

INF Weapons: Status, Modernisations, and Arms Control Prospects

Hans M. Kristensen

Introduction

Over the past 30 years, arms control treaties and unilateral initiatives have resulted in the destruction of more than 50,000 nuclear warheads.¹ The vast majority of those warheads were Russian and U.S. weapons. These accomplishments reflected a political will and conviction that nuclear forces had to be constrained and the role of nuclear weapons reduced.

Over the past decade, however, both the will and conviction have changed. Instead, Russia and the United States – and by extension also NATO – are now embroiled in a deepening political clash that has rekindled Cold War rhetoric and triggered significant changes in military postures and strategies. Although less of an ideological clash and intensity compared with the old Cold War, the changes contain all the building blocks needed to create a new one.

In this climate, the salience of nuclear weapons is increasing. Both sides are reinvigorating the role of nuclear weapons in their national strategies, increasing nuclear first-use options, slowing reductions, and adding new nuclear weapons to their arsenals.

As a result, arms control agreements are under strain – even attack. Most recently, the Trump administration declared it would pull the United States out of the Intermediate-range Nuclear Force (INF) treaty in reaction to what it says is Russian cheating. Moscow has denied the allegations and issued its own counter-accusations.

The INF treaty has served Europe well by removing a particularly dangerous group of nuclear weapons, thereby significantly increasing stability in Europe. But with both Moscow and Washington getting increasingly concerned about the proliferation of INF-range weapons to other countries, it remains to be seen if the treaty can survive. Is it possible to update the treaty to include other states or adjust the treaty to meet new security interests of Russia and the United States? Compounding these questions is the introduction of increasingly advanced conventional sea- and air-based long-range missiles into the U.S. and Russian

¹ For more information, see: Status of World Nuclear Forces, <https://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/>

arsenals; can such forces satisfy their security needs without scuttling the INF treaty and embarking on a new INF buildup?

This paper outlines the global status of INF-range missiles and how a global INF treaty would affect these forces. Since some of those forces are also related to tactical nuclear weapons in general, the paper also discusses the impact of the Presidential Nuclear Initiatives from 1991 and 1992. Broader nuclear modernisation overviews are available in the Nuclear Notebooks published by the Bulletin of the Atomic Scientists and the World Nuclear Forces chapter in the SIPRI Yearbook.²

INF-Range Weapons Modernisations

Eight of the world's nine nuclear-armed states operate a total of 61 types of nuclear and conventional missiles that have ranges of 500-5,000 kilometres. Of those missiles, 41 (68 percent) are ground-based and would be covered by the INF if the treaty was global (see Table 1). The remaining 22 missiles are sea- and air-based and therefore outside the scope of the INF treaty. However, they provide important INF-range strike capabilities that both Russia and the United States have exploited; both are also developing hypersonic weapons with INF ranges.

Russia today operates at least ten missile types that have INF ranges. This includes four ALCMs, four SLCMs (including two LACMs), one ALBM, and one GLCM that the U.S. government says violates the INF. Four of the missile types date back to the Soviet era, while the remaining six have been fielded over the past decade.

Five Russian INF missile types are still being fielded. The most controversial one is obviously the SSC-8 (9M279) GLCM that U.S. government sources say has been deployed in possibly two regiments, each with several battalions of launchers. Another new system includes the air-launched AS-23A/B (Kh-101/102) that is being integrated on modernized Tu-160 and Tu-95 bombers. Another system is the SS-N-30 Kalibr sea-based LACM, which is being incorporated onto a wide range of surface ships and attack submarines. This includes the new Severodvinsk-class (Yasen) attack submarine, and possibly modified hulls of the Akula, Sierra, and Oscar classes, conventional Kilo-class submarines, modified cruisers, destroyers, and corvettes where it will replace older systems.

The United States operates seven INF-range missiles: four ALCMs and three SLCMs (modifications of the same type). Four of those date back to the Cold War while the remaining three have been fielded within the past decade. Two of those are still in production and one is being modified. The United States is also developing a new nuclear ALCM (LRSO) and has announced that it is pursuing development of a new SLCM as well.

Unlike the current AGM-86B ALCM, which is only carried by the B-52, the new LRSO will be added to both B-52 and the new B-21 bombers. The JASSM-ER conventional ALCM is being added to all the bombers and several fighter-jets. The Navy is expanding the number of SLCMs that can be carried on attack submarines by adding a new missile tube section to 30

² The Nuclear Notebooks are available via the Bulletin of the Atomic Scientists at <https://thebulletin.org/nuclear-risk/nuclear-weapons/nuclear-notebook/>. The SIPRI Yearbook is available at <https://www.sipri.org/yearbook> of which the most recent World Nuclear Forces chapter available at <https://www.sipri.org/sites/default/files/SIPRIYB18c06.pdf>.

Virginia-class submarines. It is also planning to build five new “large payload submarines” that will replace the four SSGNs currently in operation.

In addition to these fielded and tested missiles, the Pentagon is developing a number of weapons, some in response to Russia’s alleged violation of the INF treaty, that have ranges in excess of 500 kilometres. This includes, according to the U.S. State Department, “options for conventional, ground-launched, intermediate-range missile systems.”³ And the Navy is developing the Next Generation Land Attack Weapon (NGLAW), described as “a surface/submarine fired survivable, long range, multi-mission, multi-platform conventional strike capability fielding in the FY 2028 - FY 2030 timeframe.”⁴ The missile would be deployed on SSGNs and possibly SSNs, and later the new “large payload submarines.” A test-launch of what is known as the Intermediate Range Conventional Prompt Strike missile was flown from Hawaii in November 2017 to collect data on hypersonic boost-glide technologies and test-range performance for long-range atmospheric flight. Finally, the Army is reportedly pursuing a 1,600-kilometer range rocket as part of its Long-Range Precision Fires program.⁵

China has the most INF-range weapon types of all. More than 90% of its land-based missiles have ranges that fall between 500 and 5,000 kilometres. The force probably includes 1,400-1,800 missiles, of which 1,000-1,200 are SRBMs and 200-300 are cruise missiles.⁶ This reflects that the Chinese military posture is focused on repelling regional rather than strategic threats. The INF-range weapons include at least 14 different types: 11 ballistic missiles (several are variations of the same type), one ALCM, one GLCM, and one ALBM. Of those, at least two date back to the 1990s, but most are new. If China were a party to the INF treaty, 12 of the 14 Chinese missile types (86 percent) would be banned.

Pakistan and India each has six INF-range missile types. For Pakistan that includes five ballistic missiles and one cruise missile, of which two ballistic missiles are new. All the Pakistani INF missiles would be banned if it were party to the INF. India has five ballistic missiles, one of which is sea-based, and a cruise missile in development. Three of the Indian INF-range missiles are new, which includes an IRBM, a SLBM, and a GLCM. Five of the six Indian missiles would be banned if India were a party to the INF.

North Korea has seven INF-range missiles, which includes six land-based ballistic missiles of various types and one sea-based missile. Four of the North Korean missiles are new. North Korea probably only has operationalized nuclear warheads for SRBMs and MRBMs. Deliverable warheads for longer-range IRBMs may be premature. All but the sea-based missile would be banned by INF.

³ Heather Nauert, U.S. State Department, “Trump Administration INF Treaty Integrated Strategy,” Press Statement, December 8, 2017, <https://www.state.gov/r/pa/prs/ps/2017/12/276363.htm>

⁴ U.S. Department of Defense, Fiscal Year (FY) 2019 Budget Estimates, *Navy Justification Book Volume 2 of 5, Research, Development, Test & Evaluation, Navy, Budget Activity 4*, February 2018, page 1243, http://www.secnav.navy.mil/fmc/fmb/Documents/19pres/RDTEN_BA4_Book.pdf

⁵ Sydney J. Freedberg, Army Seeks 1,000-Mile Missiles Vs. Russia, China,” *Breaking Defense*, September 10, 2018, <https://breakingdefense.com/2018/09/army-seeks-1000-mile-missiles-vs-russia-china/>

⁶ U.S. Department of Defense, Office of the Secretary of Defense, *Military and Security Developments Involving the People’s Republic of China*, May 2018 [published in August 2018], p. 125, <https://media.defense.gov/2018/Aug/16/2001955282/-1/-1/1/2018-CHINA-MILITARY-POWER-REPORT.PDF>

Iran has developed a significant force of short- and medium-range ballistic missiles as well as one GLCM that fall within the INF-range. All would be banned by a global treaty. Saudi Arabia has operated the China-supplied DF-3 MRBM for several decades, a missile that would be prohibited by a global INF.

Table 1: Worldwide INF-Range Missiles¹				
Country	Missile Designations/Type	Range	Nuclear-Capable	Modernisation
Russia	AS-15 ALCM (Kh-55)	2,800+	Yes	AS-23
	Kh-555 ALCM	2,000+		AS-23A
	AS-23A ALCM (Kh-101)	2,500?		
	AS-23B ALCM (Kh-102)	2,800?	Yes	
	SS-N-12 SLCM	550	Yes	SS-N-26
	SS-N-19 SLCM	550	Yes	SS-N-26
	SS-N-21 LACM	2,400	Yes	SS-N-30
	SS-N-30 LACM (Kalibr)	2,500	Possibly	
	SSC-8 GLCM (9M279)*	2,500?	Yes	
	Kinzhal ALBM	2,000?	Yes	
	Subtotal: 10			
United States ²	AGM-86B ALCM	2,500	Yes	LRSO
	AGM-86C ALCM (CALCM)	1,200		JASSM-ER
	AGM-158B ALCM (JASSM-ER)	1,200		
	AGM-158D ALCM (JASSM-XR) ³	1,500?		
	BGM-109C LACM (Tomahawk)	1,600		BGM-109E
	BGM-109D LACM (Tomahawk/clusters)	1,250		
	BGM-109E LACM (Tomahawk)	1,600		
	Subtotal: 7			
China	CJ-10 GLCM (DH-10)*	1,500		
	CJ-20 ALCM (DH-20)	1,500?		
	CH-AS-X-13 ALBM	3,000+	Possibly	
	CSS-5 Mod 2 MRBM (DF-21A)*	2,000+	Yes	DF-21E
	CSS-5 Mod 4 MRBM (DF-21C)*	1,500+		
	CSS-5 Mod 5 MRBM (DF-21D)*	1,500+		
	CSS-5 Mod 6 MRBM (DF-21E)*	2,000+		
	CSS-6 Mod 1 SRBM (DF-15A)*	600	Possibly	
	CSS-6 Mod 2 SRBM (DF-15B)*	850+		
	CSS-6 Mod 3 SRBM (DF-15C)*	725+		
	CSS-7 Mod 2 SRBM (DF-11B)*	600		
	CSS-11 Mod 1 SRBM (DF-16A)*	700		
	CSS-11 Mod 2 SRBM (DF-16B)*	700+		
	CSS-? IRBM (DF-26)*	3,000+	Yes	
	Subtotal: 14			
France	ASMPA	~500	Yes	ASN-4G
	Subtotal: 1			
Pakistan	Babur-1B/2 GLCM (Hatf-7)*	~700?	Yes	
	Shaheen I SRBM (Hatf-4)*	750	Yes	
	Ghauri MRBM (Hatf-5)*	1,250	Yes	

	Shaheen II MRBM (Hatf-6)*	2,000	Yes	
	Shaheen III MRBM (Hatf-?)*	2,750	Yes	
	Ababeel MRBM (Hatf-?)*	2,200	Yes	
	Subtotal: 6			
India	Agni I SRBM*	700	Yes	
	Agni II MRBM*	2,000+	Yes	
	Agni III IRBM*	3,200+	Yes	
	Agni IV IRBM*	3,500+	Yes	
	K-15 SLBM	700	Yes	
	Nirbhay GLCM (ALCM)*	700+	Possibly	
	Subtotal: 6			
North Korea ⁴	Hwasong-6 SRBM (SCUD C)*	500		
	Hwasong-9 (KN-4) MRBM (SCUD ER)*	1,000	Yes	
	Hwasong-7 MRBM (Nodong)*	1,200+	Yes	
	Bukkeukseong-1 (KN-11) SLBM	1,000		
	Bukkeukseong-2 (KN-15) MRBM*	1,000		
	Hwasong-10 (BM-25) IRBM (Musudan)*	3,000+		
	Hwasong-12 (KN-17) IRBM *	3,000+		
	Subtotal: 7			
Iran	Shahab 2 SRBM*	500		
	Zolfaghar SRBM*	700		
	Qiam-1 SRBM*	800		
	Shahab 3 MRBM*	<2,000		
	Emad-1 MRBM*	<2,000		
	Sejjil MRBM*	2,000		
	Meshkat/Soumar GLCM*	?		
	Subtotal 7			
Israel	Jericho-III IRBM*	4,000?	Yes	
	Popeye Turbo SLCM	<1,000	Possibly	
	Subtotal: 2			
Saudi Arabia	DF-3 MRBM*	3,000		
	Subtotal 1			
	Total: 61 missile types			

Keys: ALBM = air-launched ballistic missile; ALCM = air-launched cruise missile; GLCM = ground-launched cruise missile; IRBM = intermediate-range ballistic missile; MRBM = medium-range ballistic missile; SLBM = submarine-launched ballistic missile; SLCM = sea-launched cruise missile; SRBM = short-range ballistic missile.

* Indicates missiles that would be covered by a global INF treaty.

¹ Note that the INF Treaty only limits U.S. and Russian ground-launched missiles with a range of 500-5,000 kilometres. This table lists all weapon systems that fall within that range.

² In addition to the missiles listed, the United States is also developing the LRSO (long-range standoff missile) to replace the AGM-86B, and is pursuing development of a new SLCM.

³ The JASSM-XR is an "extreme-range" modification being developed of the JASSM-ER.

⁴ Not all of the North Korean missiles listed are operational but have been flight tested. Although North Korea has test-launched many different missiles, it is unclear how many of them are intended for mass production or have nuclear capability.

PNI Weapons Modernisations

The Presidential Nuclear Initiatives of 1991 and 1992 resulted in enormous reductions of deployed nuclear weapons and retirement of many types. The initiatives affected INF weapons in ways that also have implications today. Although the initiatives are sometimes portrayed as only addressing non-strategic nuclear weapons, they in fact affected nuclear forces of all categories. Several strategic nuclear weapon systems were retired, canceled, production halted, or deployment significantly curtailed.⁷ This paper will focus on the non-strategic portion on the PNIs.

Both the United States and Russia have completed the vast majority of the reductions they promised in the PNIs. Overall, the initiatives were a resounding success; indeed, in some areas the reductions have been greater than promised. However, in some areas the reductions have not been completed and production of new missiles and warheads have continued. And planning is underway for new weapons that would violate the PNIs (see Table 2).

Table 2: U.S. and Russian Presidential Nuclear Initiatives, 1991-1992 ¹				
Category	1991 PNIs		1992 PNIs	
	US (9/27/91)	Russia (10/5/91)	US (1/28/92)	Russia (1/29/92)
Ground-launched non-strategic nuclear weapons (NSNW)	<ul style="list-style-type: none"> Eliminate entire inventory of ground-launched short-range nuclear weapons and destroy all warheads for artillery and short-range ballistic missiles 	<ul style="list-style-type: none"> Eliminate nuclear artillery munitions, nuclear mines, and tactical rocket warheads² Consolidate nuclear air defense missile nuclear warheads in central sites and eliminate “a portion” 		<ul style="list-style-type: none"> Production ended of land-based tactical missiles³, nuclear artillery, and nuclear mines Eliminate one-half of air defense missile nuclear warheads⁴
Sea-launched NSNW	<ul style="list-style-type: none"> Remove nuclear weapons from surface ships and attack submarines. Withdraw nuclear warheads associated with land-based naval aircraft Destroy “many.” Place remaining in central storage 	<ul style="list-style-type: none"> Remove tactical nuclear weapons from surface ships and multiple-purpose submarines.⁵ Put in central storage, along with nuclear weapons on land-based naval aircraft. Eliminate “a portion” 	<ul style="list-style-type: none"> End production of long-range sea-launched cruise missiles (SLCMs). No new types of such missiles will be created⁶ Eliminate one-third of sea-based tactical nuclear weapons 	
Air-launched NSNW	<ul style="list-style-type: none"> Cancel program to modernize tactical version of short-range attack missile (SRAM-T or TASM) 	<ul style="list-style-type: none"> “On the basis of reciprocity, it would be possible to withdraw from all combat units on battlefield aviation all nuclear charges and place them in centralized storage sites” 		<ul style="list-style-type: none"> Halve stocks of air-launched tactical nuclear munitions. Remaining, on a reciprocal basis with the U.S., could be placed in central storage

⁷ For an indispensable study of the PNIs, see: Susan Koch, *The Presidential Nuclear Initiatives of 1991-1992*, National Defense University, 2012, http://ndupress.ndu.edu/Portals/68/Documents/casestudies/CSWMD_CaseStudy-5.pdf

¹ This table only lists initiatives involving non-strategic nuclear weapons. **Red text indicates where initiatives have not been met or are being violated.** For the remaining initiatives affecting strategic forces, see: Susan Coch, *The Presidential Nuclear Initiatives of 1991-1992*, National Defense University, 2012, pp. 40-45, http://ndupress.ndu.edu/Portals/68/Documents/casestudies/CSWMD_CaseStudy-5.pdf

² Russia has not eliminated tactical warheads for the tactical ground-launched rocket SS-21 (9K79, Tochka) SRBM.

³ Russia has produced the SS-26 (9K720, Iskander-M) SRBM and associated warheads.

⁴ A senior military official stated in 2007 that Russia had dismantled 60 percent of the warheads for air-defense forces.

⁵ There are unconfirmed rumors that some Russian nuclear attack submarines may have carried nuclear LACMs to compensate for the low SSBN patrol rate.

³ Russia has produced the SS-26 (9K720, Iskander-M) SRBM and associated warheads.

⁴ A senior military official stated in 2007 that Russia had dismantled 60 percent of the warheads for air-defense forces.

⁵ There are unconfirmed rumors that some Russian nuclear attack submarines may have carried nuclear LACMs to compensate for the low SSBN patrol rate.

⁶ The 2018 Nuclear Posture Review decided to pursue development of a new nuclear SLCM.

On the Russian side, the promise to eliminate warheads for tactical missiles for the army has not been fulfilled. For sure, warheads for numerous ground-based systems were eliminated, but a few remain. The U.S. government first raised this problem in public during a visit by Assistant Secretary of State for Arms Control Stephen Rademaker to Moscow in October 2004. “We withdrew all of the [tactical] warheads years ago and completed dismantlement of the warheads last year. At the same time President Yeltsin committed to similar reductions in Russian tactical nuclear weapons, but considerable concern exists that the Russian commitments have not been entirely fulfilled.”⁸

Rademaker’s accusation followed a statement the previous month by the Colonel-General Vladimir Verkhovtsev, the head of the Russian Defense Ministry’s 12th Main Directorate, that 100 percent of tactical nuclear land forces were done away with.⁹ After Rademaker made his accusation, General Verkhovtsev told Pravda that Russia had “committed itself to removing tactical nuclear weapons from ground forces completely. Those weapons were also cut by 50 percent in the Air Force, by 60 percent in missile defense troops, and by 30 percent on nuclear submarines of the Russian Navy.”¹⁰ Whether Rademaker’s accusation had an effect is unknown, but General Verkhovtsev’s use of the word “removing” weapons from ground forces as opposed to “cuts” for the other branches potentially hinted that elimination of nuclear warheads for ground forces might indeed not have been entirely completed.

The warheads that were retained for army tactical missiles appear to be for the SS-21 Scarab (9K79, Tochka) SRBM. This system is now being replaced by the new SS-26 Stone (9K720, Iskander-M) SRBM, which also is nuclear-capable. Moreover, the SSC-8 (9M729) GLCM the U.S. has accused Russia of deploying in violation of the INF treaty is also nuclear-capable.

⁸ U.S. Department of State, *Press Roundtable at Interfax: Stephen G. Rademaker, Assistant Secretary of State for Arms Control*, October 6, 2004, 2001-2009.state.gov/t/isn/rls/rm/37275.htm

⁹ “RF Ready to Negotiate Reduction of Nuke Tactical Arms,” *ITAR-TASS*, September 3, 2007. Translation by Open Source Center via World News Connection.

¹⁰ “Russian determined to keep tactical nuclear weapons for potential aggressors,” *Pravda*, October 31, 2007, http://english.pravda.ru/russia/kremlin/99911-nuclear_arms-0

Moreover, it is also possible – but uncertain – that the new SS-N-26 Strobile (3M-55 Yakhont/Oniks) cruise missile has nuclear capability.¹¹ Although primarily a ship- and submarine-based weapon, it is also launched from coastal defense launch vehicles.¹²

Development and deployment of these new ground-launched tactical nuclear-capable missiles indicate that Russia plans to continue to violate that portion of the PNIs. The 2018 Nuclear Posture Review repeats the accusation that Russia is in violation of the PNIs.¹³

On the American side, all promises made in the PNIs appear to have been fulfilled. However, the Trump administration is now taking steps to go back on one of those promises: not to create new types of long-range sea-launched cruise missiles (SLCMs). The 2018 Nuclear Posture Review declared that the United States will “pursue a modern nuclear-armed sea-launched cruise missile (SLCM)...We will immediately begin efforts to restore this capability by initiating a capability study leading to an Analysis of Alternatives (AoA) for the rapid development of a modern SLCM.”¹⁴ The NPR claims the SLCM will be “compliant with all treaties and agreements” but does not address the violation of the PNIs.

Arms Control Implications and Prospects¹⁵

The alleged Russian violation of the INF treaty and the Trump administration’s response to pull the United States out of the treaty, and less than full implementation of the PNIs and plans to violate them further, have thrown the international nuclear arms control regime into its worst crisis in 30 years. If the current trend continues, it is possible that extension of the New START treaty could be in jeopardy as well, in which case the world would be facing a future where there are no treaties limiting nuclear arsenals.

There are many options readily available for fixing this problem, but they depend on political will, which is in short supply with the leaders that currently occupy the Kremlin and the White House. Because of the lack of leadership, defense hawks and military hardliners have free range to create obstacles and argue for new INF weapons to counter the other side or other countries outside the treaty.

¹¹ U.S. Air Force National Air and Space Intelligence Center, *Ballistic and Cruise Missile Threat*, NASIC-1031-0985-17, June 2017 [corrected version July 21, 2017], p. 37, <https://fas.org/blogs/security/2017/08/nasic-2017-corrected/>

¹² U.S. Navy, Office of Naval Intelligence, *The Russian Navy: A Historic Transition*, December 2015, p. 34, <http://www.oni.navy.mil/Portals/12/Intel%20agencies/russia/Russia%202015screen.pdf?ver=2015-12-14-082028-313>

¹³ U.S. Department of Defense, Office of the Secretary of Defense, *Nuclear Posture Review*, February 2018, pp. 6, 73, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>

¹⁴ U.S. Department of Defense, Office of the Secretary of Defense, *Nuclear Posture Review*, February 2018, pp. XII-XIII, 55, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>

¹⁵ For insightful reviews of the INF issue and possible solutions, see: Katarzyna Kubiak, *The INF Treaty: The Way Forward*, European Leadership Network, May 17, 2018, <https://www.europeanleadershipnetwork.org/policy-brief/the-inf-treaty-the-way-forward/>; Steve Pifer, “Order from chaos: The Trump administration is preparing a major mistake on the INF Treaty,” *Brookings Institution Blog*, October 19, 2018, <https://www.brookings.edu/blog/order-from-chaos/2018/10/19/the-trump-administration-is-preparing-a-major-mistake-on-the-inf-treaty/>; Arms Control Association, “Trump’s Counterproductive Decision to ‘Terminate’ the INF Treaty,” *Issue Brief*, Volume 10, Issue 9, October 21, 2018, <https://www.armscontrol.org/issue-briefs/2018-10/trumps-counterproductive-decision-terminate-inf-treaty>

Yet some senior military officials have challenged that new INF weapons are needed. Despite the Russian deployment of a GLCM that the United States says violates the INF, Joint Chiefs of Staff vice-chairman General Paul Selva stated in 2017: "Given the location of the specific missiles and deployment" of the new Russian GLCM, "they don't gain any advantage in Europe."¹⁶

Instead, the Trump administration's announcement in October 2018 that it will pull the United States out of the INF treaty instead appears to be more focused on China's inventory of INF missiles.¹⁷ This curiously makes the Trump administration's position somewhat similar to the Russian complaint: the INF treaty prevents us from taking military countermeasures to China's and others' INF buildup.

China has had nuclear INF forces for many decades but its addition of significant numbers of conventional ballistic and cruise missiles has caused some to argue that the United States is falling behind. Similar claims have been made in Russia. Admiral Harry Harris, the previous commander of U.S. Pacific Command, told Congress in 2017 that "over 90 percent" of China's land-based missile force falls within the INF range so "the aspects of the INF Treaty that limit our ability to counter Chinese and other countries' cruise missiles, land-based missiles, I think is problematic."¹⁸ This statement was fodder for congressional hardliners who were trying to pull the United States out of INF and, by extension, other treaties as well.

But Harris' superior, General Paul Selva, responded: "with respect to whether or not we use the INF treaty as a reason to say targets inside China might not be held at risk I think is a bridge too far. I believe we can assert that the deployment of missile systems on aircraft and ships allow us to hold those targets at risk."¹⁹ In fact, he explained in a written response to Congress: "There are no military requirements we cannot currently satisfy due to our compliance with the INF Treaty. While there is a military requirement to prosecute targets at ranges covered by the INF Treaty, those fires do not have to be ground-based."²⁰

The first and easiest option is to retain the INF treaty despite its problems. This would allow continued use of the Special Verification Commission (SVC) to resolve disagreements and disputes. It would also allow rallying allies and the international community around efforts to convince Russia that it is in its interest to return to compliance. At first the Kremlin didn't even want to acknowledge that it knew which missile the United States claimed was a violation. Then, when the Trump administration declassified the name, the Russian government acknowledged the existence of such a missile, but denied it had INF range. The next logical step would be to declassify more specific information about the range to force more

¹⁶ Wilson Brissett, "US Can Respond to Russian Violations Without Breaking INF Treaty," *Air Force Magazine*, July 19, 2017, <http://www.airforcemag.com/Features/Pages/2017/July%202017/US-Can-Respond-to-Russian-Violations-Without-Breaking-INF-Treaty.aspx>

¹⁷ For the Chinese angle, see: Lara Seligman, "Trump's Plan to Leave a Major Arms Treaty With Russia Might Actually Be About China," *Foreign Policy*, October 22, 2018, <https://foreignpolicy.com/2018/10/22/trumps-plan-to-leave-a-major-arms-treaty-with-russia-might-actually-be-about-china/>

¹⁸ Admiral Harry Harris, Commander, U.S. Pacific Command, testimony before the Senate Armed Services Committee, April 27, 2017, transcript pp. 46, 48, https://www.armed-services.senate.gov/imo/media/doc/17-36_04-27-17.pdf

¹⁹ General Paul Selva, Vice-Chairman of the Joint Chiefs of Staff, statement before the Senate Armed Services Committee, July 18, 2017, https://www.armed-services.senate.gov/hearings/17-07-18-nomination_--selva

²⁰ General Paul Selva, Vice-Chairman of the Joint Chiefs of Staff, written answer to Representative Mike Rogers, in hearing on military assessment of nuclear deterrence requirements, March 8, 2017, <https://www.gpo.gov/fdsys/pkg/CHRG-115hrg24683/html/CHRG-115hrg24683.htm>

concessions from Moscow. Part of that effort should be to arrange a display of the 9M279 missile and its launcher for inspection. There would be no reason to deny this if there's no treaty violation.

Building up international pressure would be an important part of this phase. NATO has somewhat reluctantly increased its involvement but could do more. Part of the bureaucratic excuse has been that the INF is a bilateral agreement and therefore not something NATO should get involved in. But three other countries – Belarus, Kazakhstan, and Ukraine – are also parties to the treaty, and since some of the Russian GLCMs would likely be targeted at Europe, and a possibly U.S. military response deployed there, it is important that NATO gets more convincingly involved. The joint communique from the North Atlantic Council meeting in July 2018 somewhat half-heartedly declared: “Allies believe that, in the absence of any credible answer from Russia on this new missile, the most plausible assessment would be that Russia is in violation of the Treaty.” Hardly an ironclad statement of support. Even so, NATO declared unilaterally that the INF treaty “has been crucial to Euro-Atlantic security and we remain fully committed to the preservation of this landmark arms control treaty.”²¹

Trump's announcement to pull out not only contradicts the U.S. signature on the Brussel declaration and several recent key U.S. policy documents and statements. It also undercuts the Allies' ability to put pressure on Moscow. Pulling out would relieve Russia of future responsibility and even allow the Kremlin to make the case that it is the United States that was responsible for the collapse of the treaty. It would also remove any constraints on Russia to increase deployment of the GLCM and other INF weapons if it so chooses.

Several of the weapons systems that are currently undergoing development or modernisation are simply superfluous—both in cost and substance. The need for Russia's alleged GLCM is hard to see, given that new Russian sea- and air-based missiles can perform the same missions. Likewise, proposed U.S. nuclear-armed SLCM is not necessary to hold Russian or Chinese targets at risk. The US Navy used to have a nuclear SLCM (the TLAM/N), but retired it in 2011 because it was redundant and no longer needed; that reality has not changed. Indeed, with the increasingly advanced conventional sea- and air-based long-range missiles entering the U.S. and Russian arsenals, however, one could question why they need new ground-based INF-weapons at all.

Many senior military officials believe it would be a mistake to abandon INF because of the constraints on nuclear forces and the risk of removing legal and political limits on a class of nuclear weapons that in the case of Russia and the United States, despite the current Russian violation, has been successfully contained for 30 years. Even Admiral Harris, who argued that China's INF forces present a problem, told Congress: “I would never advocate unilateral withdrawing from the treaty because of the nuclear limitation part of it. But I do think we should look at renegotiating the treaty.”²²

Expanding the treaty to reflect the security needs the United States and Russia say they have, would be difficult and cost significant concessions. INF is a powerful treaty that would have

²¹ North Atlantic Treaty Organization, *Brussel Summit Declaration*, Press Release (2018) 074, July 11, 2018, https://www.nato.int/cps/en/natohq/official_texts_156624.htm

²² Admiral Harry Harris, Commander, U.S. Pacific Command, testimony before the Senate Armed Services Committee, April 27, 2017, transcript p. 49, https://www.armed-services.senate.gov/imo/media/doc/17-36_04-27-17.pdf

a significant impact on the size and composition of the arsenals of the smaller nuclear-armed states. While all of them would be able to retain sea- and air-launched missiles, like Russia and the United States, several of the countries would have to give up all their land-based weapons, which for many of them constitute most or nearly all of their arsenal. It is inconceivable that they would agree to do so without considerable concessions on the part of the larger nuclear-armed states. Having said that, the INF crisis is an important reminder for the United States and Russia and the international arms control community to engage a wider range of countries to develop concepts for managing the proliferation of INF-range weapons around the world.

The Author

Hans M. Kristensen is Director of the Nuclear Information Project at the Federation of American Scientists in Washington, D.C., where he is responsible for researching and documenting the status and operations of nuclear forces of the nine nuclear-armed states. He is a frequent advisor to the news media on the status of nuclear forces and policy.

Kristensen is co-author of the bi-monthly FAS Nuclear Notebook column in the *Bulletin of the Atomic Scientists* and the World Nuclear Forces overview in the *SIPRI Yearbook*, both of which are some of the most widely used reference material on the status of the world's nuclear arsenals. Prior to his current position, Kristensen was a consultant to the Nuclear Program at the Natural Resources Defense Council in Washington, D.C. (2003-2005), and Program Officer at the Nautilus Institute in Berkeley, CA (1998-2002). He was born in Denmark.

Toda Peace Institute

The **Toda Peace Institute** is an independent, nonpartisan institute committed to advancing a more just and peaceful world through policy-oriented peace research and practice. The Institute commissions evidence-based research, convenes multi-track and multi-disciplinary problem-solving workshops and seminars, and promotes dialogue across ethnic, cultural, religious and political divides. It catalyzes practical, policy-oriented conversations between theoretical experts, practitioners, policy-makers and civil society leaders in order to discern innovative and creative solutions to the major problems confronting the world in the twenty-first century (see www.toda.org for more information).

Contact Us

Toda Peace Institute
Samon Eleven Bldg. 5th Floor
3-1 Samon-cho, Shinjuku-ku, Tokyo 160-0017, Japan
Email: contact@toda.org