

I. Russian–United States nuclear arms control and disarmament

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Events in 2019 clearly showed that bilateral nuclear arms control between Russia and the United States was failing. On 2 August the USA formally withdrew from the 1987 Treaty on the Elimination of Intermediate-range and Shorter-range Missiles (INF Treaty) due principally to alleged non-compliance by Russia, leading to the treaty's demise.¹ In addition, there was no agreement to extend the only remaining nuclear arms control agreement between Russia and the USA—the 2010 Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START)—which, if not extended before February 2021, will also lapse.² With these two decisions, Russian–US arms control faced the most significant crisis since 2002, when the USA withdrew from the bilateral 1972 Anti-Ballistic Missile Treaty (ABM Treaty).³

As bilateral efforts stalled, there were some limited and conflicting efforts to move the debates into a trilateral format including China or a multilateral format including other nuclear weapon states. However, the prospects for replacing bilateral Russian–US agreements with a new multilateral architecture that includes China were not promising. Instead, the post-INF Treaty world was already seeing the first signs of further missile proliferation, with the USA test-firing two missiles that would not have been allowed under the treaty.

This section reviews the key developments in 2019 in the INF and New START treaties and concludes by arguing that the era of bilateral nuclear arms control treaties between the two countries appears to be coming to a close.

The collapse of the Intermediate-range Nuclear Forces Treaty

By the end of 2018, the INF Treaty dispute between Russia and the USA (along with its allies in the North Atlantic Treaty Organization, NATO) had reached a point where the possibility of salvaging the treaty had become extremely unlikely.⁴ On 4 December 2018 the US Department of State and

¹ For a summary and other details of the INF Treaty see annex A, section III, in this volume.

² For a summary and other details of New START see annex A, section III, in this volume.

³ For a summary and other details of the ABM Treaty see annex A, section III, in this volume. On its demise see Kile, S. N., 'Ballistic missile defence and nuclear arms control', *SIPRI Yearbook 2002*, pp. 500–11; and Kile, S. N., 'Nuclear arms control, non-proliferation and ballistic missile defence', *SIPRI Yearbook 2003*, pp. 603–604.

⁴ For developments related to the INF Treaty in 2018 see Topychkanov, P., Kile, S. N. and Davis, I., 'US–Russian nuclear arms control and disarmament', *SIPRI Yearbook 2019*, pp. 369–77.

Box 11.1. The 9M729 missile system and the 1987 Intermediate-range Nuclear Forces Treaty

The 1987 Intermediate-range Nuclear Forces (INF) Treaty banned Russia, the United States and its other parties from possessing, producing or testing ground-launched ballistic and cruise missiles with a range of 500–5500 kilometres.^a The treaty permitted testing of a missile from a fixed ground launcher to a prohibited range if the missile was intended to be sea- or air-launched once deployed. The USA alleges that Russia first tested a new missile, designated 9M729 (or SSC-8 by NATO), from a fixed launcher to a prohibited range and then from a mobile launcher to a permitted range (below 500 km). By combining these test results, it was able to develop a prohibited ground-launched missile.^b Russia denies this.^c

There are few open source technical specifications on the 9M729 missile system. Independent experts consider that the Russian Navy's 3M-14 Kalibr sea-launched cruise missile (NATO designation SS-N-30A) could have served as the basic model for the missile.^d It is also suggested that the 9M729 missile could be used with the Iskander-M launcher.^e Although this launcher is not directly banned by the INF Treaty, its use with a banned system would mean that it must be destroyed along with the prohibited missiles.

^a For a summary and other details of the Treaty on the Elimination of Intermediate-range and Shorter-range Missiles see annex A, section III, in this volume.

^b US Office of the Director of National Intelligence, 'Director of National Intelligence Daniel Coats on Russia's Intermediate-range Nuclear Forces (INF) Treaty violation', 30 Nov. 2018.

^c US Department of State, 'Timeline of highlighted US diplomacy regarding the INF Treaty since 2013', Fact sheet, 30 July 2019; and 'US fails to rectify INF violations, senior Russian diplomat says', TASS, 5 Aug. 2019.

^d Podvig, P., 'The INF Treaty culprit identified. Now what?', Russian Strategic Nuclear Forces, 5 Dec. 2017.

^e Podvig (note d).

the foreign ministers of NATO members made simultaneous statements alleging Russia's 'material breach' of the INF Treaty.⁵ The allegations, which date back to 2013, centred on Russia's 9M729 mobile ground-launched cruise missile (GLCM), which was alleged to have a flight range prohibited by the treaty (see box 11.1). Russia has consistently denied these allegations.

After the USA was persuaded by European NATO members to give Russia a 60-day grace period until early February 2019, the NATO secretary general, Jens Stoltenberg, warned Russia that it had a 'last chance' to comply with the INF Treaty.⁶ For the USA and NATO, compliance meant the verifiable destruction of the 9M729 missiles, its launchers and related equipment. If this did not happen, the USA would suspend its commitments under the treaty and give the required six-month notice of withdrawal.

⁵ US Department of States, 'Russia's violation of the Intermediate-Range Nuclear Forces (INF) Treaty', Fact sheet, 4 Dec. 2018; and NATO, Statement on the Intermediate-Range Nuclear Forces (INF) Treaty, Press Release no. (2018) 162, 4 Dec. 2018.

⁶ NATO, 'Press conference by NATO Secretary General Jens Stoltenberg following the meeting of the North Atlantic Council in Foreign Ministers' session', 4 Dec. 2018.

January 2019: The grace period expires

Russia continued to refute the alleged treaty violation and described the allegations as a pretext for the USA to withdraw from the treaty.⁷ The Russian response combined legal, military and diplomatic arguments. First, the deputy foreign minister, Sergey Ryabkov, argued that it was not legally possible to suspend the treaty, and that Russia would see any attempts by the USA to develop, produce and test banned missiles during any period of suspension as a violation of the treaty.⁸ Second, Russia threatened to enhance its military capabilities and to target any US missiles deployed to Europe following a US withdrawal from the treaty.⁹ Third, Russia engaged in diplomatic efforts to prevent the suspension and potential US withdrawal.¹⁰

On 15 January 2019, Russia and the USA held consultations in Geneva. Ryabkov and the US under secretary of state for arms control and international security, Andrea Thompson, led the respective delegations. However, the two sides were unable to move beyond mutual recriminations, with the USA continuing to insist on the dismantlement of the disputed missile.¹¹ The INF Treaty's dispute mechanism, the Special Verification Commission (SVC), did not meet in 2019.¹²

On 23 January 2019, the Russian Ministry of Defence allowed foreign observers to inspect the Iskander-M mobile launcher and a separate missile container, but it is unclear whether either actually contained the 9M729 missile. In any case, the USA and most of its NATO allies refused to attend the inspection event.¹³ Later, the USA criticized the demonstration as 'completely controlled' by Russia and argued that it did not change the fact

⁷ 'Lavrov points out US showed no proof that Russia breached INF with new missile's tests', TASS, 18 Jan. 2019.

⁸ 'INF Treaty cannot be suspended, it can only be violated, says senior Russian diplomat', TASS, 18 Dec. 2018.

⁹ 'Russia eyes beefing up armed forces amid US plans to quit INF, says defense chief', TASS, 4 Dec. 2018; and 'Russia to target any US missiles deployed in Europe after INF Treaty terminated—Kremlin', TASS, 20 Dec. 2018.

¹⁰ E.g. the foreign ministers of the members of the Collective Security Treaty Organization (CSTO) issued a statement in support of the INF Treaty. Organization for Security and Co-Operation in Europe (OSCE), Ministerial Council, Joint statement by the ministers for foreign affairs of the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, the Kyrgyz Republic, the Russian Federation and the Republic of Tajikistan at the Twenty-Fifth Meeting of the OSCE Ministerial Council, MC.DEL/21/18, 6 Dec. 2018.

¹¹ 'Russia, US fail to save missile treaty, Washington to pull out', Reuters, 16 Jan. 2019.

¹² The SVC met 31 times, with the final meeting taking place on 14 Dec. 2017.

¹³ Russian Ministry of Defence, 'Russian Defence Ministry briefs military attaches with presentation of 9M729 missile of Iskander-M complex', 23 Jan. 2019; 'US mobilizes allies to blame Russia for dismantling INF Treaty—Lavrov', TASS, 16 Feb. 2019; Reevell, P., 'Russia exhibits missile US cites as reason for leaving key arms treaty', ABC News, 24 Jan. 2019; and Pifer, S., 'The blame game begins over the INF Treaty's demise, and Washington is losing', Brookings Institution, 25 Jan. 2019.

that Russia had already tested the 9M729 missile to ranges prohibited by the INF Treaty.¹⁴

February–August 2019: Withdrawal from the treaty

Since Russia did not destroy the 9M729 missile, its launchers and associated equipment in the 60-day grace period, on 1 February 2019 US President Donald J. Trump initiated the process of withdrawal from the treaty and suspended the USA's obligations under it.¹⁵ The suspension came into force the next day and the six-month notice of withdrawal started. In a statement, NATO supported the US decision and attributed full responsibility for the possible demise of the INF Treaty to Russia.¹⁶ The USA and the other members of NATO also reiterated that the treaty would survive if Russia dismantled the concerned missile system in a verifiable way—otherwise the USA would formally withdraw on 2 August.

Russia initially responded by announcing that it would be developing a new land-based intermediate-range hypersonic missile to mirror what it viewed as similar developments by the USA.¹⁷ On 2 February 2019, for example, the Russian Ministry of Defence accused the USA of expanding a missile programme that initially started in 2017 to produce missiles with ranges banned by the INF Treaty.¹⁸

Between 2 February and 2 August there were several efforts to reach a compromise to save the treaty. On 4 March the chief of the Russian General Staff, General Valery Gerasimov, and the chairman of the US Joint Chiefs of Staff, General Joseph Dunford, met in Vienna to discuss the INF Treaty and strategic stability.¹⁹ There was no breakthrough in the talks and on the same day Russian President Vladimir V. Putin officially suspended Russia's compliance with the treaty.²⁰ On 14–15 May the US secretary of state, Michael R. Pompeo, held talks in Sochi, southern Russia, with President Putin, the Russian foreign minister, Sergey Lavrov, and other Russian officials; and on 12 June Ryabkov and Thompson met again in Prague to 'build

¹⁴ US Department of State, 'INF myth busters: Pushing back on Russian propaganda regarding the INF Treaty', Fact sheet, 30 July 2019.

¹⁵ White House, Statement from the President regarding the Intermediate-Range Nuclear Forces (INF) Treaty, 1 Feb. 2019; and US Department of State, 'INF Treaty: US intent to withdraw from the INF Treaty', Diplomatic note, 2 Feb. 2019.

¹⁶ NATO, North Atlantic Council, Statement on Russia's failure to comply with the Intermediate-Range Nuclear Forces (INF) Treaty, Press Release no. (2019) 015, 1 Feb. 2019.

¹⁷ 'Russia starts developing land-based hypersonic missile with intermediate range, says Putin', TASS, 2 Feb. 2019.

¹⁸ Russian Ministry of Defence, 'Russian Defence Ministry: US started production of intermediate-range missiles two years before it accused Russia of violating the INF Treaty', 2 Feb. 2019.

¹⁹ 'Russian, US top military brass hash over missile defense, INF, New START', TASS, 4 Mar. 2019.

²⁰ President of Russia, Executive Order suspending Russia's compliance with the USSR–US INF Treaty, 4 Mar. 2019.

on' the previous bilateral talks.²¹ Neither of these meetings was able to make any progress.

The risk of the treaty's demise became a topic of significant concern around the globe. The United Nations secretary-general, António Guterres, repeatedly called on Russia and the USA to preserve the treaty. On 25 February 2019, for example, during a regular session of the Conference on Disarmament, he highlighted the risks of nuclear competition in Europe that would be provoked by the end of the treaty.²² Several states also urged Russia and the USA to prevent the treaty's collapse. Among them were China, France, Germany and Japan, reflecting the fact that the end of the INF Treaty would probably have the greatest impacts in Europe and North East Asia.²³ In contrast, Ukraine (a state party to the INF Treaty) announced that it now had the right to develop intermediate-range missiles, although the technical and financial challenges associated with doing so made this unlikely.²⁴

The end of the INF Treaty: What next?

On the expiry of the six-month period of notice, the USA formally withdrew from the INF Treaty on 2 August 2019.²⁵ NATO repeated its support for the US decision.²⁶

Russia responded by making a voluntary commitment not to deploy ground-launched intermediate- and shorter-range missiles, but only in the regions where there would be no US deployment of missiles of similar ranges.²⁷ On 19 September President Putin invited NATO member states to match this

²¹ US Department of State, Remarks to traveling press, 14 May 2019; and US Department of State, 'Under Secretary Andrea Thompson continues discussions with Russian Deputy Foreign Minister Ryabkov in Prague', 12 June 2019.

²² United Nations, Secretary-General, Remarks to the Conference on Disarmament, 25 Feb. 2019.

²³ German Federal Foreign Office, 'Außenminister Heiko Maas zu Gesprächen in Moskau und Kiew' [Foreign minister Heiko Maas for talks in Moscow and Kiev], 18 Jan. 2019; Élysée, 'Entretien téléphonique du Président de la République avec le Président des Etats-Unis d'Amérique Donald Trump' [Telephone conversation between the President of the Republic and the President of the United States of America Donald Trump], Press release, 22 Oct. 2018; Chinese Ministry of Foreign Affairs, 'Ambassador Liu Xiaoming contributes an article to the Financial Times entitled The US's wrong-headed decision to pull out of the nuclear arms treaty', 6 May 2019; and Japanese Ministry of Foreign Affairs, 'Press conference by foreign minister Taro Kono', 23 Oct. 2018.

²⁴ Ukrainian Ministry of Foreign Affairs, 'Comment of the MFA of Ukraine in connection with the Intermediate-Range Nuclear Forces Treaty', 7 Mar. 2019; and Sinovets, P and Odessa Center for Nonproliferation (ODCNP), *Responses to the INF Treaty Crisis: The European Dimension* (Odessa I. I. Mechnikov National University: Odessa, 3 May 2019). With the dissolution of the Soviet Union in 1991, the membership of the bilateral Soviet-US INF Treaty expanded to include Russia and 3 other successor states of the Soviet Union—Belarus, Kazakhstan and Ukraine—that had inspectable facilities on their territories.

²⁵ Pompeo, M. R., 'US withdrawal from the INF Treaty on August 2, 2019', Press statement, US Department of State, 2 Aug. 2019.

²⁶ NATO, Statement by the North Atlantic Council on the Intermediate-Range Nuclear Forces Treaty, 2 Aug. 2019.

²⁷ Russian Ministry of Foreign Affairs, 'Foreign Ministry statement on the withdrawal of the United States from the INF Treaty and its termination', 2 Aug. 2019.

non-deployment commitment.²⁸ While NATO rejected this proposal as not being credible due to the alleged deployment of 9M729 missiles, some member states, including France, saw it as a potential basis for discussion.²⁹ The short declaration issued by the NATO Leaders' Meeting in London in December 2019 referred in general terms to the alliance's openness to dialogue with Russia 'when Russia's actions make that possible', but it did not specify any diplomatic effort or confidence-building measure to address the post-INF Treaty challenges.³⁰

French President Emmanuel Macron elaborated on his vision for the European dimension of post-INF Treaty talks during a meeting with President Trump on 3 December. Macron argued that, due to the increased risks faced by European countries after the treaty's demise, the European component should be 'part of the future negotiations of such a new INF Treaty'.³¹ However, this French position was not reflected in the declaration issued at the 2019 NATO Leaders' Meeting.

In the run-up to and following its withdrawal from the INF Treaty, the USA raised concerns about China's growing nuclear and conventional missile inventory, which is mostly composed of systems in the range that was prohibited by the Russian-US treaty.³² NATO supported this view at its 2019 Leaders' Meeting. According to Jens Stoltenberg of NATO, the alliance had started a debate on engaging China on arms control issues, but he did not disclose any specific details about what kind of arms control arrangement would be sought with China.³³ To date, China has expressed no interest in joining the INF Treaty or a replacement treaty.³⁴ The Russian statement on the US withdrawal from the INF Treaty also referenced the 'third countries' issue (without explicitly mentioning China), but highlighted that such countries were 'not ready to assume the relevant treaty obligations'.³⁵ Thus, while Russia appears to be interested in engaging other countries on this

²⁸ Chernenko, E. and Soloviev, V., 'Rakety srednei i men'shei mirmosti' [Missiles of medium and shorter peacefulness], *Kommersant*, 25 Sep. 2019.

²⁹ Peel, M. and Foy, H., 'NATO rejects Russian offer on nuclear missiles freeze', *Financial Times*, 26 Sep. 2019; and NATO, Joint press point with NATO Secretary General Jens Stoltenberg and the President of France Emmanuel Macron', 28 Nov. 2019.

³⁰ NATO, London Declaration issued by the heads of state and Government participating in the meeting of the North Atlantic Council in London 3–4 December 2019, Press Release no. (2019) 115, 4 Dec. 2019.

³¹ White House, Remarks by President Trump and President Macron of France before bilateral meeting, 3 Dec. 2019.

³² Ghoshal, D., 'China and the INF Treaty', *Comparative Strategy*, vol. 35, no. 5 (2016), pp. 363–70; Taylor, A., 'How China plays into Trump's decision to pull-out of INF Treaty with Russia', *Washington Post*, 23 Oct. 2018; and United Nations, General Assembly, First Committee, Statement by the United States, 10 Oct. 2019. On China's nuclear forces see chapter 10, section V, in this volume.

³³ NATO, 'Press conference by NATO Secretary General Jens Stoltenberg following the meeting of the North Atlantic Council at the level of heads of state and/or government', 4 Dec. 2019.

³⁴ Chinese Ministry of Foreign Affairs, Remarks by HE Ambassador Li Song at the CD on the US withdrawal from the INF Treaty, 6 Aug. 2019.

³⁵ Russian Ministry of Foreign Affairs (note 27).

issue—including France and the United Kingdom as well as China—it is seemingly opposed to replacing Russian–US arms control with a process that has no clear future.

With little appetite elsewhere to replace the INF Treaty with a multilateral framework, it seems likely that the treaty's demise will lead to further missile proliferation, as well as, over time, new deployments of anti-missile defences, especially in Europe and Asia.³⁶ While Russia itself did not test any missiles in 2019 that would have been prohibited under the treaty, this new era seemed to be presaged by the USA testing a GLCM on 18 August 2019 and a ground-launched ballistic missile on 12 December 2019.³⁷

New START

The INF Treaty crisis also cast a shadow over the future of the one remaining bilateral Russian–US nuclear arms control agreement: New START. Mutual recriminations in the fields of arms control, security and political affairs have created an atmosphere of mistrust between the two countries, with misperceptions extending to each other's nuclear doctrines and capabilities. Notwithstanding this climate of mistrust, both parties fulfilled their obligations under New START. However, they take different approaches to the future of arms control, which have so far prevented the treaty from being extended or renegotiated. The treaty is due to expire in 2021.

Implementation of the treaty

Under the treaty, the parties are required to exchange data on the numbers of nuclear warheads and their delivery vehicles twice a year. The data for 2019 confirmed that Russia and the USA remained within the final treaty limits (see table 11.1). Meetings of the treaty's Bilateral Consultative Commission took place in April and November 2019, and in July the Russian and US delegations also met in Geneva for strategic stability consultations.

In 2019 the USA was generally satisfied with Russia's compliance with its New START obligations. The main Russian concerns about US compliance were related to the conversion of nuclear delivery systems into conventional ones. Russia complained that it could not verify that 56 launchers for

³⁶ On the links between missile proliferation and missile defences, see e.g. O'Rourke, R., *Navy Aegis Ballistic Missile Defense (BMD) Program: Background and Issues for Congress*, Congressional Research Service (CRS) Report for Congress RL33745 (US Congress, CRS: Washington, DC, 17 Dec. 2019); and Lombardi, C., 'Recent exercises demonstrate importance of layered integrated air and missile defence to counter advanced threats', Euractiv, 3 Oct. 2019.

³⁷ 'US test-fires cruise missile after INF treaty pullout', Deutsche Welle, 19 Aug. 2019; Mehta, A., 'Watch the Pentagon test a previously banned ballistic missile', *Defense News*, 12 Dec. 2019; 'Going ballistic: Missile-testing', *The Economist*, 18 Dec. 2019; and Safronov, I., 'Putin ob'yavil nazvanie novoi rakety srednei dal'nosti' [Putin has announced the name of a new medium-range missile], *Vedomosti*, 24 Dec. 2019.

Table 11.1. Russian and United States aggregate numbers of strategic offensive arms under New START, as of 5 February 2011, 1 March 2019 and 1 September 2019

Category	Russia				United States		
	Treaty limits	Feb. 2011	Mar. 2019	Sep. 2019	Feb. 2011	Sep. 2018	Sep. 2019
Deployed ICBMs, SLBMs and heavy bombers	700	521	524	513	882	656	668
Warheads on deployed ICBMs, SLBMs and heavy bombers ^a	1 550	1 537	1 461	1 426	1 800	1 365	1 376
Deployed and non-deployed launchers of ICBMs, SLBMs and heavy bombers	800	865	760	757	1 124	800	800

ICBM = intercontinental ballistic missile; SLBM = submarine-launched ballistic missile.

Note: The treaty entered into force on 5 Feb. 2011. The treaty limits had to be reached by 5 Feb. 2018.

^a Each heavy bomber, whether equipped with cruise missiles or gravity bombs, is counted as carrying only 1 warhead, even though the aircraft can carry larger weapon payloads.

Source: US Department of State, Bureau of Arms Control, Verification and Compliance, 'New START Treaty aggregate numbers of strategic offensive arms', Fact sheets, 1 June 2011; 1 Mar. 2019; and 1 Sep. 2019.

submarine-launched ballistic missiles and 41 heavy bombers that the USA had converted to non-nuclear missions—and exempted from the treaty's provisions—could not be reconverted to a nuclear role. Russia also complained about its inability to inspect four so-called training silos that are not specifically covered by New START.³⁸

Prospects for extension or replacement of the treaty

Russian diplomats indicated that their concerns about US compliance with New START would need to be addressed before extending the treaty, but also showed a willingness to continue dialogue with the USA on strategic issues.³⁹ During the strategic stability discussions in July, for example,

³⁸ Russian Ministry of Foreign Affairs, 'Comment by the Russian Ministry of Foreign Affairs on the US report on adherence to and compliance with arms control, nonproliferation, and disarmament agreements and commitments (ACNPD) (to be added to the comment by the Russian Ministry of Foreign Affairs of May 5, 2019)', 20 Sep. 2019.

³⁹ Russian Ministry of Foreign Affairs, 'Director of the Foreign Ministry Department on Non-Proliferation and Arms Control Vladimir Yermakov answers media questions', 4 July 2019.

Russia proposed including new types of nuclear-capable weapon under the existing New START, notably its Sarmat silo-based intercontinental ballistic missile (ICBM) and its Avangard boost-glide system.⁴⁰ Russia exhibited the latter system, which it said would become operational in December 2019, for US inspectors during their treaty verification visit on 24–26 November.⁴¹ Furthermore, on 5 December 2019 President Putin suggested that Russia would be ready to extend the treaty immediately, without any preconditions.⁴² Lavrov, the Russian foreign minister, repeated Putin's offer on 10 December while in Washington, DC, and during a TV debate in December reiterated that the Sarmat and Avangard missiles were covered by the treaty and so would also be included once it was extended.⁴³

The USA did not formally respond to these offers. However, US officials have raised several questions that, while not being directly about New START-related systems, could nonetheless influence the US decision on whether to agree to an extension of the treaty. For example, the USA expressed concerns about the destabilizing nature of several new weapons that Russia had recently demonstrated, including the Burevestnik nuclear-powered GLCM, the Poseidon nuclear-powered unmanned underwater vehicle, the Kinzhal nuclear-capable air-launched ballistic missile, and the above-mentioned Sarmat and Avangard.⁴⁴ The US defence secretary, Mark Esper, argued that if New START were to be extended, then it should cover all of these new weapons, not just the two systems offered by Russia.⁴⁵

As with the INF Treaty, the USA has indicated an interest in negotiating new nuclear arms control arrangements that include China. For example, in a statement in a meeting of the First Committee of the UN General Assembly in October 2019, the US delegation said 'we need a new era of arms control, one in which Russia and China are at the negotiating table and willing to reduce nuclear risks rather than heighten them'.⁴⁶ Similarly, in October President Trump also indicated that he intended to work with both China and Russia

⁴⁰ 'Russia proposes viewing new types of arms as part of New START', TASS, 17 July 2019.

⁴¹ 'Russia demonstrates Avangard hypersonic missile system to US', TASS, 26 Nov. 2019; and 'Russia's Avangard hypersonic missile system to go on combat alert in December—top brass', TASS, 26 Nov. 2019.

⁴² President of Russia, 'Meeting with Defence Ministry leadership and heads of defence industry enterprises', 5 Dec. 2019.

⁴³ Wong, E. and Crowley, M., 'Trump and Pompeo spoke to Russian official about US elections. Did only one deliver a warning?', *New York Times*, 10 Dec. 2019; and Russian Ministry of Foreign Affairs, 'Foreign Minister Sergey Lavrov's answers to questions in The Great Game show on Channel One, Moscow, December 22, 2019', 22 Dec. 2019.

⁴⁴ United Nations (note 32). On the autonomous capabilities of the Poseidon system, see Topychkanov, P., 'Autonomy in Russian nuclear forces', ed. V. Boulanin, *The Impact of Artificial Intelligence on Strategic Stability and Nuclear Risk*, vol. I, *Euro-Atlantic Perspectives* (SIPRI: Stockholm, May 2019), pp. 74–75.

⁴⁵ Leon, M. and Griffin, J., 'Pentagon "very carefully" watching China, it's [sic] "no. 1 priority", Defense Secretary Mark Esper tells Fox News', Fox News, 22 Aug. 2019.

⁴⁶ United Nations (note 32).

on nuclear arms control.⁴⁷ However, China has clearly stated that it has no interest in participating in trilateral nuclear arms reduction negotiations with the USA and Russia.⁴⁸

Conclusions

The almost complete breakdown of Russian–US nuclear arms control reflects the deterioration of the broader bilateral relationship and a growing difference in approaches to the issue by the two states. For example, during 2019 there were further disagreements on nuclear-related arms control in the contexts of two multilateral treaties: the 1996 Comprehensive Nuclear-Test-Ban Treaty (CTBT) and the 1992 Treaty on Open Skies.⁴⁹ The USA accused Russia of breaching the nuclear testing moratorium with very low-yield tests, which Russia (and some experts) dispute.⁵⁰ Similarly, Russia and the USA each accused the other of violating the Open Skies Treaty by applying restrictions on certain observation overflights, and the USA is said to be considering withdrawal.⁵¹

Essentially, the two states' different approaches to nuclear arms control can be characterized as follows. Russia is largely committed to business as usual, meaning arms control focused on reductions in the numbers of nuclear weapons, but with linkages to limits on US missile defences. In contrast, the current US administration sees no benefit in bilateral arrangements with Russia and wants to move to trilateral or even multilateral arrangements that also include China. The statement by Pompeo, the US secretary of state, on the US withdrawal from the INF Treaty sums up the principles that underpin current US thinking:

The United States remains committed to effective arms control that advances US, allied, and partner security; is verifiable and enforceable; and includes partners that comply responsibly with their obligations. President Trump has charged this Administration with beginning a new chapter by seeking a new era of arms control that moves beyond the bilateral treaties of the past. Going forward, the United States calls upon Russia and China to join us in this opportunity to deliver real security results to our nations and the entire world.⁵²

⁴⁷ Bugos, S. and Reif, K., 'US seeks "new era of arms control"', *Arms Control Today*, vol. 49, no. 9 (Nov. 2019).

⁴⁸ E.g. Chinese Ministry of Foreign Affairs, 'Briefing by Mr FU Cong, Director General of the Department of Arms Control and Disarmament of Ministry of Foreign Affairs', 6 Aug. 2019.

⁴⁹ For summaries and other details of the CTBT and the Treaty on Open Skies, see annex A, sections I and II respectively, in this chapter.

⁵⁰ See section IV of this chapter.

⁵¹ Gordon, M. R. and Salama, V., 'Trump moves closer to ending another post-cold war treaty', *Wall Street Journal*, 27 Oct. 2019; 'The Open Skies Treaty', *Strategic Comments*, vol. 25, no. 10 (Dec. 2019), pp. vii–ix; and Gould, J. and Mehta, A., 'US to Europe: Fix Open Skies Treaty or we quit', *Defense News*, 21 Nov. 2019.

⁵² Pompeo (note 25).

Despite such statements, there appears to be no active US engagement with China or Russia (or any other nuclear weapon state) to this end, nor any practical proposals for doing so. Given this apparent lack of groundwork and the complexity of undertaking trilateral arms control negotiations, it seems likely that, at best, only some limited form of strategic trilateral dialogue could take place before New START expires.

Furthermore, these mismatches between Russian and US arms control principles and objectives, combined with wider political, economic and strategic differences between the two states, suggest that the era of bilateral nuclear arms control agreements between the two countries might be coming to an end. Future political changes on either side may alter the balance once again, especially since support for arms control remains strong among segments of the policy community on both sides.⁵³ However, in a seemingly new era of strategic competition between the major powers, their commitment to any form of nuclear arms control is beginning to appear illusory.⁵⁴

⁵³ E.g. Edelman, E. and Miller, F. C., 'Russia is beefing up its nuclear arsenal. Here's what the US needs to do', *Politico*, 31 Dec. 2019; and 'US–Russian dialogue on arms control: Does it have a future?', 8th meeting in the US–Russia Dialogue series, co-organized by the James Martin Center for Nonproliferation Studies, Monterey, CA, and the Center for Energy and Security Studies, Moscow, 7 Nov. 2019—especially the conclusions and discussion papers.

⁵⁴ On this strategic competition see chapter 1, section II, in this volume.