space weapons. Accordingly, the new formula could include 1) nuclear weapons (perhaps with subdivisions for strategic and non-strategic weapons, and perhaps for nuclear stockpiles), 2) long-range (defined as greater than 300 km, as per the MTCR definition of Category I systems) precision-guided dual-capable and conventional weapons, and 3) missile defence (starting with

defence against theatre-range missiles) and ASAT weapons. As noted above, the optimal approach is parallel negotiations and conclusion of several regimes, possibly with different systems of accounting and limitations and perhaps with different legal status, as happened in 1972 with SALT I.

Initially, it would be advisable to limit nuclear weapons and missile defence/ASAT negotiations to the bilateral US–Russian format, although the working group on conventional weapons could be multilateral and include at least NATO countries. Although leaving out the growing Chinese nuclear arsenal is far from a perfect solution, successful bilateral negotiations could help pave the way toward multilateralisation.

Any such negotiations will take a long time and cannot, by definition, be completed before the expiration of New START (even if it is restored to full status, which does not appear likely). It would, however, facilitate negotiations if New START not only resumed (perhaps in 2024 or 2025) but, better, is re-implemented beyond 2026, which may require ratification in both the US and Russia (the treaty itself allows for only one five-year extension, which has already been used). This will not be easy, but a degree of predictability in strategic weapons during negotiations will be better than complete uncertainty. After all, New START was originally designed to ensure a predictable strategic environment during subsequent talks on a more comprehensive treaty, negotiations on which have never commenced.

The Nuclear Weapons Issue-area

The most obvious element of any future agreement is the reduction of deployed strategic weapons – a well-trodden path that will continue the START series. One possible limit is 1,000 deployed warheads, which was proposed by Obama in 2013, which appears the lowest level to which bilateral reductions could be taken. Russia might prefer a smaller reduction – perhaps to 1,200 deployed warheads – and China’s rising arsenal might require an even higher ceiling (warhead numbers would assume the same accounting rules as in New START).

Some of Russia’s new strategic weapons may present a challenge to the US because these do not fall under the criteria and rules of New START or any previous treaty. For example, the *Avangard* manoeuvring warhead is classified as just another warhead under existing New

START definitions. The STATUS-6/*Poseidon* uninhabited underwater vehicle will require new rules because such a category does not currently exist. The claimed ability of the RS-28 *Sarmat* (RS-SS-X-29) ICBM (currently under development), and, in the future, the nuclear-powered and armed cruise missile, *Burevestnik* (RS-SSC-X-09 *Skyfall*), to reach the US from the Southern Hemisphere, has not been addressed in earlier treaties either (with the partial exception of the 1967 Outer Space Treaty, which may affect *Sarmat* as it might utilise a partially orbital trajectory, unlike *Burevestnik*, which will remain within the Earth’s atmosphere). Russian hypersonic weapons fall under the definition of non-strategic weapons and cannot be addressed in a New START-type treaty.

Russia will be hard-pushed to avoid negotiations on non-strategic nuclear weapons any further: its usual precondition of the withdrawal of the United States’ B61 guided nuclear free-fall bombs from Europe has been invalidated by Moscow’s new nuclear-sharing arrangement with Belarus. By default, this means that the parties will need to tackle nuclear stockpiles. START accounting rules cannot be used for that category because the majority of non-strategic delivery vehicles are dual-capable. The only reasonable option is to shift focus from delivery vehicles to nuclear stockpiles. This will require vastly more complex and intrusive verification measures, which have no precedent. Yet it is not unachievable. The US has advanced this option since at least 2011 and although Russia has traditionally resisted such measures, its agreement in 2020 to discuss nuclear stockpiles demonstrates that under the right conditions it will agree to such negotiations.

One serious challenge will be whether limits on strategic and non-strategic nuclear stockpiles should be established. One increasingly popular idea is to establish a single equal limit on the entire US and Russian nuclear stockpiles with the freedom to mix strategic and non-strategic warheads. This proposal will force Russia to choose between inequality in strategic stockpiles or a deep reduction of non-strategic weapons.⁷⁹ Although attractive, this proposal will be very difficult to negotiate: Russia will claim that since it is not separated from main theatres by oceans, as is the US, it needs more non-strategic nuclear weapons, while at the same time needs to maintain a balance in strategic forces.

It may be better to concentrate on achieving verifiable transparency for nuclear stockpiles and forego attempts to establish equal limits. After all, non-deployed nuclear weapons do not represent a threat until they are mated to delivery vehicles. Since non-strategic nuclear warheads are kept in storage in peacetime, it would be sufficient to know their locations, numbers, perhaps also types, and, above all, be certain that their mating to delivery vehicles will be detected in a timely manner.

Transitioning to a multilateral format will instantly devalue traditional definitions because weapons classified as non-strategic in the US–Russian context will be viewed as strategic among adjacent NWSs. Even if negotiations are limited to the P5 format, China may insist it requires more nuclear weapons to remain balanced with India. The best option would be, initially, to concentrate on achieving greater transparency of nuclear-delivery vehicles as well as obligations to freeze nuclear stockpiles and ensure verifiable transparency for them. The main goal of the initial stage of multilateral negotiations should be to launch structured in-depth dialogue, leaving more ambitious aspirations for the future.

Limited progress on nuclear-arms reductions will unavoidably entail a conflict between NWS and the proponents of TPNW. It cannot be avoided in the foreseeable future, but perhaps could be mitigated by emphasising that expansion of nuclear-arms control to non-strategic and overall stability of military (rather than only nuclear) balance represent tangible steps toward creating conditions for eventual nuclear disarmament.

Long-range Conventional Weapons Issue-area

For obvious reasons, long-range conventional weapons do not require as strict treatment as nuclear weapons. The focus could be on preventing the capability of each side (US/NATO and Russia primarily, but also China) from conducting a large-scale surprise attack. Such a regime could augment the transparency system outlined above with limits on long-range conventional weapons (for ground-launched ones) and platforms for such weapons (for the sea- and air-launched variety) within agreed distances from the territory of the other side or its allies. The biggest challenge will be limits on submarines equipped with long-range conventional weapons as these cannot be tracked. Since, however, they carry a

limited number of missiles, parties could attempt to limit the total number of launchers on submarines equipped with these weapons.

Limits on total holdings of such weapons may be impractical as they will be difficult to verify. However, verification requirements should be easier than for nuclear warheads: there is no need to verify every missile, only up to several dozen or perhaps a hundred: these weapons have low military utility in small numbers and hence numbers could vary over rather wide ranges.

Missile Defence and Space Weapons Issue-area

The dual emphasis of Russia on missile-defence systems and defence-penetration capability shows that US secretary of defense Robert McNamara was right about the relationship between offence and defence. Maintenance of strategic balance and avoidance of arms racing requires addressing both. In any event, Russian advances in developing and fielding its own missile defences can no longer be ignored.

The overall logic of limits on missile-defence capabilities could follow the ABM Treaty, but in a more relaxed manner. Specifically, it could provide for limits on strategic defence (perhaps somewhat higher than the 44 ground-based interceptors that the US has deployed to this date), but without geographical limitations for interceptors or radars.

Similar arrangements could be made for theatre-level missile defence. Such limitations could help reduce the motives for arms racing, especially of long-range conventional weapons: the ongoing war in Ukraine demonstrates that Russia has rather successfully overwhelmed Ukrainian missile defences through its sheer number of offensive assets.

The space-weapons element will be controversial. Russia and China have insisted on limiting weapons that could strike targets on the Earth's surface from space, but such weapons do not exist and the prospects of their development in the near future are dubious at best. ASAT weapons represent a much more immediate and real danger, hence it would be desirable to expand arms-control measures to them. DA weapons are an obvious and easy target for such measures. China, India, Russia and the US have conducted at least one test each already, but a ban on such testing could arrest further

development of that capability and discourage other countries from joining this group.

DA-ASATs do not seem to be the most dangerous weapon systems, however. Constellations of satellites relevant to modern warfare consist of many units which provide redundancy from existing types of DA-ASATs that are only capable of destroying a single target. Resilience through redundancy would seem to be a successful deterrence strategy in this domain. A more ambitious, but also more challenging task, may be to address the prospect of future space-based ASAT systems capable of destroying large numbers of small satellites (such as orbital battle stations or directed debris storms).

An Uncertain Future

The analysis and proposals contained in this paper proceed from a very specific understanding of the political system and policies of Russia in the foreseeable future, including the following assumptions:

- The war against Ukraine will end without the complete defeat of Russia and its unconditional surrender. The political regime will likely survive Putin; his successor will pursue more or less the same policy, but the country will overall be in strategic retreat or at least retrenchment.
- Russia will be hard-pressed to rebuild its military capability in the short to medium term, especially in long-range conventional weapons, and will thus return to greater reliance on nuclear weapons of the style practiced by Russia between 2000

and 2014 that were used to offset Russia's conventional inferiority, albeit in a more complex and challenging political and security environment.

- Russia will complete its political and economic reorientation toward Asia and the Middle East; Russia's economic interdependence with the West will become minimal at best.
- Russia will be more dependent on China, although will retain a degree of autonomy (perhaps by playing China off against India).

These assumptions appear the most likely outcomes, but the future is highly uncertain; perhaps more uncertain than it was in the last days of the Soviet Union. The likelihood of this outcome is 50% at best. Obviously, regime collapse in Russia will create radically different conditions for arms control, which may become unnecessary or impossible. For example, the scenario that involves the break-up of Russia and/or radical democratisation will likely resolve all security issues the US and NATO have vis-à-vis Russia (this is the least likely outcome, however). Alternatively, a nationalist dictatorship (a more likely outcome in the short and medium term than democratisation) will not likely engage in arms control or any measures to stabilise the security environment, at least not any time soon.

Since planning for all feasible – whether realistic or theoretical – scenarios is impossible, this paper chose to proceed from the evolutionary path in the US/NATO-Russian relationship.

Notes

- 1 Or as it is more formally known in the US, the Treaty with Russia on Measures for the Further Reduction and Limitation of Strategic Offensive Arms.
- 2 Michael Albertson, 'Negotiating with Putin's Russia: Lessons Learned from a Lost Decade of Bilateral Arms Control', Lawrence Livermore National Laboratory, Center for Global Security Research, March 2021, p. 59, <https://cgsr.llnl.gov/content/assets/docs/CGSR-LivermorePaper9.pdf>.
- 3 See Rose Gottemoeller, *Negotiating the New START Treaty* (Amherst, MA: Cambria Press, May 2021)
- 4 Charles C. Flowerree, 'On Tending Arms Control Agreements', *The Washington Quarterly*, vol. 13, no. 1, 13 July 2009, pp. 199–215.
- 5 US Department of State, 'New START Treaty Aggregate Numbers of Strategic Offensive Arms of the United States and the Russian Federation, February 2011 – March 2022', <https://www.state.gov/new-start-treaty-aggregate-numbers-of-strategic-offensive-arms-of-the-united-states-and-the-russian-federation-february-2011-march-2022/>.
- 6 US Air Force, 'B-1B Lancer', <https://www.af.mil/About-Us/Fact-Sheets/Display/Article/104500/b-1b-lancer/>.
- 7 Arms Control Association, 'New START at a Glance', April 2022, <https://www.armscontrol.org/factsheets/NewSTART>.
- 8 Oriana Pawlyk, 'Russia Claims US Violation Treaty Over "Unverified" B-52 Bombers, Missiles', Military.com, <https://www.military.com/dodbuzz/2019/01/15/russia-claims-us-violating-treaty-over-unverified-b-52-bombers-missiles.html>.
- 9 US Department of State, 'Russian Noncompliance With and Invalid Suspension of the New START Treaty', 15 March 2023, <https://www.state.gov/russian-noncompliance-with-and-invalid-suspension-of-the-new-start-treaty/>.
- 10 Office of the Assistant Secretary of Defense, 'New START Treaty (NST)', <https://www.acq.osd.mil/asda/ssipm/sdc/tc/nst/protocol/PartThree.html>.
- 11 US Department of State, 'Assistant Secretary Mallory Stewart's Remarks at the Brookings Institution', 27 February 2023, <https://www.state.gov/mallory-stewart-remarks-at-brookings-institution/>.
- 12 Michael R. Gordon, 'Russia Warns U.S. Moves Threaten 2011 Nuclear Pact', *Wall Street Journal*, <https://www.wsj.com/articles/russia-challenges-u-s-compliance-with-nuclear-treaty-11547548200>; Заявление МИД России в связи с приостановлением Российской Федерации действия Договора о мерах по дальнейшему сокращению и ограничению стратегических наступательных вооружений (ДЧБ) [Foreign Ministry statement in connection with the Russian Federation suspending the Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START)], 21 February 2023, https://www.mid.ru/ru/press_service/spokesman/official_statement/1855184/?lang=en.
- 13 Formally, the 'Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of Their Intermediate-Range and Shorter-Range Missiles'.
- 14 For an excellent legal analysis on the validity of Russia's NST 'suspension', see Rose Gottemoeller and Marshall L. Brown Jr., 'Legal Aspects of Russia's New START Suspension Provide Opportunities For US Policy Makers', 2 March 2023, <https://thebulletin.org/2023/03/legal-aspects-of-russias-new-start-suspension-provide-opportunities-for-us-policy-makers/>.
- 15 Pavel Felgenhauer, 'Obama's Nuclear Cuts Initiative Meets Frosty Response in Moscow', The Jamestown Foundation, 20 June 2013, <https://jamestown.org/program/obamas-nuclear-cuts-initiative-meets-frosty-response-in-moscow/>.
- 16 Starting with the Strategic Arms Limitation Talks (SALT I), and running consecutively through SALT II, INF, Strategic Arms Reduction Treaty (START I), START II, START III, Strategic Offensive Reductions Treaty (SORT), and finally NST.
- 17 Like the *Burevestnik*, *Poseidon* and *Kinzhal* nuclear-armed, nuclear-powered delivery systems.
- 18 House Armed Services Committee, 'Strategic Forces Subcommittee Hearing: FY24 Strategic Forces Posture', 8 March 2023, <https://armedservices.house.gov/hearings/strategic-forces-subcommittee-hearing-fy24-strategic-forces-posture>.
- 19 As seen for example in military journals such as *Russian Military Thought*. See Timothy Thomas, 'Russian Military Thought: Concepts and Elements', MITRE Corporation, August 2019, <https://www.mitre.org/sites/default/files/2021-11/prs-19-1004-russian-military-thought-concepts-elements.pdf>.
- 20 Timothy Ash, 'It's Costing Peanuts for the US to Defeat Russia', Center for European Policy Analysis, 18 November 2022, <https://cepa.org/article/its-costing-peanuts-for-the-us-to-defeat-russia/>.
- 21 Heather Williams, 'Russia Suspends New START and Increases Nuclear Risks', Center for Strategic & International Studies, 23 February 2023, <https://www.csis.org/analysis/russia-suspends-new-start-and-increases-nuclear-risks>.

22 Michael Kofman and Rob Lee, 'Not Built For Purpose: The Russian Military's Ill-fated Force Design', *War on the Rocks*, 2 June 2022, <https://warontherocks.com/2022/06/not-built-for-purpose-the-russian-militarys-ill-fated-force-design/>.

23 Alexandra Prokopenko, 'The Cost of War: Russian Economy Faces a Decade of Regress', Carnegie Endowment for International Peace, 19 December 2022, <https://carnegieendowment.org/politika/88664>.

24 Olivia Gazis and Caitlin Yilek, 'China "Most Consequential Threat" to U.S. National Security, Top Intelligence Official Says', CBS News, 8 March 2023, <https://www.cbsnews.com/news/china-worldwide-threats-hearing/>.

25 Congress.gov, 'Ex. Rept. 111-6 - Treaty With Russia on Measures For Further Reduction and Limitation of Strategic Offensive Arms (The New Start Treaty)', 2009-10, <https://www.congress.gov/congressional-report/111th-congress/executive-report/6/1>.

26 Shannon Bugos, 'U.S., Russia to Continue Strategic Stability Dialogue in 2022', Arms Control Association, 21 December 2021, <https://www.armscontrol.org/blog/2021-12/us-russian-nuclear-arms-control-watch>.

27 National Institute for Public Policy, 'Arms Control and the New START Treaty', 8 December 2020, https://nipp.org/information_series/billingslea_marshall-arms-control-and-the-new-start-treaty-information-series-no-472/.

28 Maxim Starchak, 'Strategic Parity or Why "American" Arms Control Is Not Interested In Russia', George C. Marshall European Center for Security Studies, https://www.marshallcenter.org/sites/default/files/files/2022-04/SI72_Strategic_Parity_Starchak%2020APR.pdf.

29 Michael Krepon, 'The Golden Age of Nuclear Arms Control', Stimson, 22 April 2019, <https://www.stimson.org/2019/golden-age-nuclear-arms-control-michael-krepon/#:~:text=The%20thirteen%2Dyear%20period%20from,Intermediate%2Drange%20Nuclear%20Forces%20Treaty>.

30 A phrase popularised in negotiating literature by Robert Mnookin. See Robert Mnookin, *Bargaining with the Devil: When to Negotiate, When to Fight* (New York: Simon and Schuster, 2010).

31 See Luke Harding, 'Vladimir Putin Accuses West of Seeking to "Dismember" Russia', *Guardian*, 26 February 2023, <https://www.theguardian.com/world/2023/feb/26/vladimir-putin-accuses-west-of-seeking-to-dismember-russia>.

32 Charles Maynes, 'Putin Says Russia Will Stop Participating in its Last Nuclear Treaty With the U.S.', NPR, 21 February 2023, <https://www.npr.org/2023/02/21/1158463688/putin-tells-russian-parliament-the-west-is-fighting-to-dismember-russia>.

33 DW, 'Russia Decries US Decision Not to Rejoin Arms Control Pact', 28 May 2021, <https://www.dw.com/en/us-tells-russia-it-will-not-rejoin-open-skies-arms-control-pact/a-57698568>.

34 The White House, 'National Security Strategy', October 2022, <https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf>.

35 US Department of State, '2016 Compliance Report', <https://2009-2017.state.gov/t/avc/rls/rpt/2016/index.htm>.

36 US Department of State, 'Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments', <https://www.state.gov/adherence-to-and-compliance-with-arms-control-nonproliferation-and-disarmament-agreements-and-commitments/>.

37 US Department of State, 'Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments (Compliance Report)', <https://2017-2021.state.gov/adherence-to-and-compliance-with-arms-control-nonproliferation-and-disarmament-agreements-and-commitments-compliance-report/index.html>.

38 Jerrold L. Schecter, *Russian Negotiating Behavior: Continuity and Transition* (Washington DC, United States Institute of Peace, 1998), p. 180.

39 See Joseph G. Whelan, *Soviet Diplomacy and Negotiating Behavior: Emerging New Context for U.S. Diplomacy* (Congressional Research Service, Washington DC, Library of Congress, 1979); Joseph G. Whelan, *Soviet Diplomacy and Negotiating Behavior, 1979-1988: New Tests for U.S. Diplomacy* (Congressional Research Service, Washington, DC, Library of Congress, 1988); Joseph G. Whelan, *Soviet Diplomacy and Negotiating Behavior, 1988-1990: Gorbachev-Reagan-Bush Meetings at the Summit* (Congressional Research Service, Washington, DC, Library of Congress, 1981).

40 Eugene Rumer, 'The Method Behind Putin's New START Madness', Carnegie Endowment for International Peace, 28 February 2023, <https://carnegieendowment.org/2023/02/28/method-behind-putin-s-new-start-madness-pub-89161>.

41 'Low-hanging fruit' is a well-used term in arms-control literature. See Fahad Shabbir, 'US, Russia Can Seek Missile Defense INF Limits After New START Deal - Arms', Los Alamos Study Group, https://www.lasg.org/press/2021/UrduPoint_6Feb2021.html; Paul Sonne, 'The U.S. Glimpses Possible Common Ground With Russia', *Washington Post*, 21 March 2018, <https://www.washingtonpost.com/world/national-security/the-us-glimpses-possible-common-ground>.

with-russia/2018/03/21/a6baec60-2c7c-11e8-911f-ca7f68bfff0fc_story.html; Tong Zhao, 'Opportunities for Nuclear Arms Control Engagement With China', Arms Control Association, January/February 2020, <https://www.armscontrol.org/act/2020-01/features/opportunities-nuclear-arms-control-engagement-china>; Ramesh Thakur, 'The Return of the Nuclear Debate', *Open Canada*, 14 August 2014, <https://opencanada.org/the-return-of-the-nuclear-debate/>; Hertie School, 'Experts from US, Russia and Germany discuss arms control at CISP event', 26 November 2018, <https://www.hertie-school.org/en/nato-russia-relations-event>; Clingendael, 'The Demise of the INF Treaty: Can the EU Save Arms Control?', 24 January 2019, <https://www.clingendael.org/publication/demise-inf-treaty-can-eu-save-arms-control>.

42 See Russia's debris-generating direct-ascent anti-satellite missile test in November 2021: US Space Command, 'Russian Direct-ascent Anti-satellite Missile Test Creates Significant, Long-lasting Space Debris', 15 November 2021, <https://www.spacecom.mil/Newsroom/News/Article-Display/Article/2842957/russian-direct-ascent-anti-satellite-missile-test-creates-significant-long-last/>; and its continuous nuclear threats against NATO and Ukraine despite its P5 statement on preventing nuclear war and avoiding arms races: The White House, 'Russian Direct-ascent Anti-satellite Missile Test Creates Significant, Long-lasting Space Debris', 3 January 2022, <https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/03/p5-statement-on-preventing-nuclear-war-and-avoiding-arms-races/>.

43 International Churchill Society, 'The Worst Form of Government', 25 February 2016, <https://winstonchurchill.org/resources/quotes/the-worst-form-of-government/>.

44 See, as two examples, Daryl G. Kimball, 'How Congress Can Leverage Action on New START', Arms Control Association, March 2019, <https://www.armscontrol.org/act/2019-03/focus/congress-leverage-action-new-start>; and Colleen Moore and Ben Freeman, 'Nuclear Arms Nightmare: Don't Let New START Die', The National Interest, 8 April 2020, <https://nationalinterest.org/blog/skeptics/nuclear-arms-nightmare-dont-let-new-start-die-142012>.

45 Heather Williams, Suzanne Claeys and Rebecca Hersman, 'Integrated Arms Control in an Era of Strategic Competition', Center for Strategic & International Studies, 21 January 2022, <https://www.csis.org/analysis/integrated-arms-control-era-strategic-competition>.

46 US Department of State, 'Report to Congress on Implementation of the New START Treaty', 31 January 2020, <https://www.state.gov/wp-content/uploads/2023/01/2022-New-START-Implementation-Report.pdf>; 'US Department of State, New Start Annual Implementation Report', 31 January 2020, <https://www.state.gov/wp-content/uploads/2022/04/New-START-Treaty-Annual-Implementation-Report.pdf>.

47 William Alberque and Timothy Wright, 'New START Under New Pressure', IISS *Online Analysis*, 24 February 2023, <https://www.iiss.org/blogs/analysis/2023/02/new-start-under-new-pressure>.

48 'China's Emergence as a Second Nuclear Peer: Implications for U.S. Nuclear Deterrence Strategy', Center for Global Security Research, Spring 2023, p. 7, https://cgsr.llnl.gov/content/assets/docs/CGSR_Two_Peer_230314.pdf.

49 Matt Korda and Hans Kristensen, 'If Arms Control Collapses, US and Russian Strategic Nuclear Arsenals Could Double In Size', Federation of American Scientists, 7 February 2023, <https://fas.org/blogs/security/2023/02/if-arms-control-collapses-us-and-russian-strategic-nuclear-arsenals-could-double-in-size/>.

50 Center for Global Security, 'Stockpile Stewardship in an Era of Renewed Strategic Competition', pp. 43–6.

51 In this case, 'warm missile' means a production line of missiles that has only recently stopped or is still producing small numbers.

52 See Russian Foreign Ministry 'O Rossiisko-Amerikanskov Dogovore o SNV' [On the Russian-American Treaty on Strategic Weapons], 28 April 2021, https://mid.ru/ru/foreign_policy/international_safety/disarmament/voenno-strategicheskie_problemy/1413415/. In the end of 2022, the deputy chief of the Department of Non-Proliferation and Arms Control of the Foreign Ministry admitted that 'some progress had been made' on these issues ('Vladimir Yermakov: Zima ne Tolko za Oknom, no i v Otnosheniyakh s CShA' [Vladimir Yermakov: Winter is Not Only Outside the Window, but also in Relations with the USA], RIA-Novosti, 30 November 2022 <https://ria.ru/20221130/ermakov-1835175164.html>). Nonetheless, in a statement in February 2023, the Foreign Ministry declared that the unresolved conversion issues affected 'more than 100' strategic delivery vehicles, the same figure as in 2021; 'Zayavlenie MID Rossii o Situatsii s Dogovorom o Merakh po Dalneishemu Sokrashcheniyu I Ogranicheniyu Strategicheskikh Nastupatelnykh Vooruzhenii (DSNV)' [Statement by the Russian Foreign Ministry on the situation regarding the Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (START)], 8 February 2023, https://www.mid.ru/ru/foreign_policy/news/1852877/.

53 Interfax, 'Russia Making Sites Subject to Inspections Under New START Temporarily Unavailable For Such Inspections - Foreign Ministry Statement', 8 August 2022, <https://interfax.com/newsroom/top-stories/82049/>.

54 'Vladimir Putin Provel Operativnoe Soveshchanie s Postoyannymi Chlenami Soveta Bezopasnosti' [Vladimir Putin held an operational meeting with permanent members of the Security Council], Security Council of the Russian Federation, 25 November 2022, <http://www.scrf.gov.ru/news/allnews/3393/>.

55 'Zamglavy MIDa Ryabkov Obyasnil, Pochemu Bylo Prinyato Reshenie Otkazatsya ot Vstrechi po DSNV s SShA' [Deputy Foreign Minister Ryabkov Explained Why the Decision to Cancel the Meeting with the United States on New START Was Made], *Kommersant*, 29 November 2022, https://www.kommersant.ru/doc/5694095?from=top_main_1; and 'Ryabkov: Rossiya Ne Planiruet Predlagat SShA Novye Daty Komissii po DSNV' [Ryabkov: Russia Does Not Plan to Propose New Dates on the New START Commission to the United States], *Kommersant*, 6 December 2022, <https://ria.ru/20221206/komissiya-1836790943.html>.

56 'Zayavlenie MID Rossii o Situatsii s Dogovorom o Merakh po Dalneishemu Sokrashcheniyu i Ogranicheniyu Strategicheskikh Nastupatelnykh Vooruzhenii (DSNV)' [Statement by the Russian Foreign Ministry on the situation Regarding the Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (START)], Ministry of Foreign Affairs of the Russia Federation, 8 February 2023, https://www.mid.ru/ru/foreign_policy/news/1852877/; and Yevgenia Chukalina, 'Kto prav, tot ne vinovat: pochemu ne vozobnovilis' inspekcii v ramkah DSNV' [The one who is right is not to blame: why START inspections have not resumed], *Izvestiya*, 13 February 2023, <https://iz.ru/1468872/evgeniia-chukalina/kto-prav-tot-ne-vinovat-pochemu-ne-vozobnovilis-inspekcii-v-ramkakh-dsuv>.

57 President of Russia Website, 'Poslanie Preszidenta Federalmonu Sobraniyu' [Address of the President to the Federal Assembly], 21 February 2023, kremlin.ru/events/president/news/70565.

58 Hanna Notte, 'US-Russian Relations Can Still Get Worse', *War on the Rocks*, 22 February 2023, <https://warontherocks.com/2023/02/u-s-russian-relations-can-still-get-worse/>.

59 'Zayavlenie MID Rossii v Svyazi s Priostanovleniem Rossiiskoi Federatsiei Deistviya Dogovora o Merakh po Dalneishemu Sokrashcheniyu i Ogranicheniyu Strategicheskikh Nastupatelnykh Vooruzhenii (DSNV)' [Statement of the Foreign Ministry of Russia in Connection with the Suspension by the Russian Federation of Operation of the Treaty on the Measures for the Further Reduction and Limitation of Strategic Offensive Weapons (New START)], Ministry of Foreign Affairs of the Russian Federation, 21 February 2023, https://www.mid.ru/ru/foreign_policy/news/1855184/.

60 *Ibid.*

61 Petr Marchenko, Yevgeniya Chukalina and Luybov Lezhneva, 'Poka Nikakikh Predvybornykh Nastroyenii Net – u Putina Del Mnogo' [So Far No Pre-Election Mood - Putin Has a Lot to Do], *Izvestiya*, 28 February 2023, <https://iz.ru/1476223/petr-marchenko-evgeniia-chukalina-liubov-lezhneva/poka-nikakikh-predvybornykh-nastroyenii-net-u-putina-del-mnogo>.

62 US Department of State, 'Assistant Secretary Mallory Stewart's remarks at the Brookings Institution', 27 February 2023, <https://www.state.gov/mallory-stewart-remarks-at-brookings-institution/>.

63 United Nations, 'Vienna Convention on the Law of the Treaties, 1969', 2005, p. 25, https://legal.un.org/ilc/texts/instruments/english/conventions/1_1_1969.pdf.

64 Ministry of Foreign Affairs of the Russia Federation, 'Statement by the Russian Foreign Ministry on the suspension by the Russian Federation of the Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (START)', 21 February 2023, https://www.mid.ru/ru/foreign_policy/news/1855184/.

65 For example, a test flight of the 9M729 cruise missile with access to full telemetry could have helped to determine its range (the same procedure was used in START I to determine the range of ballistic missiles).

66 The White House, 'Remarks by Obama and Medvedev of Russia at New START Treaty Signing Ceremony and Press Conference, Prague', 8 April 2010, <https://obamawhitehouse.archives.gov/the-press-office/remarks-president-obama-and-president-medvedev-russia-new-start-treaty-signing-cere>.

67 All previous US-Soviet/Russian nuclear-arms control treaties focused on delivery vehicles, whereas deployed warheads were limited indirectly through the number of warheads assigned to each category and type of delivery vehicle; non-deployed (stored) nuclear warheads were not limited at all.

68 For an analysis of nuclear-policy-related elements of the 2000 National Security Concept and Military Doctrine, see Nikolai Sokov, 'Russia's New National Security Concept: The Nuclear Angle', Middlebury Institute of International Studies at Monterey, 19 January 2000, <https://nonproliferation.org/russias-new-national-security-concept/the-nuclear-angle>

-security-concept-the-nuclear-angle/; and Nikolai Sokov, 'Russia's 2000 Nuclear Doctrine', Nuclear Threat Initiative, 30 September 1999, <https://www.nti.org/analysis/articles/russias-2000-military-doctrine/>.

69 Gosudarstvennaya Duma, *Stenogramma Zasedanii*, The State Duma, 'The Minutes of the Sessions', vol. 38. no. 206, Spring Session 2011, 11–28 January 2011, (State Duma, 2013), <http://duma.gov.ru/media/files/GmAOkSBrfU64liL1U549iIvt7uKBV1e9.pdf>.

70 'Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms', Congress.gov, 22 December 2010, <https://www.congress.gov/treaty-document/111th-congress/5/>; and 'O Ratifikatsii Dogovora Mezhdu Rossiskoi Federatsiei i Soedinennymi Shtatami Ameriki o Merakh po Dalneishemu Sorkashcheniyu i Ogranicheniyu Strategiceskikh Nastupatelnykh Vooruzhenii, Prinyato Gosudarstvennoi Dumoi 25 Yanvarya 2011 g. i Sovetom Federatsii 28 Yanvarya 2011 g' [On the Ratification of the Treaty between the Russian Federation and the United States of America on Measures for Further Reduction and Limitation of Strategic Offensive Arms, Adopted by the State Duma on January 25, 2011 and by the Federation Council on January 28, 2011], https://sozd.duma.gov.ru/bill/382931-5?sortEventsByNum=num_up&sortEventsByDate=date_up.

71 The White House, Office of the Press Secretary, 'Remarks by President Obama at the Brandenburg Gate --Berlin, Germany', 19 June 2013, www.whitehouse.gov/the-press-office/2013/06/19/remarks-president-obama-brandenburg-gate-berlin-germany.

72 Matthew Lee, 'US, Russia Said Close to Deal on Nuclear Warheads Freeze', Associated Press, 9 October 2020, <https://apnews.com/article/donald-trump-elections-archive-vladimir-putin-presidential-elections-8ffef83f9abed665fbfb53252873f034>.

73 Ministry of Emergency Situations of the Russian Federation, 'Military Doctrine of the Russian Federation', 25 December 2014, <https://mchs.gov.ru/dokumenty/2940>.

74 See Thomas Schelling and Morton Halperin, *Strategy and Arms Control* (New York: 21st Century Fund, 1961); and Hedley Bull, *The Control of the Arms Race* (New York: Praeger, 1961).

75 Robert Jervis, 'Arms Control, Stability, and Causes of War', *Political Science Quarterly*, vol. 108, no. 2, Summer 1993, p. 239.

76 Joseph Nye, 'Arms Control and International Politics', *Deadalus*, vol. 120, no. 1, Winter, 1991, p. 145.

77 Statements by Indian officials consistently display unhappiness with the dominance of the West. This is not conflict, of course, but hardly harmony.

78 President of Russia Website, 'Zasedanie Diskussionnogo Kluba "Valdai"' [A Meeting of the Discussion Club 'Valdai'], 3 October 2019, <http://kremlin.ru/events/president/transcripts/speeches/61719>.

79 Steven Pifer, 'Arms Control Options for Non-Strategic Nuclear Weapons', in *Tactical Nuclear Weapons and NATO*, Strategic Studies Institute, US Army War College, 2012, p. 284–5.

Chapter One

The opinions are those of the author and do not necessarily represent the opinions of Lawrence Livermore National Laboratory, Lawrence Livermore National Security, the US Department of Energy, the National Nuclear Security Administration or the US government.

Chapter Two

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