

BACKGROUND

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The Way Forward for the United States in a Post-INF World

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Abstract

After five years of failed attempts to get Russia to return to compliance with its Intermediate-Range Nuclear Forces (INF) Treaty obligations and verifiably destroy its 9M729 missile system, the United States officially announced its intentions to withdraw from the treaty. While the U.S. should continue to encourage the Russian government to return to compliance with the INF Treaty, in parallel, it should develop and field new low-yield nuclear weapons as well as improved conventional ground-based cruise missile systems and cruise missile defenses. These actions would better deter Russian use of low-yield nuclear weapons and better defend America's NATO allies from Russian cruise missile threats.

On December 4, 2018, Secretary of State Michael Pompeo announced that the United States had found Russia to be in material breach of the Intermediate-Range Nuclear Forces (INF) Treaty and therefore “will suspend our obligations as a remedy, effective in 60 days unless Russia returns to full and verifiable compliance.”¹ In a separate statement, the NATO foreign ministers declared that they “strongly support the finding of the United States that Russia is in material breach of its obligations under the INF Treaty,” adding that “Russia’s violation of the INF Treaty erodes the foundations of effective arms control and undermines Allied security.”²

This decision came after the United States and its NATO allies repeatedly raised concerns over the past five years with the Russian government regarding the development and fielding of the Russian-designated 9M729 ground-launched cruise missile (GLCM) and urged Moscow to return to compliance with the treaty. The 9M729

KEY POINTS

- After five years of failed attempts to get Russia to return to compliance with its Intermediate-Range Nuclear Forces Treaty obligations, the United States announced its intentions to withdraw from the treaty.
- America’s NATO allies have affirmed that the U.S. remains in full compliance with its obligations under the INF Treaty.
- Russia’s willful disregard of its INF Treaty obligations and its attempts to hide these violations must be viewed in the broader context of Russia’s increasingly belligerent actions toward its European neighbors and disregard for international law.
- The Department of Defense and Congress have recognized the significant threats posed to the U.S. and its European allies by Russia’s willful violation of its INF Treaty obligations and deployment of the 9M729 ground-launched cruise missile system.
- Their efforts to develop and field new capabilities to defend against and deter this threat should continue in fiscal year 2020 and beyond.

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missile's range violates the INF Treaty's limitations, and Russia "has fielded multiple battalions of 9M729 missiles, which pose a direct conventional and nuclear threat against most of Europe and parts of Asia."³

As affirmed by its NATO allies in a July 2018 NATO summit declaration, the U.S. remains in full compliance with its obligations under the INF Treaty.⁴ Signed in 1987 by the United States and the Soviet Union, the INF Treaty banned all ground-launched ballistic and cruise missiles with both nuclear and conventional warheads, as well as their launchers, with a range between 500 and 5,500 kilometers (roughly between 300 and 3,500 miles).⁵ The Treaty does not apply to sea-based or air-delivered missiles.

The U.S. had presented information detailing the Russian violations in more than 30 formal engagements with the Russian government since April 2014.⁶ In response, Russia repeatedly lied, created cover stories, and even denied the missile's existence until the U.S. publicly announced the missile system's Russian designator, 9M729, in November 2017.⁷ Even then, Russia falsely claimed that the missile's range was less than 500 kilometers. The INF Treaty includes clear measures for eliminating banned missile systems, and both the United States and the Soviet Union employed them when implementing the treaty. Russia can still return to compliance by verifiably destroying the 9M729 system in accordance with these measures but so far has chosen not to follow this path.

Additionally, Russia's willful disregard of its INF Treaty obligations and its attempts to hide these violations must be viewed in the broader context of

Russia's increasingly belligerent actions toward its European neighbors and disregard for international law. According to the U.S. Department of State, "in addition to violating the INF Treaty, Russia is also not complying with its obligations under several other arms-control treaties, including the Open Skies Treaty, the Chemical Weapons Convention, and the Conventional Armed Forces in Europe Treaty."⁸

Russia's violations of these treaties provides Moscow with a distinct military advantage over the U.S. and its NATO allies. Since the INF Treaty limits the development and deployment not only of nuclear intermediate-range ground-launched missiles, but also of conventional intermediate-range ground-launched missiles, Russia now has a significant conventional military capability advantage over the U.S. and its European allies.

The U.S. has stated that if Russia has not returned to compliance by February 2, 2019, America will suspend its INF Treaty obligations and provide the required Article XV six-month notification to the Russian Federation of its intentions to withdraw from the treaty.⁹

The Way Forward

Once it is freed from its INF Treaty obligations, what immediate actions should the United States take to reverse its military capability disadvantages and better deter regional aggressors in Europe, the Indo-Pacific, and the Middle East?

The U.S. should work to regain the military advantage to deter and defend itself and its allies more

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1. Michael R. Pompeo, Secretary of State, "Press Availability at NATO Headquarters," Brussels, Belgium, December 4, 2018, <https://www.state.gov/secretary/remarks/2018/12/287873.htm> (accessed January 23, 2019).
 2. Press release, "Statement on the Intermediate-Range Nuclear Forces (INF) Treaty Issued by the NATO Foreign Ministers, Brussels, 4 December 2018," North Atlantic Treaty Organization, https://www.nato.int/cps/en/natohq/official_texts_161122.htm (accessed January 23, 2019).
 3. Daniel Coats, Director of National Intelligence, press briefing on "Russia's INF Treaty Violation," Office of the Director of National Intelligence, November 30, 2018, <https://www.dni.gov/index.php/newsroom/speeches-interviews/item/1923-director-of-national-intelligence-daniel-coats-on-russia-s-inf-treaty-violation> (accessed January 23, 2019).
 4. Fact Sheet, "Russia's Violation of the Intermediate-Range Nuclear Forces (INF) Treaty," U.S. Department of State, December 4, 2018, <https://www.state.gov/r/pa/prs/ps/2018/12/287868.htm> (accessed January 23, 2019).
 5. 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, signed December 8, 1987, entered into force June 1, 1988, <https://www.state.gov/t/avc/trty/102360.htm#text> (accessed January 23, 2019).
 6. Fact Sheet, "Russia's Violation of the Intermediate-Range Nuclear Forces (INF) Treaty."
 7. Fact Sheet, "INF Diplomacy Highlights Timeline," U.S. Department of State, November 16, 2018, <https://www.state.gov/t/avc/inf/287411.htm> (accessed January 23, 2019).
 8. Fact Sheet, "Russia's Violation of the Intermediate-Range Nuclear Forces (INF) Treaty."
 9. 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, Article XV.
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effectively against possible aggression by Russia and other potential regional aggressors. Improved U.S. low-yield nuclear and conventional weapons systems, especially in the European Area of Operations, would provide greater incentive for the Russians to return to treaty compliance and could encourage other nations to join a ban against intermediate-range nuclear weapons.

Low-Yield Sea-Launched Ballistic Missiles.

Russia currently has a significant arsenal of low-yield nuclear weapons, and its military doctrine blurs the difference between nuclear and conventional weapons. Russian doctrine states a willingness to use low-yield nuclear weapons preemptively to “de-escalate” an armed conflict to achieve its strategic goals. The U.S. Department of Defense (DOD) 2018 *Nuclear Posture Review* reinforces this assessment:

Russia may also rely on threats of limited nuclear first use, or actual first use, to coerce us, our allies, and partners into terminating a conflict on terms favorable to Russia. Moscow apparently believes that the United States is unwilling to respond to Russian employment of tactical nuclear weapons with strategic nuclear weapons.¹⁰

Russia has embraced this strategy, knowing that the U.S. has limited options to provide a commensurate response to a low-yield nuclear weapon. The U.S. currently has only a few aircraft-delivered low-yield nuclear weapons forward deployed to Europe.

Some critics have argued that developing a low-yield nuclear warhead submarine-launched missile would lower the threshold to nuclear war and start an arms race. During the latter years of the Cold War, the U.S. had several hundred low-yield nuclear weapons deployed in Europe and on U.S. Navy ships worldwide. These deployments did not lower the threshold for nuclear war between the U.S. and the Soviet Union. Instead, a low-yield nuclear warhead provided the President with a credible and commensurate response to an adversary’s low-yield nuclear weapons. The deployment of the Army’s Pershing II nuclear warhead ground-launched ballistic missiles in the early 1980s finally brought the Soviet Union to the negotiating table and ultimately led to the INF Treaty.

If a regional aggressor thinks that the only available U.S. response to the use of a low-yield nuclear weapon is to use high-yield strategic nuclear ballistic missiles or a low-yield nuclear weapon delivered by a fourth-generation aircraft, it might deem that response option to be not credible or able to penetrate its modern air defense system. A submarine-launched, low-yield nuclear ballistic missile would provide a prompt and survivable global response to a low-yield attack. In addition to diversifying U.S. low-yield delivery platforms, a ballistic submarine’s stealth makes it practically impossible to locate. Moreover, Russia must assume that all deployed U.S. ballistic missile submarines have this capability, removing any perceived gap in U.S. nuclear deterrence capabilities and greatly increasing the deterrent effect on any preemptive low-yield strike.

The United States should therefore continue to develop and field a low-yield nuclear warhead for the Trident D5 submarine-launched ballistic missile as well as a nuclear-armed sea-launched cruise missile. As directed by the 2018 *Nuclear Posture Review*, these sea-launched nonstrategic nuclear weapons will provide the U.S. with more flexible and tailored nuclear deterrent options against regional aggressors such as Russia.¹¹ These new weapons would be compliant with both the INF Treaty and all other U.S. arms control agreements.

Ground-Launched Cruise Missile Capabilities. By unilaterally adhering to the INF Treaty’s limitations, the U.S. is the only nation in the world constraining itself from developing intermediate-range conventional missiles to counter growing conventional and nuclear intermediate-range missile arsenals. These threats are not just limited to Russia. China has deployed hundreds of medium-range and intermediate-range missile systems that can strike U.S. naval warships operating near the South China Sea as well as the U.S.’s and East Asian allies’ military bases. The rogue nations of Iran and North Korea also continue unabated in their development of increasingly advanced ballistic missiles.

Congress recognized this need in the National Defense Authorization Act (NDAA) for Fiscal Year 2018, which specified that “[t]he Secretary of Defense shall establish a program of record to develop a conventional road-mobile ground-launched cruise mis-

10. U.S. Department of Defense, Office of the Secretary of Defense, *Nuclear Posture Review 2018*, February 2018, p. 7, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF> (accessed January 23, 2019).

11. *Ibid.*, pp. XI–XIII.

sile system with a range of between 500 to 5,500 kilometers, including research and development activities with respect to such cruise missile system.”¹²

Fielding a conventional ground-launched cruise missile, and eventually a ground-launched intermediate-range ballistic missile, would give the U.S. military a greater diversity and flexibility of strike capabilities and complicate adversaries’ ability to counter U.S. forces. Additionally, a modified conventional ground-launched ballistic missile could strike naval targets in a manner similar to that of the anti-ship versions of China’s DF-21 and DF-26 missiles. This would provide additional long-range antiship and offensive land strike capacity in the Indo-Pacific where U.S. naval warships are significantly outnumbered by Chinese land-based and naval weapons systems. Finally, if China considers the deployment of U.S. ground-launched missiles in the Indo-Pacific to be a significant threat to its own security and military strategies, it might reconsider the need for a global ban or restriction on such weapons.

The United States should immediately develop and field a ground-launched cruise version of an air-launched or sea-launched cruise missile, such as the Joint Air-to-Surface Standoff Missile-Extended Range or the Tomahawk Land Attack Missile. This would give U.S. ground forces in Europe and NATO a cruise missile capability commensurate with Russia’s 9M729 missile. Modifying an existing cruise missile would enable the U.S. to field this critical capability both rapidly and cost-effectively.

Air and Missile Defense Capabilities in Europe.

An effective cruise missile defense system requires a persistent high-altitude airborne radar that can look down in all directions simultaneously to provide long-range detection against low-flying cruise missiles. The DOD’s solution to this problem was the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS). Although the JLENS pro-

gram raised several technical and cost concerns, its 30-day endurance, 360-degree field of view, and 340-mile cruise missile detection range demonstrated the advantages of a high-altitude radar system.¹³ After a JLENS aerostat broke loose from its mooring, causing over \$1.5 million in damages in October 2015 and significant congressional scrutiny, the Army eventually terminated the program.¹⁴ Whether the U.S. Army decides to reinstate JLENS or develop a new persistent high-altitude radar system, an aerostat-based system has significant endurance advantages over any unmanned aircraft-based system.

Current high-altitude unmanned aerial systems have a maximum endurance of approximately 24 hours and are not designed to carry a large long-range surveillance radar. Raytheon Corporation claims that it would require up to five manned fixed-wing surveillance aircraft at five to seven times the operating cost to provide the same 24/7 coverage for 30 days that is provided by a JLENS orbit.¹⁵ Even if these figures are not 100 percent accurate, they correctly point out that it will take a large fleet of fixed-wing aircraft (manned or unmanned) to provide the endurance required for this mission.

Seeing the growing need for cruise missile defense in Europe, Congress directed the Secretary of the Defense in its NDAA for Fiscal Year 2019 to certify whether there is a need for the Army to deploy an interim cruise missile defense capability.¹⁶ If such a capability is required before the Army’s Indirect Fire Protection Capability becomes fully operational, then the Secretary of the Army must deploy two cruise missile defense batteries no later than September 30, 2020.¹⁷ To achieve this aggressive and probably unrealistic deployment date, Congress is encouraging the Army to “deploy systems that require the least amount of development” or “procure non-developmental air and missile defense systems currently in production.”¹⁸

12. National Defense Authorization Act for Fiscal Year 2018, Public Law 115-91, 115th Cong., December 12, 2017, Sec. 1243(c)(1), <https://www.congress.gov/bill/115th-congress/house-bill/2810> (accessed January 23, 2019).

13. Raytheon Corporation, “JLENS,” <https://www.raytheon.com/capabilities/products/jlens> (accessed January 23, 2019).

14. Associated Press, “Army Denies All Claims for Damage Caused by Runaway Blimp,” *Army Times*, February 10, 2017, <https://www.armytimes.com/news/your-army/2017/02/10/army-denies-all-claims-for-damage-caused-by-runaway-blimp/> (accessed January 23, 2019).

15. Raytheon Corporation, “JLENS.”

16. John S. McCain National Defense Authorization Act for Fiscal Year 2019, Public Law 115-232, 115th Cong., August 13, 2018, Sec. 112(b)(2)(A) and (B), <https://www.congress.gov/bill/115th-congress/house-bill/5515/text> (accessed December 29, 2018).

17. *Ibid.*

18. *Ibid.*

The U.S. military has only two operational cruise missile defense systems, the Aegis weapons system deployed on Navy ships and the National Advanced Surface-to-Air Missile System (NASAMS) that is part of the U.S. National Capital Region's air defense system.¹⁹ The Aegis Ashore sites in Poland and Romania do not currently have a cruise missile defense capability, but they could be upgraded to provide dual-mission capability like that of the latest U.S. *Arleigh Burke*-class destroyers. While there is no publicly available information regarding the NASAMS radar system, it is likely a ground-based radar similar to other U.S. air defense radars.

The effectiveness of these existing U.S. cruise missile systems is restricted by their relatively short radar detection range against low-flying cruise missiles, which effectively limits them to point-defense systems. To achieve the longer detection ranges with 360-degree coverage, and therefore increased engagement ranges, the DOD should field a persistent airborne high-altitude radar system as soon as possible.

The United States should field increased air and missile defense capabilities in Europe focused on defeating Russian GLCM threats. Current U.S. ground-based missile defense systems, such as Patriot, the Theater High Altitude Area Defense system, and Aegis Ashore, are optimized to counter ballistic missile threats with their predictable high-altitude flight paths. Their ground-based radars are designed to look up and can cover only a specific sector of the sky. GLCMs fly much more slowly than ballistic missiles, but they also fly much lower, often following terrain contours at altitudes of less than 200 feet. These low flight altitudes, coupled with using mountains and valleys where available to obscure their radar return, limit the range at which ground-based radars can detect cruise missiles to as little as 12 miles. Additionally, cruise missiles can fly routes that enable missiles fired in a salvo from one location to arrive at the target from multiple directions. Further complicating the ability to detect and target cruise missiles, Russia is developing cruise missiles with stealth technologies that further reduce their detection range.

Ground-Launched Intermediate-Range Cruise Missiles. Should the Russian Federation fail to engage with the U.S. in renegotiating an updated treaty or deploy nuclear low-yield cruise missiles within range of NATO nations, the U.S. and NATO must seriously consider deploying their own ground-launched low-yield nuclear cruise missiles in the European Area of Operations to counter the Russian threat. While there would likely be some public opposition to the deployment of nuclear cruise missiles in one or more NATO nations, a unified U.S.-NATO response would send a very clear signal to Russia of the credibility of this non-strategic nuclear deterrent.

Since the U.S. military is already developing a new sea-launched low-yield nuclear cruise missile, it is technically feasible to develop a ground-launched version of this missile. Additionally, since Congress also directed the DOD to develop a road-mobile ground-launched conventional cruise missile, this launcher could likely be modified to accommodate a nuclear cruise missile.

Conceivably, the development of ground-launched nuclear cruise missiles could prompt Russia to renegotiate an updated INF Treaty before deployment is necessary, but the Soviet Union did not return to the negotiating table to discuss a ban on intermediate-range nuclear weapons until the U.S. had already deployed significant numbers of its Pershing II ballistic missiles in Europe. If the Russian Federation fails to renegotiate an updated INF Treaty within the next three to four years, the United States and NATO should therefore assess the need to deploy ground-launched low-yield nuclear missiles in Europe.

In parallel with the above recommendations to increase U.S. and NATO nuclear deterrence and cruise missile defense capabilities, the U.S. should continue to encourage the Russian government to renegotiate an updated INF Treaty. An updated treaty must consider the much different global threat environment and the proliferation of conventional ground-launched intermediate-range missiles that exist today compared to when the INF Treaty was signed in 1987. Both Russia and the United States have attempted unsuccessfully to encourage other

19. Raytheon Corporation, "National Advanced Surface-to-Air Missile System (NASAMS)," <https://www.raytheon.com/capabilities/products/nasams> (accessed January 23, 2019).

nations, specifically China, to join the ban on all ground-launched ballistic and cruise missiles with ranges between 500 and 5,500 kilometers.²⁰

What the U.S. Should Do

Both the military advantage that Russia has gained through its INF Treaty violations and Russia's military doctrine of using low-yield nuclear weapons to coerce its European neighbors justify U.S. withdrawal from this treaty. While the U.S. should continue its efforts renegotiate an updated INF Treaty for today's global security environment and the proliferation of intermediate-range missiles, it should expand and, if possible, accelerate its own military capabilities to deter and defeat this significant Russian threat.

Congress and the Department of Defense have already begun to develop some capabilities to improve U.S. and NATO low-yield nuclear deterrence capabilities as well as U.S. and NATO ground-based offensive and defensive cruise missile capabilities in Europe. Congress and the DOD must continue to fully resource these programs to deploy these critical capabilities as soon as technically feasible as well as assess the need for additional nuclear deterrence efforts. To this end, Congress should:

- **Support the DOD's continued development and fielding of a low-yield nuclear warhead for the Trident D5 submarine-launched ballistic missile as well as a nuclear-armed sea-launched cruise missile.**

The U.S. Army is developing a ground-launched cruise missile system and improved ground-based cruise missile defense systems. To field these critical capabilities most efficiently and rapidly, the Army should:

- **Immediately develop and field a road-mobile conventional ground-launched version of an operational U.S. air-launched or sea-launched cruise missile as soon as possible.**
- **Leverage existing U.S. operational cruise missile defense systems and previous persistent high-altitude radar system efforts to field increased air and missile defense capabilities in Europe focused on defeating Russian GLCM threats.**

Should these improved defensive and deterrent capabilities fail to bring Russia back to the negotiating table within the next several years, the United States should:

- **Work closely with its NATO allies to assess the need to deploy ground-launched low-yield nuclear missiles in Europe.**

Conclusion

The Department of Defense and Congress have recognized the significant threats posed to the U.S. and its European allies by Russia's willful violation of its INF Treaty obligations and deployment of the 9M729 ground-launched cruise missile system. Their efforts to develop and field new capabilities to defend against and deter this threat should continue in fiscal year 2020 and beyond.

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20. "Joint U.S.-Russian Statement on the treaty on the Elimination of Intermediate-Range and Short-Range Missiles at the 62nd Session of the UN General Assembly," U.S. Department of State, October 25, 2007, <https://2001-2009.state.gov/r/pa/prs/ps/2007/oct/94141.htm> (accessed January 23, 2019).