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Russian Compliance with the Intermediate Range Nuclear Forces (INF) Treaty: Background and Issues for Congress

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Summary

The United States and Soviet Union signed the Intermediate-Range Nuclear Forces (INF) Treaty in December 1987. Negotiations on this treaty were the result of a "dual-track" decision taken by NATO in 1979. At that time, in response to concerns about the Soviet Union's deployment of new intermediate-range nuclear missiles, NATO agreed both to accept deployment of new U.S. intermediate-range ballistic and cruise missiles and to support U.S. efforts to negotiate with the Soviet Union to limit these missiles. In the INF Treaty, the United States and Soviet Union agreed that they would ban all land-based ballistic and cruise missiles with ranges between 500 and 5,500 kilometers. The ban would apply to missiles with nuclear or conventional warheads, but would not apply to sea-based or air-delivered missiles.

The U.S. State Department, in the 2014, 2015, 2016, 2017, and 2018 editions of its report *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, stated that the United States has determined that "the Russian Federation is in violation of its obligations under the [1987 Intermediate-range Nuclear Forces] INF Treaty not to possess, produce, or flight-test a ground-launched cruise missile (GLCM) with a range capability of 500 km to 5,500 km, or to possess or produce launchers of such missiles." In the 2016 report, it noted that "the cruise missile developed by Russia meets the INF Treaty definition of a ground-launched cruise missile with a range capability of 500 km to 5,500 km, and as such, all missiles of that type, and all launchers of the type used or tested to launch such a missile, are prohibited under the provisions of the INF Treaty." The 2017 and 2018 compliance reports describe the types of information the United States has provided to Russia in pressing its claim of noncompliance, including, in 2018, the Russian designator for the missile—9M729. Press reports also indicate that Russia has now begun to deploy the new cruise missile.

The Obama Administration raised its concerns about Russian compliance with the INF Treaty in a number of meetings since 2013. These meetings made little progress because Russia continued to deny that it had violated the treaty. In October 2016, the United States called a meeting of the Special Verification Commission, which was established by the INF Treaty to address compliance concerns. During this meeting, in mid-November, both sides raised their concerns, but they failed to make any progress in resolving them. A second SVC meeting was held in December 2017. The United States has also begun to consider a number of military responses, which might include new land-based INF-range systems or new sea-launched cruise missiles, both to provide Russia with an incentive to reach a resolution and to provide the United States with options for future programs if Russia eventually deploys new missiles and the treaty regime collapses. It might also suspend or withdraw from arms control agreements, although several analysts have noted that this might harm U.S. security interests, as it would remove all constraints on Russia's nuclear forces.

The Trump Administration conducted an extensive review of the INF Treaty during 2017 to assess the potential security implications of Russia's violation and to determine how the United States would respond going forward. On December 8, 2017—the 30th anniversary of the date when the treaty was signed—the Administration announced that the United States would implement an integrated response that included diplomatic, military, and economic measures. Congress is likely to continue to conduct oversight hearings on this issue, and to receive briefings on the status of Russia's cruise missile program. It may also consider legislation authorizing U.S. military responses and supporting alternative diplomatic approaches.

This report will be updated as needed.

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Recent Developments

The State Department, in the 2018 version of its Annual Report on *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, confirmed that Russia continues to be in violation of its obligation "not to possess, produce, or flight-test a ground-launched cruise missile (GLCM) with a range capability of 500 kilometers to 5,500 kilometers, or to possess or produce launchers of such missiles."[1] As in past reports, the 2018 report did not contain details about the capabilities of the offending missile, and did not confirm press reports about the missile's deployment. However, the report indicated that the United States has provided Russia with "information pertaining to the missile and the launcher, including Russia's internal designator for the mobile launcher chassis and the names of the companies involved in developing and producing the missile and launcher" and "information on the violating GLCM's test history, including coordinates of the tests and Russia's attempts to obfuscate the nature of the program." The report also indicated that the GLCM has a range capability of between 500 and 5,500 kilometers and that it is "distinct from the R-500/SSC-7 GLCM or the RS-26 ICBM." Finally, it noted that the United States has assessed that the designator for "the system in question is 9M729."

On December 8, 2017—the 30th anniversary of the date the treaty was signed—the Trump Administration released a fact sheet describing an "integrated strategy that the United States would pursue in response to Russia's continuing violation of the INF Treaty."[2] This fact sheet noted that the INF Treaty "is a pillar of international security and stability" that has "contributed to managing strategic competition" between the United States and Russia "and is critically important to the security of U.S. allies and partners globally." It also noted that the United States has pressed Russia to return to compliance, but that Russia continues to refuse to acknowledge the existence of the offending missile system. It then outlined three steps the United States would take in response. First, the United States will continue "to seek a diplomatic resolution" to the dispute. Second, DOD will review "military concepts and options for conventional, ground-launched, intermediate-range missile systems." It noted that this effort would not violate the INF Treaty, but would "prepare the United States to defend itself and its allies" if the treaty collapsed as a result of Russia's violation. Finally, the United States will take economic measures "tied to entities involved in the development and manufacture of Russia's prohibited cruise missile system." It noted that both the military steps and economic measures would cease if Russia returned to compliance with the treaty.

The House and Senate both included provisions in their versions of the National Defense Authorization Act for 2018 that called for the development of a new U.S. land-based cruise missile. The House bill (H.R. 2810, §1244) mandated that the Secretary of Defense both "establish a program of record to develop a conventional road-mobile ground-launched cruise missile system with a range of between 500 to 5,500 kilometers" and submit "a report on the cost, schedule, and feasibility to modify existing and planned missile systems ... for ground launch with a range of between 500 and 5,500 kilometers." The Senate bill (§1635) did not use the phrase "program of record," but stated that DOD should establish "a research and development program for a dual-capable road-mobile ground-launched missile system with a maximum range of 5,500 kilometers." The Senate also required a report on the feasibility of modifying other

[1] U.S. Department of State, *Adherence to and Compliance With Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, Report, Washington, DC, April 2018, p. 10, https://www.state.gov/documents/organization/280774.pdf.

[2] U.S. Department of State, Bureau of Arms Control, Verification, and Compliance, *INF Treaty: At a Glance*, Fact Sheet, Washington, DC, December 8, 2017, https://www.state.gov/t/avc/rls/2017/276361.htm.

missile systems and mandates that the costs and feasibility of these modifications be compared to the costs and feasibility of a new ground-launched cruise missile.

The conference report on the 2018 NDAA (H.Rept. 115-404) retained the House language that mandates that the Secretary of Defense "establish a program of record to develop a conventional road-mobile ground-launched cruise missile system with a range of between 500 to 5,500 kilometers" and authorized $58 million in funding for the development of active defenses to counter INF-range ground-launched missile systems; counterforce capabilities to prevent attacks from these missiles; and countervailing strike capabilities to enhance the capabilities of the United States.

Analysts who support this approach argue that new U.S. military capabilities would not only offset any military advantage Russia might accrue from its violation, but would also remind Russia of the threats it would face if the INF Treaty ceased to exist.[3] Others, however, question this approach. They note that the U.S. development of a new intermediate-range land-based cruise missile could speed the end of the INF Treaty, which they argue remains important for U.S. and allied security, and that the United States could offset Russia's military capabilities with sea-based or air-based systems that would not violate the treaty. Moreover, they note that U.S. allies in Europe may not be willing to accept the deployment of new U.S. nuclear missiles, and that, as was the case before the INF Treaty was concluded in the 1980s, plans to do so could split the alliance.[4] Nevertheless, most analysts agree that the Trump Administration must address this issue with both its allies and Russia to ensure that Russian activities do not undermine NATO or divide the United States from its allies.[5]

Introduction

In July 2014, the State Department released the 2014 edition of its report *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*. This report states that the United States has determined that "the Russian Federation is in violation of its obligations under the [1987 Intermediate-range Nuclear Forces] INF Treaty not to possess, produce, or flight-test a ground-launched cruise missile (GLCM) with a range capability of 500 km to 5,500 km, or to possess or produce launchers of such missiles."[6] The report does not offer any details about the offending missile or cite the evidence that the United States used to make this determination, but it does note that the United States "raised these concerns with the Russian Federation" several times during 2013 and "will continue to pursue resolution" of the issue.

The 2015, 2016, 2017, and 2018 State Department reports on *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments* repeated the

[3] Thomas Karako, "How to Stop Russia from Cheating on Missile Treaty," *The Hill*, February 28, 2017, http://thehill.com/blogs/pundits-blog/foreign-policy/321512-how-to-stop-russia-from-cheating-on-missile-treaty.

[4] Steven Pifer, "How Washington Should Respond to Russia's Missile Treaty Violation," *The Hill*, March 7, 2017, http://thehill.com/blogs/pundits-blog/defense/322479-how-us-should-respond-to-russias-missile-treaty-violation. See, also, Michael Krepon, "Responding to the INF Treaty Violation," ArmsControlWonk, March 5, 2017, http://www.armscontrolwonk.com/archive/1202903/responding-to-the-inf-treaty-violation/.

[5] Jon Wolfsthal, "Trump's Silence on Russian Missiles Makes America Less Safe," *Foreign Policy*, March 7, 2017, http://foreignpolicy.com/2017/03/07/trumps-silence-on-russian-missiles-makes-america-less-safe/.

[6] U.S. Department of State, *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, Washington, DC, July 2014, pp. 8-10, http://www.state.gov/t/avc/rls/rpt/2014/230047.htm.

claim that Russia had violated the INF Treaty and added a few details to the assertion. These reports state that "the United States determined the cruise missile developed by the Russian Federation meets the INF Treaty definition of a ground-launched cruise missile with a range capability of 500 km to 5,500 km, and as such, all missiles of that type, and all launchers of the type used to launch such a missile, are prohibited under the provisions of the INF Treaty."[7] The Administration also noted that, as in past years, "the United States again raised concerns with Russia on repeated occasions in an effort to resolve U.S. concerns. The United States will continue to pursue resolution of U.S. concerns with Russia." The 2016 report did not, however, repeat the assessment mentioned in 2015 that "it is in the mutual security interests of all the Parties to the INF Treaty that Russia and the other 11 successor states to the Soviet Union remain Parties to the Treaty and comply with their obligations." In addition, the 2017 and 2018 reports include details on the types of information the United States has shared with Russia to bolster its claim of Russian noncompliance. The 2018 report also states that "the United States assesses the Russian designator for the system in question is 9M729."[8]

Obama Administration officials often stated that the INF Treaty remained in the security interest of the United States and its allies, and that the U.S. goal is to "to work to bring Russia back in to full compliance." However, because Russia was unwilling to address U.S. concerns or even acknowledge the existence of the offending cruise missile, the United States reviewed a broad range of economic and military options that might both provide an incentive for Russia to return to compliance with the treaty and provide the United States with the capability to counter Russian actions if it does not return to compliance.[9]

Secretary of Defense Mattis addressed the INF when responding to questions submitted prior to his nomination hearing in early 2017. He stated that Russia's violation of the treaty "increases the risk to our allies and poses a threat to U.S. forces and interests." He also noted that Russia's violation, if allowed to stand, "could erode the foundations of all current and future arms control agreements and initiatives." At the same time, he stated that the violation would not provide Russia with a "significant military advantage," although, if Russia chooses to "act as an adversary, we must respond appropriately and in league with our allies." Further, he echoed the Obama Administration's view that "returning to compliance is in Russia's best interest." Secretary Mattis reaffirmed this goal in November 2017, after a meeting with NATO defense ministers.[10] At the same time, press reports indicate that the Trump Administration is moving forward with efforts to begin research and development into a new U.S. ground-launched cruise missile of INF range.[11]

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[7] U.S. Department of State, *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, Washington, DC, April, 2016, http://www.state.gov/t/avc/rls/rpt/2016/255651.htm.

[8] U.S. Department of State, *Adherence to and Compliance With Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, Report, Washington, DC, April 2018, p. 10, https://www.state.gov/documents/organization/280774.pdf.

[9] Michael Gordon, "Pentagon to Press Russia on Arms Pact Violation," *New York Times*, December 11, 2014. See, also, Bill Gertz, "Pentagon Considering Deployment of Nuclear Missiles in Europe," *Washington Free Beacon*, December 11, 2014. See, also, Robert Burns, "U.S. Might Deploy Missiles in Europe to Counter Russia," *Associated Press*, June 4, 2015.

[10] "Mattis Says NATO Seeks Russia's Compliance With Nuclear Treaty After 'Violations,'" *Radio Free Europe*, November 10, 2017, https://www.rferl.org/a/nato-mattis-russia-inf-treaty-violations/28844967.html.

[11] Josh Rogin, "Russia has deployed a banned nuclear missile. Now the U.S. threatens to build one.," *Washington Post*, November 16, 2017, https://www.washingtonpost.com/news/josh-rogin/wp/2017/11/16/russia-has-deployed-a-banned-nuclear-missile-now-the-u-s-threatens-to-build-one/?utm_term=.2482720d2d98. See, also, Julain E. Barnes, Paul Sonne, and Brett Forrest, "Pentagon Moves to Develop Banned Intermediate Missile," *Wall Street Journal*, November,

The Trump Administration conducted a review of the INF Treaty during its first year in office, and announced the results on December 8, 2017—the 30th anniversary of the date the treaty was signed.[12] The Administration identified an "integrated strategy" that it would implement to seek to resolve questions about Russia's compliance, to press Russia to return to compliance, and to prepare the United States to defend itself and its allies if Russia continued to violate the treaty and the treaty collapsed. Specifically, it noted that the United States will continue "to seek a diplomatic resolution through all viable channels, including the INF Treaty's Special Verification Commission (SVC)." Second, it stated that DOD "is commencing INF Treaty-compliant research and development (R&D) by reviewing military concepts and options for conventional, ground-launched, intermediate-range missile systems." It noted that this effort would not violate the INF Treaty, but would "prepare the United States to defend itself and its allies" if the treaty collapsed as a result of Russia's violation. Finally, the United States will take economic measures "tied to entities involved in the development and manufacture of Russia's prohibited cruise missile system." It noted that both the military steps and economic measures would cease if Russia returned to compliance with the treaty.

The Administration has also reaffirmed U.S. support for the INF Treaty and its interest in convincing Russia to return to compliance. In an interview with the Russian newspaper *Kommersant*, Thomas Shannon, who was the Under Secretary of State for Political Affairs, stated that "the Trump Administration values the INF Treaty as a pillar of international security and stability."[13] He also noted that "in this time of increased tensions between the United States and Russia, INF and other arms control agreements are essential for ensuring transparency and predictability in our relationship." However, he also stated that while the United States is "making every effort to preserve the INF Treaty in the face of Russian violations," a "continuation of a situation in which the United States remains in compliance while Russia violates the agreement is unacceptable to us." Hence, he emphasized that "Russia needs to return to compliance with its obligations by completely and verifiably eliminating the prohibited missile system."

In support of this objective, the United States called for a meeting of the Special Verification Commission; this meeting was held in Geneva from December 12 to 14, 2017. As the State Department noted, the participants agreed that "the INF Treaty continues to play an important role in the existing system of international security, nuclear disarmament and non-proliferation, and that they will work to preserve and strengthen it."[14] But, according to some reports, Russia continued to deny that the 9M729 ground-based cruise missile had ever been tested to INF range or that telemetry from the tests supported a conclusion that it violated the INF Treaty. The United States has not disputed, publicly, Russia's assertion that it did not test the missile to INF range, but it did note, in the State Department's Annual Report, that Russia has attempted to "obfuscate the nature of the program."[15]

16, 2017, https://www.wsj.com/amp/articles/pentagon-moves-to-develop-banned-intermediate-missile-1510862789.

[12] U.S. Department of State, Bureau of Arms Control, Verification, and Compliance, *INF Treaty: At a Glance*, Fact Sheet, Washington, DC, December 8, 2017, https://www.state.gov/t/avc/rls/2017/276361.htm.

[13] U.S. State Department, Bureau of Arms Control, Verification, and Compliance, *30th Anniversary of the INF Treaty: Under Secretary Thomas A. Shannon's Interview with Kommersant daily*, Washington, DC, December 8, 2017, https://www.state.gov/t/avc/rls/2017/276364.htm.

[14] U.S. Department of State, *Thirty-First Session of the Special Verification Commission Under the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of Their Intermediate-Range and Shorter-Range Missiles (INF Treaty)*, December 14, 2017, https://www.state.gov/r/pa/prs/ps/2017/12/276613.htm.

[15] U.S. Department of State, *Adherence to and Compliance With Arms Control, Nonproliferation, and Disarmament*

Press reports indicate that the United States identified Russian activities that raised INF compliance concerns as early as 2008 and that the Obama Administration began to mention these concerns to Members of Congress in late 2011.[16] Reports from October 2016 indicated that the Administration had concluded that Russia might be preparing to deploy the missile, as it is producing more missiles than it would need to support a test program.[17] This deployment evidently occurred in December 2016, with one brigade remaining at the test site at Kapustin Yar and another moving to a different base within Russia.[18] Reports indicate that some U.S. officials also believe Russia may be taking steps toward pulling out of the treaty.[19]

Congress sought additional information in subsequent briefings by Administration officials. It has also called on the Administration, in both letters and legislation, to press U.S. compliance concerns with Russia, to hold Russia accountable for its actions, and to forgo additional reductions in U.S. nuclear weapons, either unilaterally or through a treaty, until Russia returns to compliance with the INF Treaty.[20] In a letter sent after the October 2016 allegations, Representative Thornberry and Representative Nunes called on the Administration to not only forswear any further changes to U.S. nuclear doctrine and force structure but also to implement economic sanctions and military responses to "ensure Russia understood the cost of its illegal activity."[21]

Members also highlighted their concerns with Russia's compliance with the INF Treaty in legislation. The House version of the FY2015 National Defense Authorization Act (H.R. 4435, §1225) stated that Congress believes Russia is in "material breach of its obligations" under the INF Treaty and that "such behavior poses a threat to the United States, its deployed forces, and its allies." The legislation also called on the President to consider, after consulting with U.S. allies, whether remaining a party to the INF Treaty was still in their national security interests if Russia was in "material breach" of the treaty. The final version of this legislation (H.R. 3979, §1244) did not include these provisions, but did recognize that Russian violations of the INF Treaty are a serious challenge to the security of the United States and its allies. The final version also stated that it is in the national security interest of the United States and its allies for the INF Treaty to remain in effect and for Russia to return to full compliance with the treaty. At the same time, the legislation mandated that the President submit a report to Congress that includes an assessment of the effect of Russian noncompliance on the national security interests of the United States and its allies, and a description of the President's plan to resolve the compliance issues. The legislation also calls for periodic briefings to Congress on the status of efforts to resolve the U.S. compliance concerns.

Agreements and Commitments, Report, Washington, DC, April 2018, p. 10, https://www.state.gov/documents/organization/280774.pdf.

[16] Josh Rogin, "U.S. Knew Russia Violated Intermediate-Range Nuclear Forces Treaty," *The Daily Beast*, November 26, 2013. See also, Michael Gordon, "U.S. Says Russia Tested Missile, Despite Treaty," *New York Times*, January 30, 2014.

[17] Michael R. Gordon, "Russia is Moving Ahead With Missile Program that Violates Treaty, U.S. Offiicals Say," *New York Times*, October 19, 2016, http://www.nytimes.com/2016/10/20/world/europe/russia-missiles-inf-treaty.html.

[18] Michael R. Gordon, "Russia Deploys Missile, Violating Treaty and Challenging Trump," *New York Times*, February 14, 2017, https://www.nytimes.com/2017/02/14/world/europe/russia-cruise-missile-arms-control-treaty.html?_r=0.

[19] Joe Gould, "U.S. Lawmakers Urge Obama to Punish Russia Over Missle Treaty Breach," *Defense News*, October 19, 2016, http://www.defensenews.com/articles/us-lawmakers-urge-obama-to-punish-russia-missile-treaty-breach.

[20] Rachel Oswald, "McKeon: U.S. Should Formally Protest Russian Arms Control Breach," *Global Security Newswire*, February 25, 2014. See also, Rubio et al., S.Con.Res. 34, letters cited in H.R. 1960, §1055, para 7.

[21] U.S. House, Committee on Armed Services. Letter from Representatives Thornberry and Nunes. October 17, 2016, https://armedservices.house.gov/sites/republicans.armedservices.house.gov/files/wysiwyg_uploaded/20161017%20WMT%20%26%20Nunes%20to%20POTUS%20re%20INF.pdf.

The FY2016 NDAA (H.R. 1735, §1243) also contained provisions addressing congressional concerns with Russia's actions under the INF Treaty. As is discussed in more detail below, it not only mandated that the President notify Congress about the status of the Russian cruise missile program, it also mandated that the Secretary of Defense submit a plan for the development of military capabilities that the United States might pursue to respond to or offset Russia's cruise missile program. In early 2017, following press reports that Russia had begun to deploy the missile, Senator Tom Cotton introduced legislation (S. 430)—titled the Intermediate-Range Nuclear Forces (INF) Treaty Preservation Act of 2017—that would authorize the appropriation of $500 million for the Pentagon to develop active defenses to counter ground-launched missile systems of INF range; to develop counterforce capabilities to prevent attacks from these missiles; and to facilitate "the transfer to allied countries" of missile systems of INF range. The legislation also stated that the United States should "establish a program of record" to develop its own INF-range ground-launched cruise missile system.

The House and Senate both included provisions in their versions of the National Defense Authorization Act for 2018 that call for the development of a new U.S. land-based cruise missile. The House bill (H.R. 2810, §1244) mandated that the Secretary of Defense both "establish a program of record to develop a conventional road-mobile ground-launched cruise missile system with a range of between 500 to 5,500 kilometers" and submit "a report on the cost, schedule, and feasibility to modify existing and planned missile systems ... for ground launch with a range of between 500 and 5,500 kilometers." The bill (§1245) also mandated that the President submit a report to Congress that contains a determination of whether Russia has flight-tested, produced, or "continues to possess" a ground-launched cruise missile of INF range. If the President makes this determination, the bill states that the INF Treaty's ban on intermediate-range missiles will "no longer be binding on the United States as a matter of United States law."

The Senate bill (§1635) did not use the phrase "program of record" in its response to Russia's INF violation, but stated that DOD should establish "a research and development program for a dual-capable road-mobile ground-launched missile system with a maximum range of 5,500 kilometers." The Senate also required a report on the feasibility of modifying other missile systems and mandates that the costs and feasibility of these modifications be compared to the costs and feasibility of a new ground-launched cruise missile.

The conference report on the 2018 NDAA (H.Rept. 115-404) retains the House language that mandates that the Secretary of Defense "establish a program of record to develop a conventional road-mobile ground-launched cruise missile system with a range of between 500 to 5,500 kilometers" and authorizes $58 million in funding for the development of active defenses to counter INF-range ground-launched missile systems; counterforce capabilities to prevent attacks from these missiles; and countervailing strike capabilities to enhance the capabilities of the United States. It does not include the House version's requirement that the President submit a report to Congress, but it does direct the Director of National Intelligence to notify Congress "of any development, deployment, or test of a system by the Russian Federation that the Director determines is inconsistent with the INF Treaty." Further, the conference report does not contain the House language stating that this determination would mean that the treaty is no longer binding on the United States. Instead, it requires a report outlining possible sanctions against individuals in Russia who are determined to be "responsible for ordering or facilitating non-compliance by the Russian Federation."

This report describes the current status of the INF Treaty and highlights issues that Congress may address as the United States pursues its compliance concerns with Russia. It begins with a historical overview that describes the role of intermediate-range nuclear weapons in NATO's security construct in the late 1970s and the political and security considerations that affected the

negotiation of the INF Treaty. In addition, the report summarizes the provisions of the INF Treaty, highlighting those central to the discussion about Russia's current activities. It then reviews the publicly available information about the potential Russian violation and Russia's possible motivations for pursuing the development of a noncompliant missile. Next, the report summarizes Russia's concerns with U.S. compliance with the treaty. The report concludes with a discussion of options that the United States might pursue to address its concerns with Russia's activities and options that it might pursue if Russia deploys new INF-range missiles.

Background

Nuclear Weapons in NATO During the Cold War

Strategy and Doctrine

During the Cold War, nuclear weapons were central to the U.S. strategy of deterring Soviet aggression against the United States and U.S. allies. Toward this end, the United States deployed a wide variety of nuclear-capable delivery systems. These included mines, artillery, short-, medium-, and long-range ballistic missiles, cruise missiles, and gravity bombs. These weapons were deployed with U.S. troops in the field, aboard aircraft, on surface ships, on submarines, and in fixed, land-based launchers. The United States also articulated a complex strategy and developed detailed operational plans that would guide the use of these weapons in the event of a conflict with the Soviet Union and its allies.

The United States maintained its central "strategic" weapons—long-range land-based missiles, submarine-based missiles, and long-range bombers—at bases in the United States.[22] At the same time, it deployed thousands of shorter-range, or nonstrategic, nuclear weapons with U.S. forces based in Europe, Japan, and South Korea and on surface ships and submarines around the world.[23] It maintained these overseas deployments to extend deterrence and to defend its allies in Europe and Asia. Not only did the presence of these weapons (and the presence of U.S. forces, in general) serve as a reminder of the U.S. commitment to defend its allies if they were attacked, the weapons also could have been used on the battlefield to slow or stop the advance of an adversary's conventional forces.

In Europe, these weapons were part of the North Atlantic Treaty Organization's (NATO's) strategy of "flexible response." The United States and its NATO allies recognized that the Soviet Union and Warsaw Pact had numerical superiority in conventional forces and that, without the possibility of resort to nuclear weapons, the United States and NATO might be defeated in a conventional conflict. As a result, the flexible response strategy was designed to allow NATO to respond, if necessary, with nuclear weapons and to control escalation if nuclear weapons were used. Controlling escalation meant that the United States and NATO might be the first to use nuclear weapons in a conflict, with the intent of slowing or stopping the Soviet and Warsaw Pact forces if they overran NATO's conventional defenses and advanced into Western Europe. If the conflict continued, and the Soviet Union responded with its own nuclear weapons in an effort to disrupt the NATO response, then NATO could have escalated beyond the battlefield and

[22] For more information on U.S. strategic nuclear weapons, see CRS Report RL33640, *U.S. Strategic Nuclear Forces: Background, Developments, and Issues*, by Amy F. Woolf.

[23] For more information on U.S. nonstrategic strategic nuclear weapons, see CRS Report RL32572, *Nonstrategic Nuclear Weapons*, by Amy F. Woolf.

employed weapons with greater ranges or greater yields in attacks reaching deeper into Warsaw Pact territory. Ultimately, if the conflict continued and Western Europe remained under attack, the United States could have launched its longer-range strategic missiles and bombers against targets inside the Soviet Union.

This nuclear posture was designed to couple U.S. and allied security and, therefore, complicate Soviet efforts "to pursue a divide and conquer strategy toward NATO."[24] It had three overlapping objectives. First, the weapons and operational plans were designed to provide NATO with military capabilities that could have affected outcomes on the battlefield; in other words, NATO hoped it might at least *disrupt* the Soviet attack if not *defeat* Soviet and Warsaw Pact forces. Second, the ability of the United States and NATO to escalate the conflict, and hold at risk targets in the Soviet Union, was intended to *deter* an attack on Western Europe by convincing the Soviet Union and Warsaw Pact that any conflict, even one that began with conventional weapons, could result in nuclear retaliation.[25] Third, this approach was designed to *assure* U.S. allies in Europe that the United States would come to their defense, as mandated by Article V of the 1949 North Atlantic Treaty, if any of the allies were attacked by Soviet or Warsaw Pact forces.[26]

Questions of Credibility

As is often noted in discussions of extended deterrence today, the U.S. ability both to assure its allies of its commitment to their defense and to deter adversaries from attacking those allies rests on the credibility of the U.S. threat to resort to the use of nuclear weapons. While some argue that the existence of nuclear weapons may be enough to underscore the threat, most analysts agree that a credible threat requires plausible plans for nuclear use and weapons that can be used in executing those plans. During the Cold War, the United States often altered the numbers and types of nuclear weapons it deployed in Europe to bolster the credibility of its extended deterrent. Although many of these changes occurred in response to ongoing modernization programs and new assessments of Soviet capabilities, some were designed to respond to emerging concerns among U.S. allies about the credibility of the U.S. promise to fight in Europe in their defense. This was the case with the intermediate-range missiles that the United States deployed in Europe in 1983 and removed, under the terms of the INF Treaty, between 1988 and 1991.

One concern about the credibility of the U.S. extended deterrent derived from the short range of many of the U.S. nuclear weapons deployed in Europe. As noted above, many of these weapons were designed for use on the battlefield to disrupt a conventional attack by Soviet and Warsaw Pact forces. To make the threat of the possible use of nuclear weapons credible to the Soviet Union and its allies, the United States based significant numbers of these weapons near the potential front lines of a conflict in West Germany. This placement increased the likelihood that NATO would use the weapons early in a conflict and was intended to convince the Soviet Union

[24] Strobe Talbott, *Deadly Gambits: The Reagan Administration and the Stalemate in Nuclear Arms Control* (Alfred Knopf, 1984), p. 23.

[25] "The United States retains substantial nuclear capabilities in Europe to counter Warsaw Pact conventional superiority and to serve as a link to U.S. strategic nuclear forces." National Security Strategy of the United States, White House, January 1988, p. 16.

[26] Article V states, "The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that, if such an armed attack occurs, each of them ... will assist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area." See the North Atlantic Treaty, Washington, DC, April 4, 1949, http://www.nato.int/cps/en/natolive/official_texts_17120.htm.

of the potential for their use, because, if they were not used early, they would likely be overrun by Warsaw Pact forces. At the same time, though, the early use of these weapons would have caused extensive damage on the territory of West Germany, leading some to question whether NATO would actually employ the weapons early in conflict.[27] If the Soviet Union did not believe that NATO would use these weapons, it might believe that it could defeat at least some of the NATO allies (West Germany, in particular) without risking a response from the entire alliance or the escalation to nuclear war. Moreover, if some NATO allies did not believe that NATO would use the weapons to stop a Soviet attack, such allies might be vulnerable to coercion or intimidation from the Soviet Union prior to the start of a conflict. In this type of scenario, the Soviet Union might believe it could divide NATO by threatening some, but not all, of its members. As a result, many analysts argued that longer-range systems that could be deployed farther from the front lines and reach targets deeper inside enemy territory would provide a more credible deterrent.

A second concern about the credibility of U.S. assurances to its allies derived from the Soviet ability to attack the continental United States in response to a U.S. attack on the Soviet Union. Leaders in some of the allied countries questioned whether they could rely on the United States to attack targets in the Soviet Union, as a part of an escalation following an attack in Europe, if the Soviet Union could respond with attacks on targets inside the United States with "potentially suicidal consequences" for the United States.[28] Some of the allies feared that if U.S. vulnerability deterred the United States from attacking the Soviet Union in defense of Europe, then a war in Europe, even if it escalated to nuclear use, might remain confined to Europe, with the security of the NATO allies decoupled from the security of the United States. If the allies lacked confidence in the U.S. promise to escalate to strategic strikes on their behalf, then they might, again, be vulnerable to Soviet efforts to coerce or intimidate them before the war began. In addition, if the Soviet Union did not believe that the United States would escalate to strategic nuclear attacks, knowing that it was vulnerable to retaliation, then the Soviet Union might believe it could divide NATO with threats of war.

Concerns about the decoupling of U.S. and allied security, or, as it was often phrased, the question of whether the United States would actually "trade New York for Bonn," grew during the latter half of the 1970s, after the Soviet Union began to deploy SS-20 intermediate-range ballistic missiles. These three-warhead missiles, which nominally replaced older SS-4 and SS-5 missiles, had a range of 4,000 kilometers and could, therefore, strike targets in most NATO nations (although not in the United States or Canada) from bases inside the Soviet Union. NATO had no similar capability; it could not strike Moscow or other key Soviet cities with missiles or aircraft based in Western Europe. If the NATO allies or the Soviet Union believed that the United States would not attack the Soviet Union out of fear of a Soviet attack on the United States, then these missiles, and the threat they posed to all of Europe, might be sufficient to induce capitulation, or at least cooperation, from NATO's European allies.

The Dual-Track Decision of 1979

In December 1979, NATO responded to this gap in intermediate-range forces, and concerns about its effect on alliance security, by adopting a "dual-track" decision that sought to link the modernization of U.S. nuclear weapons in Europe with an effort to spur the Soviets to negotiate

[27] Richard Weitz, "The Historical Context," in *Tactical Nuclear Weapons and NATO*, ed. Tom Nichols, Douglas Stuart, Jeffrey D. McCausland (Carlisle, PA: U.S. Army War College, Strategic Studies Institute, 2012), p. 5.

[28] Paul Schulte, "Tactical Nuclear Weapons in NATO and Beyond: A Historical and Thematic Examination," in *Tactical Nuclear Weapons and NATO*, ed. Tom Nichols, Douglas Stuart, Jeffrey D. McCausland (Carlisle, PA: U.S. Army War College, Strategic Studies Institute, 2012), p. 25.

reductions in INF systems. In the first track, the United States and its NATO partners agreed to replace aging medium-range Pershing I ballistic missiles with a more accurate and longer-range Pershing II (P-II) while adding new ground-launched cruise missiles. They agreed to deploy 108 Pershing II ballistic missiles and 464 ground-launched cruise missiles, all with single nuclear warheads, between 1983 and 1986. The new weapons would be owned and controlled by the United States, but they would be deployed on the territories of five European allies. West Germany would house deployments of both Pershing II ballistic missiles and cruise missiles, while the United Kingdom, Italy, the Netherlands, and Belgium would each house deployments of cruise missiles.

The deployment decision was linked, technically and politically, to a second track where NATO agreed that the United States should attempt to negotiate limits with the Soviet Union on intermediate-range nuclear systems. While most of the allies agreed that NATO's security would be best served by eliminating the Soviet Union's ability to target all of Europe with SS-20 missiles, they recognized that the Soviet Union was unlikely to negotiate away those missiles unless it faced a similar threat from intermediate-range systems based in Western Europe. Few expected the Soviet Union to agree to the complete elimination of its SS-20 missiles, but all agreed that the negotiations were necessary, not just as a means to limit the Soviet threat, but also as a means to appeal to public opinion in Europe, where opposition to the new nuclear weapons was strong.

The Deployment Track

Although NATO adopted the dual-track decision by consensus, with all members of the alliance offering public support for both the deployment and negotiating plans, the governments of each of the five designated host nations still had to approve the deployments. Several had reservations and attached conditions to that approval. For example, West Germany did not want the Soviet Union to be able to single it out as the target for its political campaign against the new systems. Therefore, its leaders required that the NATO decision be unanimous and that at least one other nation on the European continent accept stationing of new nuclear systems.

The planned deployments spurred massive public protests across Europe and the United States. These began in 1980, shortly after NATO reached the dual-track decision, and escalated through the first half of the decade. For example, in late 1981, protests occurred in Italy, Germany, Great Britain, and Belgium. Nearly 1 million people marched in Central Park in New York City in June 1982. Additional protests took place across the United States during October 1983.[29] In addition, in October 1983, nearly 3 million people protested across Europe, with nearly 1 million marching in the Netherlands and around 400,000 marching in Great Britain.[30] In one of the more well-known efforts, a Welsh group known as "Women for Life on Earth" established a peace camp at Greenham Common, the base where the United Kingdom would house 96 cruise missiles. The women camped outside the base for years, protesting the eventual deployment of the missiles.[31]

The governments in some of the nations that had accepted deployment of the missiles also faced political opposition to the weapons. In the Netherlands, the center-right coalition government supported the deployments but recognized that the weapons could become an issue in the 1986 elections, as the opposition Labor Party had threatened to block the deployment if it won. As a result, the government sought to link the deployments to progress in U.S.-Soviet negotiations on

[29] "Americans March to Oppose Missiles," *New York Times*, October 23, 1983.

[30] Lawrence S. Wittner, *Confronting the Bomb: A Short History of the World Nuclear Disarmament Movement* (Stanford, CA: Stanford University Press, 2009), p. 144.

[31] Greenham Common Women's Peace Camp, 1981–2000, http://www.greenhamwpc.org.uk/.

both strategic and theater nuclear weapons. In a compromise approved by Dutch parliament in 1984, the government delayed their deployment from 1986 until 1988, specifying that deployment could occur only if the Soviet Union increased the number of SS-20s above the number already deployed on June 1, 1984. The government in Belgium supported the deployments but also faced firm opposition from the Belgian Socialist Party. As a result, the government also supported efforts to move the arms control track forward, even though it did not link the deployment of cruise missiles on its territory to the completion of a treaty.

In spite of the opposition, and after extensive debate, each of the five nations agreed to deploy the new missiles. When the deployments began in late 1983, the Soviet Union suspended the arms control negotiations and did not return to the negotiating table until March 1995.

The Arms Control Track

The United States and Soviet Union opened their first negotiating session in the fall of 1980, at the end of the Carter Administration. The United States did not present the Soviet Union with a specific proposal for limits or reductions on intermediate-range missiles; instead, it outlined a set of guidelines for the negotiations. Specifically, the United States sought an agreement that would impose equal limits on both sides' intermediate-range missiles—the SS-4, SS-5, and SS-20 missiles for the Soviet Union and the Pershing II and ground-launched cruise missiles for the United States. The Soviet Union, in its proposal, suggested that the two sides simply freeze the numbers of medium-range systems in Europe. This meant that it would stop deploying, but would not reduce, its SS-20 missiles in exchange for the cancellation of all Pershing II and GLCM deployments.[32] Neither proposal was acceptable to the other side.

The Reagan Administration, which took office in January 1981, spent most of its first year evaluating and reconsidering the U.S. approach to arms control with the Soviet Union. In November 1981, President Reagan announced that the United States would seek the total elimination of Soviet SS-20, SS-4, and SS-5 missiles in return for the cancellation of NATO's deployment plans—a concept known as the "zero-option." The ban would be global, applying to Soviet missiles in both Europe and Asia. The Soviet Union, for its part, proposed that the two sides agree to a phased reduction of all medium-range nuclear weapons (which it defined as those with a range of 1,000 kilometers) deployed on the territory of Europe, in waters adjacent to Europe, or intended for use in Europe. This proposal would have not only avoided limits on Soviet missiles in Asia, it also would have captured some U.S. dual-capable aircraft based in Europe and U.S. sea-launched cruise missiles. Subsequently, in March 1982, the Soviet Union offered to freeze its deployments of SS-20 missiles unilaterally, and to maintain the moratorium until the two sides reached an agreement or the United States began to deploy the Pershing IIs and GLCMs.

Although the two sides discussed possible compromise positions during 1982 and 1983, they made little progress. When the United States began to deploy its INF systems in Europe in late 1983, the Soviet Union withdrew from the negotiations.

The negotiations resumed in March 1985 and began to gain traction in 1986. At the Reykjavik summit, in October 1986, Soviet President Gorbachev proposed that all intermediate-range missiles—the SS-20s, GLCMs, and Pershing IIs—be removed from Europe within five years of signing a treaty. He also indicated that the Soviet Union would reduce its SS-20s in Asia to 33 missiles, which would carry 99 warheads. In return, the United States could store a mix of 100

[32] Strobe Talbott, *Deadly Gambits: The Reagan Administration and the Stalemate in Nuclear Arms Control* (Alfred Knopf, 1984), p. 42.

GLCMs and Pershing IIs within the United States, but it could not deploy them within range of the Soviet Union. Further, in April 1987, President Gorbachev indicated that the Soviet Union was prepared to eliminate all of its shorter-range missiles (those with ranges between 300 and 600 miles) in Europe and Asia as a part of an INF agreement. Then, in June, he proposed a global ban on shorter-range and longer-range INF systems, essentially accepting the U.S. zero-option proposal from 1982.

The United States and the Soviet Union signed the Treaty on Intermediate Range Nuclear Forces (INF) on December 8, 1987.[33] They exchanged the instruments of ratification, and the treaty entered into force June 1, 1988. The two nations had to eliminate their INF systems within three years of the treaty's entry into force, but the treaty, and its ban on the deployment of intermediate-range land-based ballistic missiles and cruise missiles, is of unlimited duration.

The INF Treaty

The INF Treaty contained several features that were new to the U.S.-Soviet arms control process. Although it was not the first treaty to ban an entire category of weapons (a treaty signed in 1975 had banned biological weapons and earlier treaties had banned the emplacement of nuclear weapons on a seabed or stationing them on celestial bodies), it was the first to ban a category that each nation had already deployed and considered vital for its national security needs. Moreover, where prior treaties imposed equal burdens on each side, the INF Treaty called for asymmetrical reductions. The Soviet Union destroyed 1,846 missiles, including 654 SS-20s, whereas the United States destroyed 846 missiles. Moreover, each of the Soviet SS-20 missiles carried three warheads, while all the U.S. missiles carried only a single warhead.

The INF Treaty was also the first U.S.-Soviet treaty to employ intrusive monitoring mechanisms in its verification regime. Under prior treaties, the United States and Soviet Union had relied almost exclusively on their own satellites and remote sensing capabilities—known as national technical means (NTM) of verification—to monitor forces and verify compliance with the treaty. These systems served as the foundation of the monitoring regime under INF, but the Treaty also permitted on-site inspections of selected missile assembly facilities and all storage centers, deployment zones, and repair, test, and elimination facilities. Although it did not permit the parties to conduct inspections at any location within the other's territory, it did allow up to 20 short-notice inspections at sites designated in the Treaty. The two sides also agreed to participate in an extensive data exchange, which allowed them to account for all systems covered by the agreement. Further, it allowed each side to operate a continuous portal monitoring system outside one assembly facility in the other country, to confirm the absence of new INF missile production. These inspections continued for 10 years after the eliminations were complete, ending in May 2001.

The INF Treaty also established the Special Verification Commission (SVC) "to promote the objectives and implementation of the provisions of this Treaty." The United States and Soviet Union agreed that, if either party requested, they would meet in the SVC to "resolve questions relating to compliance" with their treaty obligations and to agree on any new measures needed "to improve the viability and effectiveness" of the Treaty.

[33] For the text of the INF Treaty, see http://www.state.gov/t/avc/trty/102360.htm.

Central Limits

Under the INF Treaty, the United States and Soviet Union agreed to destroy all intermediate-range and shorter-range ground-launched ballistic missiles and ground-launched cruise missiles. These are missiles with a range between 500 and 5,500 kilometers (300 and 3,400 miles). The launchers associated with the controlled missiles were also to be destroyed, although the warheads and guidance systems of the missiles did not have to be destroyed. They could be used or reconfigured for other systems not controlled by the Treaty. Further, the Treaty stated that neither party could produce or flight-test any new ground-launched intermediate-range missiles or produce any stages of such missiles or any launchers of such missiles in the future.

Article III of the INF Treaty listed the U.S. and Soviet intermediate-range and shorter-range missiles that existed at the time of treaty signing. For the Soviet Union, this list included the SS-20 intermediate-range missile, and the SS-4 and the SS-5 shorter-range missiles. The Soviet Union also agreed to destroy a range of older nuclear missiles, as well as the mobile, short-range SS-23, a system developed and deployed in the early 1980s. For the United States, the list of banned missiles included the new Pershing II ballistic missiles and ground-launched cruise missiles, along with several hundred older Pershing I missiles that were in storage in Europe.

The INF Treaty made it clear that each of these types of missiles and their launchers would count as INF missiles and launchers, even if they were altered to fly to different ranges or perform different missions. For example, the Treaty stated that if a type of ground-launched ballistic missile or ground-launched cruise missile "is an intermediate-range missile" then all missiles of that type "shall be considered to be intermediate-range missiles." The INF Treaty also stated that, "if a ballistic missile or a cruise missile has been flight-tested or deployed for weapon delivery, all missiles of that type shall be considered to be weapon-delivery vehicles." Further, it stated that "if a launcher has been tested for launching" a treaty-defined intermediate-range ground-launched ballistic or cruise missile, then "all launchers of that type shall be considered to have been tested for launching" missiles banned by the treaty. In other words, even if a nation sought to use a type of launcher for a different purpose or to launch a different type of missile, it would count as a treaty-limited launcher as long as even one launcher of that type had been tested or deployed with an INF-range missile.

The INF Treaty's ban on intermediate-range ballistic and cruise missiles applied only to land-based missiles. The treaty did not ban the possession, testing, or production of sea-based or air-delivered intermediate-range ballistic or cruise missiles, even if they had a range of between 500 and 5,500 kilometers. Moreover, it permitted the parties to test sea-based or air-delivered weapons at land-based test ranges, as long as they were "test-launched at a test site from a fixed land-based launcher which is used solely for test purposes" and that is distinguishable from an operational launcher of ground-launched ballistic or cruise missiles. Testing such weapons at other locations, or from operational ground-based launchers, would constitute a violation of the treaty.

Because the INF Treaty defined treaty-limited ballistic missiles and cruise missiles as "weapons delivery vehicles," rockets that were not designed or tested as weapons-delivery vehicles were not banned by the treaty, even if they were based on land and could fly to ranges between 500 and 5,500 kilometers. The INF Treaty also did not ban the possession or testing and production of missile defense interceptors, even if they flew to ranges between 500 and 5,500 kilometers. Specifically, Article VII stated that ground-launched ballistic missiles "of a type developed and tested solely to intercept and counter objects not located on the surface of the earth, it shall not be considered to be a missile to which the limitations of this Treaty apply."

Determining Missile Range

Article III of the INF Treaty lists the intermediate-range ballistic and cruise missiles in existence at the time the treaty was signed; these missiles were banned by the treaty and would remain banned, regardless of the range flown in tests conducted prior to, or possibly after, the signing of the treaty. Article VII describes how the parties will measure the range of new types of missiles to determine whether these missiles are covered by the limits in the Treaty.

Cruise Missiles

Article VII states that the range of a ground-launched cruise missile is "the maximum distance which can be covered by the missile in its standard design mode flying until fuel exhaustion, determined by projecting its flight path onto the earth's sphere from the point of launch to the point of impact." Like airplanes, cruise missiles do not necessarily fly on a predictable trajectory—they can change direction in flight and can fly to less than their maximum distance. Moreover, the maximum range to fuel exhaustion can depend on the altitude and path of the flight. As a result, flight tests using the same type of missile can demonstrate significant variations for the range of the missile. Observations from a single flight of the missile would be unlikely to provide enough data to estimate the maximum range. Although the range demonstrated in the flight could provide a baseline, other data, including estimates of the maximum amount of fuel and the weight of the missile, could also affect the calculation.

Ballistic Missiles

Article VII states that the "the range capability" of a new type of ground-launched ballistic missile "shall be considered to be the maximum range to which it has been tested." If the range capability of a new missile, as identified by the maximum range demonstrated during flight tests, falls between 1,000 kilometers and 5,500 kilometers, then the missile is considered to be an intermediate-range missile. If the maximum range is greater than 5,500 kilometers, the missile is considered to be a strategic ballistic missile that will count under the limits in the New Strategic Offensive Arms Control Treaty (New START).

Because ballistic missiles fly on a predictable trajectory, it is much easier to measure their range than the range of cruise missiles. However, ballistic missiles can also fly to less than their maximum range if they fly along a depressed trajectory or a lofted trajectory, if they carry a heavier payload, or if they consume only part of their fuel. Nevertheless, the INF Treaty does not ban, or even address, ballistic missile flight tests that fall within the 1,000 kilometer to 5,500 kilometer range if the missile in question demonstrated a maximum range greater than 5,500 kilometers in another flight test.

In 1988, when the Senate was debating the ratification of the INF Treaty, members of the Armed Services Committee and Foreign Relations Committee expressed concerns about whether this provided a path for the Soviet Union to circumvent the Treaty's ban on INF-range missiles. Some questioned whether the Soviet Union might be able to develop a new missile similar to the INF-range SS-20 and test it to a range greater than 5,500 kilometers, before testing it to INF ranges. Officials representing the Reagan Administration acknowledged that both these scenarios were possible and that neither was prohibited by the INF Treaty. In testimony before the Senate Armed Services Committee, Ambassador Maynard Glitman, the lead negotiator for the INF Treaty, stated that a missile tested even once to a range greater than 5,500 kilometers would be considered to be

a strategic ground-launched ballistic missile and would not be covered by the INF Treaty, even if it flew to less than 5,500 kilometers in numerous subsequent tests.[34]

The State Department amended this answer in a letter to the Foreign Relations Committee after the hearings; it stated that the missile could be considered a new type of missile covered by the INF Treaty if it was tested at strategic range "with a configuration (booster stages, post-boost vehicle, RV's) that is unlike that used for remaining tests of the system at INF ranges." In other words, if the Soviet Union had tested a missile with only a single warhead, which would have allowed it to fly to a longer range, but then tested it at a reduced range with more warheads, it could be considered to be an intermediate-range missile in the multiple warhead configuration. The letter did not indicate, however, whether the Soviet Union agreed with this interpretation. Moreover, the letter reiterated that a ground-launched ballistic missile tested to ICBM ranges and then tested to INF ranges *in the same configuration* clearly would not be limited by the treaty.[35]

Others questioned whether the Soviet Union would be able to use longer-range strategic land-based and sea-based ballistic missiles to attack targets in Europe after it eliminated its INF systems.[36] Secretary of Defense Frank Carlucci responded to these concerns in his testimony before the Senate Foreign Relations Committee. He agreed when Senator Sarbanes asked if "the Soviets could use other weapons to hit Europe" after they eliminated their INF missiles. He replied that "they could, with some disruption to their programming, retarget their strategic systems on Europe." He also indicated that the United States could do the same thing because there was "nothing in the treaty that prevents retargeting."[37] Former Secretary of State Henry Kissinger made a similar point in his testimony, noting that Soviet "ICBMs, SLBMs, and airplanes can carry out the missions assigned to the SS-20s."[38]

U.S. Concerns with Russian Compliance

The United States officially charged Russia with violating the INF Treaty in late July 2014, when the State Department released the 2014 edition of its report *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments* (the Compliance Report). At the same time, President Obama sent a letter to President Putin notifying him of the finding in the Compliance Report and suggesting that the two countries meet to discuss steps that Russia could take to come back into compliance with the Treaty.[39] According to press reports, Administration officials had first raised U.S. concerns with Russia during discussions held in May 2013, and had addressed the issue in subsequent meetings. The two sides met again, in September 2014, after the release of the Compliance Report. The State Department reported

[34] U.S. Congress, Senate Committee on Armed Services, *NATO Defense and the INF Treaty*, Hearing, 100th Cong., 2nd sess., February 1988, S.Hrg.100-493 (Washington: GPO, 1988), p. 371.

[35] U.S. Congress, Senate Committee on Foreign Relations, *The INF Treaty, Part 5*, Hearing and Markup, 100th Cong., 2nd sess., March, 1988, S.Hrg. 100-522 (Washington: GPO, 1988), p. 72.

[36] Several witnesses highlighted this concern during their testimony before the committee. For example, Dr. William Schneider argued that the Soviet Union could reduce the range of its SS-25 ICBM using a technique called "thrust termination." He also noted that the Soviet Union had already used this technique to give a variable range to the older SS-11 ICBM. See U.S. Congress, Senate Committee on Foreign Relations, *The INF Treaty, Part 3*, Hearing, 100th Cong., 2nd sess., February 19, 1988, S.Hrg. 100-522 (Washington: GPO, 1988), pp. 189-190.

[37] U.S. Congress, Senate Committee on Foreign Relations, *The INF Treaty, Part 2*, Hearing, 100th Cong., 2nd sess., February 1, 1988, S.Hrg. 100-522 (Washington: GPO, 1988), pp. 14-15.

[38] U.S. Congress, Senate Committee on Foreign Relations, *The INF Treaty, Part 4*, Hearing, 100th Cong., 2nd sess., February 23, 1988, S.Hrg. 100-522 (Washington: GPO, 1988), p. 72.

[39] Michael Gordon, "U.S. Says Russia Tested Cruise Missile, Violating Treaty," *New York Times*, July 28, 2014.

that the two sides had a "useful exchange of views" during that meeting, but that Russia had failed to "assuage" U.S. concerns.[40] Russia, for its part, complained that the United States did not offer any details to back up its accusations and, as it had in previous meetings, denied that it had violated the INF Treaty.[41]

The Obama Administration repeated its accusation of Russian noncompliance in the 2015 edition of the State Department Compliance Report. This report added a little detail to the 2014 version, noting the "United States determined the cruise missile developed by the Russian Federation meets the INF Treaty definition of a ground-launched cruise missile with a range capability of 500 km to 5,500 km, and as such, all missiles of that type, and all launchers of the type used to launch such a missile, are prohibited under the provisions of the INF Treaty." While Administration officials continue to withhold details about either the missile or the data used to determine that it is a violation, they have said specifically that the United States is "talking about a missile that has been flight-tested as a ground-launched cruise-missile system to these ranges that are banned under this treaty."[42]

The Administration repeated its accusation of testing of a ground-launched cruise missile in the 2016 and 2017 versions of the State Department Compliance Report. Both reports, again, declined to provide details about the offending missile. However, the 2017 report, in response to Russian assertions that the United States lacked proof of such a violation, states that the United States has provided "more than enough information for the Russian side to identify the missile in question." This includes "information pertaining to the missile and the launcher, including Russia's internal designator for the mobile launcher chassis and the names of the companies involved in developing and producing the missile and launcher and; information on the violating GLCM's test history, including coordinates of the tests and Russia's attempts to obfuscate the nature of the program." The United States has also provided Russia with information showing that the "violating GLCM has a range capability between 500 and 5,500 kilometers" and that, contrary to much public speculation, it is "distinct from the R-500/SSC-7 GLCM or the RS-26 ICBM."[43]

In October 2016, press reports for October 2016 indicated that the Obama Administration believed Russia was moving toward deployment of the new missile, because it had begun to produce the missile in numbers greater than what is needed for a test program.[44] This was followed, in February 2017, by reports in the *New York Times* stating that Russia had begun to deploy a new ground-launched cruise missile, in violation of the 1987 Intermediate Range Nuclear Forces Treaty.[45] General Paul Selva, the vice chairman of the Joint Chiefs of Staff, confirmed this deployment during testimony before the House Armed Services Committee on

[40] U.S. Department of State, *U.S.-Russia INF Treaty Compliance Meeting in Moscow*, Media Note, Office of the Spokesperson, Washington, DC, September 11, 2014, http://www.state.gov/r/pa/prs/ps/2014/09/231490.htm.

[41] Thomas Grove, "Russia says dissatisfied with U.S. talks over arms treaty concerns," *Reuters*, September 11, 2014, http://www.reuters.com/article/2014/09/11/russia-usa-arms-talks-idUSL5N0RC3XH20140911.

[42] Mike Eckel, "Impasse Over U.S.-Russia Nuclear Treaty Hardens As Washington Threatens Countermeasures," *RadioFreeEurope/RadioLiberty*, September 15, 2015.

[43] U.S. Department of State, *Adherence to and Compliance With Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, Report, Washington, DC, April 2017, p. 13-14, https://www.state.gov/documents/organization/270603.pdf.

[44] Michael R. Gordon, "Russia is Moving Ahead With Missile Program that Violates Treaty, U.S. Offiicals Say," *New York Times*, October 19, 2016, http://www.nytimes.com/2016/10/20/world/europe/russia-missiles-inf-treaty.html.

[45] Michael R. Gordon, "Russia Deploys Missile, Violating Treaty and Challenging Trump," *New York Times*, February 14, 2017, https://www.nytimes.com/2017/02/14/world/europe/russia-cruise-missile-arms-control-treaty.html?_r=0.

March 8, 2017. General Selva noted that Russia had violated the "spirit and intent" of the treaty, that it had deliberately deployed the missile to pose a threat to NATO facilities, and that it showed no inclination to return to compliance with the treaty.[46]

Cruise Missile

As noted above, the 2014 Compliance Report determined that Russia is in "violation of its obligation not to possess, produce, or flight-test a ground-launched cruise missile (GLCM) with a range capability of 500 km to 5,500 km, or to possess or produce launchers of such missiles." The State Department repeated this finding in the 2015 and 2016 Compliance Reports. The reports did not provide any details about the missile or cite the evidence that the United States used to make its determination. However, according to press reports, the intelligence community has "high confidence" in its assessment that the cruise missile and flight tests in question constitute a "serious violation."[47]

Press reports have noted that the missile tests, which took place at the Kapustin Yar test site in western Russia, began in 2008, during the George W. Bush Administration.[48] The Obama Administration concluded that the tests constituted a violation of the INF Treaty and mentioned its concerns to Congress during briefings in late 2011. According to press reports, the Administration briefed U.S. allies in NATO about its concerns at a meeting of NATO's Arms Control, Disarmament and Non-Proliferation Committee in January 2014.[49] The reports also states that the Administration does not believe that Russia has deployed the missile yet.

Some in Congress have questioned why, if the tests began in 2008, the United States waited until 2011 to inform Congress, until 2013 to raise the issue with Russia, and until 2014 to inform U.S. allies of its concerns. They speculate that the Obama Administration may have hoped to conceal the issue so that it would not undermine its arms control agenda with Russia. For example, in February 2014, Senators Wicker and Ayotte asked whether the Administration delayed notifying Congress so that the issue would not interfere with the Senate debate on the ratification of the New START Treaty.[50]

On the other hand, it is possible that the Obama Administration held off on mentioning its concerns to Congress and U.S. allies until it had more information about the potential violation and more time to analyze that information. According to press reports, "it took years for American intelligence to gather information on Russia's new missile system."[51] Therefore, it seems likely that the United States could not make its determination, with high confidence, using data gathered during only one, or even a few, test launches.

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[46] Michael R. Gordon, "Russia Has Deployed Missile Barred by Treaty, U.S. General Tells Congress," *New York Times*, March 8, 2017, https://www.nytimes.com/2017/03/08/us/politics/russia-inf-missile-treaty.html. See, also, Robert Burns, "U.S. General Says Russia Has Deployed Banned Missile," *Defense News*, March 8, 2017, http://www.defensenews.com/articles/us-general-says-russia-has-deployed-banned-missile.

[47] Tom Collina, "Russia Breaches INF Treaty, U.S. Says," *Arms Control Today*, September 2014, pp. 31-33, http://legacy.armscontrol.org/act/2014_09/News/Russia-Breaches-INF-Treaty-US-Says.

[48] Ibid. See also, Michael Gordon, "U.S. Says Russia Tested Cruise Missile, Violating Treaty," *New York Times*, July 28, 2014.

[49] Michael Gordon, "U.S. Says Russia Tested Missile, Despite Treaty," *New York Times*, January 30, 2014.

[50] Diane Barnes, "Lawmaker Blasts Timing of Nominee Statements on Alleged Arms Control Breach," *Global Security Newswire*, February 25, 2014. See also, Josh Rogin, "Russia's Nuke Cheating Could Blow Up a Top Pentagon Pick," *The Daily Beast*, February 21, 2014.

[51] Ibid.

Under Secretary of State Rose Goetemoeller underscored this dynamic in testimony before the House Armed Services Committee in late 2015.[52] She noted that the United States knew that Russia had begun to test a cruise missile in 2008, but that "it was only over time did we accumulate the information that it was a ground launch cruise missile." The United States did not immediately assume Russia was testing a prohibited missile because "under the INF Treaty, sea launched cruise missiles and air launch cruise missiles are permitted, and there is no reason why the Russians could not have been developing during that period a new sea launched or air launched cruise missile." She repeated that "we didn't—simply did not know until later in the test series that it was a ground launch system."

Experts outside government have sought to determine which Russian missile constitutes the INF violation. Initial analyses focused on the Iskander system, a Russian missile launcher that can fire both ballistic missiles and cruise missiles. The ballistic missiles for the system have been tested to a maximum range of less than 500 kilometers and, therefore, do not raise treaty compliance issues. The R-500 cruise missile, which is also launched from an Iskander launcher, has been tested to a range of 360 kilometers but, according to some analyses, could have a maximum range "several times longer."[53] Contrary to much of the speculation,[54] however, it seems unlikely that the R-500 cruise missile is the source of the U.S. complaint. Obama Administration officials have stated that the R-500 cruise missile was not the missile in question,[55] and the 2017 version of the State Department Compliance Report indicates that the United States has provided Russia with information that demonstrates that the noncompliant cruise missile is distinct from the R-500 system.

Some have also suggested that the violation may have occurred if Russia tested an intermediate-range sea-launched cruise missile (SLCM), such as the SS-N-21 SLCM, from a land-based launcher. The INF Treaty allows land-based tests of SLCMs, as long as they are launched from a "fixed land-based launcher which is used solely for test purposes and which is distinguishable from GLCM launchers." If Russia had launched a SLCM with a range greater than 500 kilometers from any other type of launcher, the test would constitute a violation of the treaty. Members of Congress raised this possibility during a joint hearing of the House Foreign Affairs Subcommittee on Europe, Eurasia and Emerging Threats and Subcommittee on Terrorism, Nonproliferation, and Trade in April 2014. For example, Representative Brad Sherman said that Russia may have tested a missile for "sea-based purposes" on "what appears to be an operational, useable ground-based launcher."[56] Press reports from Russia have also speculated about this. An October 2014 article mentioned that Russia had conducted a 2,600-kilometer test of a cruise missile in 2013, and quoted a source in Russia's Defense Ministry as saying the missile was a "naval cruise missile" tested from a "ground-based platform" rather than a ship to save money

[52] U.S. Congress, House Committee on Armed Services, Subcommittee on Strategic Forces, *Russian Arms Control*, Hearing, 114th Cong., 2nd sess., December 1, 2015.

[53] Nikolai Sokov and Miles A. Pomper, "Is Russia Violating the INF Treaty," *The National Interest*, February 11, 2014, http://nationalinterest.org/commentary/russia-violating-the-inf-treaty-9859?page=show.

[54] See, for example, William Schneider, "Russia's Treaty Violations & Nuclear Instability," *Real Clear Defense*, September 15, 2014, http://www.realcleardefense.com/articles/2014/09/15/russias_treaty_violations__nuclear_instability_107442.html.

[55] Mike Eckel, "Impasse Over U.S.-Russia Nuclear Treaty Hardens As Washington Threatens Countermeasures," *RadioFreeEurope/RadioLiberty*, September 15, 2015.

[56] U.S. Congress, House Committee on Foreign Affairs, Subcommittee on Europe, Eurasia, and Emerging Threats, *U.S.- Russia Nuclear Arms Negotiations*, Hearing, 113th Cong., 2nd sess., April 29, 2014, http://www.cq.com/doc/congressionaltranscripts-4468918?11.

and simplify the collection of data on the test.[57] This explanation resurfaced in early October 2015, after Russia used its new Kalibr-NK sea-launched cruise missiles in its attacks against targets in Syria. These cruise missiles, which were launched from ships deployed in the Caspian Sea, traveled to ranges of more than 1,500 km, which clearly exceeds the range permitted by the INF Treaty. So, according to one analyst, "if this missile was ever test-launched from a mobile land-based launcher, it would be considered GLCM for the purposes of the INF Treaty and this test would be a treaty violation."[58]

This explanation, however, also seems imperfect. It seems to presume that the violation occurred during a single test, while the timeline discussed above could signify that the United States collected data across several tests. Moreover, there is no evidence in the public press that Russian officials have offered this type of explanation in the several meetings where the United States has raised its concerns. As was noted by Under Secretary of State Rose Goetmoeller—in a joint hearing of the House Armed Services Committee's Subcommittee on Strategic Forces, and the House Foreign Affairs Committee's Subcommittee on Terrorism, Nonproliferation and Trade—Russia has offered no explanation for the tests in question and has, instead, "been unwilling to acknowledge its violation or address our concerns."[59] In addition, U.S. officials have repeatedly referred to the violation as a test of a ground-launched cruise missile, lending less credence to the view that the United States might have misidentified tests of a sea-launched missile. Moreover, Rose Goetmeoller stated, specifically, in an article published in September 2015, that this is not a technical violation, as is assumed by the theory that the missile is a SLCM tested from a GLCM launcher.[60]

Beginning in 2015, press reports identified another possible candidate for the suspect missile. An article published in late September 2015 noted that Russia had conducted another test of its new GLCM in on September 2.[61] According to this article, the missile, which it identified as the SSC-X-8 cruise missile, did not fly to a range beyond the INF limit. However, it cited officials familiar with the test who claimed that the missile had an "assessed range" of "between 300 miles and 3,400 miles," giving it the capability to fly to ranges in excess of those allowed under the INF Treaty. The article also claimed that "an earlier flight test of the missile prompted the administration, backed by U.S. intelligence agencies, to declare the system a breach of the INF treaty."

The Obama Administration did not comment on the allegations in 2015, but press reports from February 2017 have identified the SSC-X-8 cruise missile as the system that Russia deployed in December 2016; the designation is now the SSC-8, with the X dropped because the missile is no longer experimental.[62] In late November 2017, the Trump Administration identified the Russian designator for the missile as the 9M729. Little is known about the missile's specific

[57] Dmitriy Litovkin, "U.S. Complaints About Potential Deployment of Nuclear Weapons in Crimea Deemed Groundless," *Vzglyad Online*, October 21, 2014.

[58] Pavel Podvig, "Syria strikes, Kalibr-NK, and the INF treaty," *Russian Strategic Nuclear Forces Forces*, October 7, 2015, http://russianforces.org/blog/2015/10/syria_strikes_kalibr-nk_and_th.shtml.

[59] Michael Gordon, "Pentagon to Press Russia on Arms Pact Violation," *New York Time*, December 11, 2014.

[60] Mike Eckel, "Impasse Over U.S.-Russia Nuclear Treaty Hardens As Washington Threatens Countermeasures," *RadioFreeEurope/RadioLiberty*, September 15, 2015.

[61] Bill Gertz, "Russia Again Flight Tests Illegal INF Cruise Missile," *Washington Free Beacon*, September 28, 2015, http://freebeacon.com/national-security/russia-again-flight-tests-illegal-inf-cruise-missile/.

[62] Thomas Gibbons-Neff, "This is the Ground-Launched Cruise Missile that Russia has Reportedly Just Deployed," *Washington Post*, January 15, 2017, https://www.washingtonpost.com/news/checkpoint/wp/2017/02/15/this-is-the-ground-launched-cruise-missile-that-russia-has-reportedly-just-deployed/?utm_term=.86c051d79c9d.

characteristics or the observed tests that led the United States to conclude the missile violated the INF Treaty, although some speculate that it may be a ground-based version of the Kalibr sea-launched cruise missile.

Ballistic Missile

Some analysts outside government also contend that Russia has violated the INF Treaty with the development of a new land-based ballistic missile, known as the RS-26, because Russia has tested this missile to ranges below 5,500 kilometers.[63] Other analysts dispute this conclusion, noting that Russia has also tested the missile to more than 5,500 kilometers, which would place it outside INF range and characterize it as a long-range, intercontinental ballistic missile (ICBM).[64] The Obama Administration did not mention this missile in the 2014 Compliance Report, possibly indicating that it either does not consider the missile to be an INF violation or does not have sufficient information to draw a conclusion. The Trump Administration, in the 2018 Compliance Report, specifically noted that the Russian GLCM tested in violation of the INF Treaty "is distinct from the ... RS-26 ICBM."[65] Nevertheless, this missile remains in issue in discussions about the INF Treaty.

According to unclassified reports, Russia conducted four flight tests of the RS-26 missile. Two of these flight tests—one that failed in September 2011 and one that succeeded in May 2012—flew from Plesetsk to Kura, a distance of approximately 5,800 kilometers (3,600 miles). The second two tests—in October 2012 and June 2013—were both successful. In both cases the missile flew from Kapustin Yar to Sary-Shagan, a distance of 2,050 kilometers (1,270 miles).[66] Reports indicate that all four tests were conducted with "solid-propellant missiles launched from a mobile launcher." The missiles in the first three tests reportedly carried a single warhead, while the last test carried a "new combat payload" that may have consisted of multiple warheads.[67]

Russian officials have claimed that the RS-26 missile is an ICBM. At the time of the first test, in September 2011, an official Russian statement indicated that the failed missile was a part of a development program for a new "fifth generation ICBM." Russian officials continued to refer to the new missile as an ICBM after the two tests from Kapustin Yar to Sary-Shagan. According to General-Colonel Zarudnitskiy, the head of the Main Operational Directorate of Russia's General

[63] Bill Gertz, "Russian aggression: Putin violating nuclear missile treaty," *The Washington Free Beacon*, June 25, 2013. See also, John R. Bolton and Paula A. DeSutter, "Russian Roulette: Obama's Plan for nuclear reductions is letting Russia get away with murder," *Foreign Policy*, June 21, 2013; John Bolton and John Yoo, "An Obsolete Treaty Even Before Russia Cheated," *Wall Street Journal Europe*, September 11, 2014.

[64] Pavel Podvig, "New Russian Missile and the INF Treaty," *Russian Strategic Nuclear Forces*, July 4, 2013, http://russianforces.org/blog/2013/07/new_russian_missile_and_inf_tr.shtml. See also, Hans Kristensen, "Russian Missile Test Creates Confusion and Opposition in Washington," *FAS Strategic Security Blog*, July 3, 2013, http://blogs.fas.org/security/2013/07/yars-m/; Stephen Pifer, Allegations of Russian Intermediate-Range Nuclear Forces Treaty Violations—Where's the Beef? *Brookings Up Front*, July 16, 2013, http://www.brookings.edu/blogs/up-front/posts/2013/07/16-allegations-russian-intermediate-range-nuclear-forces-treaty-violations-pifer.

[65] U.S. Department of State, *Adherence to and Compliance With Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, Report, Washington, DC, April 2018, p. 10, https://www.state.gov/documents/organization/280774.pdf.

[66] Hans Kristensen, "Russian Missile Test Creates Confusion and Opposition in Washington," *FAS Strategic Security Blog*, July 3, 2013, http://blogs.fas.org/security/2013/07/yars-m/.

[67] Pavel Podvig, "Too many missiles - Rubezh, Avangard, and Yars-M," *Russian Strategic Nuclear Forces*, July 6, 2013, http://russianforces.org/blog/2013/07/too_many_missiles_-_rubezh_ava.shtml.

Staff, all four launches were part of the series of tests with "a new intercontinental-range ballistic missile with improved accuracy."[68]

Although Russian statements describing the RS-26 as a long-range ICBM cannot serve as definitive proof of the missile's intended range and targets, the existence of a test to more than 5,500 kilometers does seem to place it outside the range of missiles banned by the INF Treaty. Nevertheless, several observers have concluded that, even if it is not a technical violation, the missile's intermediate-range tests could still provide evidence of Russia's intent to circumvent the treaty limits by deploying a new missile optimized for attacks on targets in the INF-range.[69] Ultimately, the question of whether the missile should raise compliance concerns, and, more specifically, whether it represents an actual violation of the INF Treaty, may rest on a more detailed, and possibly classified, analysis of the nature of the missile's payload and the rationale for the shorter-range tests.

For example, several analysts have speculated that Russia tested the RS-26 on flights from Kapustin Yar to Sary-Shagan because the missile may have carried a payload that would help it evade ballistic missile defenses. Russia's Deputy Prime Minister, Dmitry Rogozin, reportedly called the missile a "killer of air defense" after the June 2013 test flight.[70] Several press reports also indicated that it was designed to be able to evade and penetrate ballistic missile defense systems. For example, in May 2012, an official from Russia's missile industry stated that the missile uses "a new fuel making it possible to reduce the time of the missile engines' operation during the boost phase. This makes such a missile more capable of overpowering a missile defense system."[71] Sary-Shagan serves as the test site for Russia's ballistic missile defense radars, so if Russia wanted to determine whether these radars could identify and track the new missile, it would need to fire the missile toward Sary-Shagan. Russia has also launched its older SS-25 ICBMs from Kapustin Yar to Sary-Shagan in recent years, according to the Russian Ministry of Defense, to gather information that could be used to develop "effective means for overcoming missile defense."[72]

If this rationale is consistent with data evident during the missile's flight test, then it might not be considered a violation of the INF Treaty. However, other explanations for the shorter-range tests are possible. As noted above, all long-range missiles can fly to targets at less than their maximum range.[73] If a missile were initially tested with a single, light warhead, but then flew with a heavier payload, or with a greater number of warheads, or if it were flown on a flatter, depressed trajectory or higher, lofted trajectory, it would fly to a shorter range. Some have speculated that the RS-26 may have flown with a single warhead in its initial tests then carried multiple warheads in later tests. Russian press reports indicated that this was a possibility. For example, after the May 2012 test, the Russian press reported that the missile was "a further development on the

[68] Pavel Podvig, "Too many missiles - Rubezh, Avangard, and Yars-M," *Russian Strategic Nuclear Forces,* July 6, 2013, http://russianforces.org/blog/2013/07/too_many_missiles_-_rubezh_ava.shtml.

[69] See, for example, John R. Bolton and Paula A. DeSutter, "Russian Roulette: Obama's Plan for nuclear reductions is letting Russia get away with murder," *Foreign Policy,* June 21, 2013, http://www.foreignpolicy.com/articles/2013/06/21/russian_roulette_obama_nukes_john_bolton?page=full. See also, Mark B. Schneider, "Russia's Arms Control Violations," *Washington Times,* July 2, 2013.

[70] Anna Zakatnova, "Vice Premier Rogozin's Defense Policy Lecture to United Russia Activists," *Rossiyskaya Gazeta Online,* June 7, 2013.

[71] "Russia Test-fires New Strategic Missile From Plesetsk Space Center," *Interfax,* May 23, 2012.

[72] Hans Kristensen, "Russian Missile Test Creates Confusion and Opposition in Washington," *FAS Strategic Security Blog,* July 3, 2013, http://blogs.fas.org/security/2013/07/yars-m/; Stephen Pifer, Allegations of Russian Intermediate-Range Nuclear Forces Treaty.

[73] "Russia Test-fires New Strategic Missile From Plesetsk Space Center," *Interfax,* May 23, 2012.

Topol-M and Yars strategic missiles and is supposed to be armed with a multiple independently targetable reentry vehicle warhead." The Topol-M is a single warhead missile, while the Yars is a variation of the Topol that carries multiple warheads. But both fly to much longer ranges than the 5,800 kilometers demonstrated by the RS-26 in its second flight test. As a result, it is possible that the payload for the RS-26, particularly during its shorter-range tests, contained a substantially different payload than the missile tested to the longer range.

If a change in the payload is evident in the data generated during the flight tests, then it may yet be determined to be a violation. Moreover, even if the missile does not violate the terms of the INF Treaty, it could allow Russia to circumvent the limits in the agreement. The United States has not, at this time, concluded that this ballistic missile violates the INF Treaty. In addition, the 2017 and 2018 Compliance Reports indicate that the noncompliant cruise missile at issue in the U.S. allegations is not the RS-26 ICBM.

Russian Interests in Intermediate-Range Missiles

Many analysts agree that Russia has been uncomfortable with the limits in the INF Treaty for nearly a decade. Some speculate that the Russian military has been interested in replacing its lost capabilities since shortly after the treaty was signed so that it could maintain a full complement of missile capabilities, regardless of the threat environment. According to some analysts, Russia has been pursuing a number of programs, including some focused on long-range cruise missiles that seem to seem to "pay no attention to the treaty limits."[74]

Others highlight comments from Russian officials that point to emerging threats to Russian security from countries along Russia's periphery that possess their own intermediate-range missiles. Former Secretary of Defense Robert Gates notes in his recent memoir that Sergei Ivanov, a former Russian Minister of Defense, raised this issue with him in 2007. Ivanov, and others in subsequent comments, have noted that the United States and Russia are the only two countries in the world that cannot deploy intermediate-range missiles. Ivanov told Gates that Russia wanted to withdraw from the treaty so that it could deploy these missiles "to counter Iran, Pakistan, and China."[75] Others have echoed this concern in recent years. Anatoly Antonov, Russia's current Deputy Minister of Defense, said in an interview in August 2014, "Nowadays almost 30 countries have such [intermediate-range] missiles in their arsenals. The majority of them are in close proximity to Russia."[76] Others have been more specific, noting that countries from around the periphery of Russia, including North Korea, China, India, and Pakistan, all possess intermediate-range missiles.[77]

In 2007, Russia sought to address this concern by submitting a proposal to the United Nations that would convert the INF Treaty into a multilateral treaty that could be signed by all states with intermediate-range and shorter-range missiles. The United States issued a joint statement with Russia supporting this effort.[78] But the proposal did not win any further adherents. Russia may

[74] Pavel Podvig, *Don't Help Russia Destroy the INF Treaty*, European Leadership Network, Geneva, August 28, 2014, http://www.europeanleadershipnetwork.org/dont-help-russia-destroy-the-inf-treaty_1817.html.

[75] Robert M. Gates, *Duty: Memoirs of A Secretary at War* (New York: Alfred A. Knopf, 2014), p. 154.

[76] Yuriy Gavrilov, "Russian Deputy Defense Minister Says INF Allegations Part of US 'Anti-Russian' Spin Campaign," *Rossiyskaya Gazeta*, August 14, 2014.

[77] Petr Topychkanov, *Is Russia Afraid of Chinese and Indian Missiles?* Carnegie Moscow Center, Moscow, November 3, 2014, http://carnegie.ru/commentary/?fa=57100.

[78] U.S. Department of State, Joint U.S.-Russian Statement on the Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles at the 62nd Session of the UN General Assembly, New York, NY, October 25, 2007,

have then focused its attention on the development of its own INF missiles. Recent reports that Russia will deploy the RS-26 missile at Irkutsk, which places it out of range of Europe but within range of China and other nations to its south and east, support the view that Russia may be developing INF-range missiles to address threats outside of Europe.[79]

Russian officials have also pointed to threats from NATO as the source of Russia's interest in escaping from the limits of the INF Treaty. Often, these threats have been linked to U.S. and NATO plans to deploy missile defense assets in Europe. For example, in 2007, when the Bush Administration was pursuing plans to deploy missile defense interceptors in Poland and radar in the Czech Republic, President Putin threatened to withdraw from the INF Treaty so that he could deploy missiles with the range needed to attack these sites.[80] Although the Obama Administration cancelled the Bush Administration's planned deployments, it still plans to deploy missile defense interceptors in Poland and Romania as a part of its missile defense architecture known as the European Phased Adaptive Approach (EPAA). The United States insists that these interceptors will pose no threat to Russia's strategic nuclear forces, but Russia has continued to threaten to deploy intermediate-range missiles to target these sites. Missiles in the range of 700-1,000 kilometers would be able to reach deployment sites in Poland and Romania, particularly if Russia moved launchers into its newly annexed Crimean territory.

The United States has completed the installation of the Aegis Ashore site in Romania; it was certified as operational in May 2016. Russia continues to argue that this site can threaten Russian strategic forces and to insist that the launchers violate the INF Treaty because they could launch offensive cruise missiles. While it has not made a direct connection recently, it is possible that Russia may have used the operational status of the Aegis Ashore site as an excuse to prepare for the deployment of its treaty-noncompliant cruise missile.

Russia may also view new intermediate-range missiles as a response to challenges it faces from NATO's advanced conventional capabilities, especially as NATO has enlarged eastward into nations close to Russia's western border. Russian defense and security documents have not only emphasized that Russia views NATO enlargement as a key threat to its security, they have also highlighted the need for Russia to be able to deter NATO's use of precision conventional weapons, such as the U.S. Navy's Tomahawk sea-launched cruise missiles.[81] Russia already has a wide range of conventional and nuclear capabilities that can threaten U.S. allies in NATO. For example, its shorter-range systems, like the Iskander missiles, which can carry either conventional or nuclear warheads, can reach into Poland and the Baltic states, particularly if they are deployed in Belarus or Kaliningrad. But they cannot reach across Eastern Europe, particularly if they are deployed further east in Russia. As a result, Russia may believe that land-based intermediate-range cruise missiles could fill a gap in Russia's conventional capabilities. Missiles at the lower end of INF range could reach into eastern NATO allies, covering areas that some have noted could serve as staging grounds for NATO strikes against Russia.[82] Systems in the 2,000 kilometer range could reach Germany, and those of 3,000 kilometer range could reach most

http://2001-2009.state.gov/r/pa/prs/ps/2007/oct/94141.htm.

[79] Pavel Podvig, "First RS-26 to be deployed in Irkutsk in 2015," *Russian Strategic Forces*, July 1, 2014, http://russianforces.org/blog/2014/07/first_rs-26_to_be_deployed_in.shtml.

[80] "Putin Threatens Withdrawal from Cold War Nuclear Treaty," *The Guardian*, October 12, 2007.

[81] For the text of Russia's 2010 Military Doctrine, see "The Military Doctrine of the Russian Federation," approved February 5, 2010, at http://carnegieendowment.org/files/2010russia_military_doctrine.pdf.

[82] Nikolai Sokov and Miles A. Pomper, "Is Russia Violating the INF Treaty?" *The National Interest*, February 11, 2014, http://nationalinterest.org/commentary/russia-violating-the-inf-treaty-9859?page=show.

other NATO states.[83] As Yuriy Baluyevskiy, the former head of the Russian General Staff, said in a September 2014 interview, INF-range missiles would allow Russia "to erect a system of national security assurance" with missiles that could target cities in Poland, Romania, and the Baltic and, as a result, "cool the heads of these states' leaders."

Some have suggested that Russia might use intermediate-range ballistic missiles to threaten NATO capitals at a greater distance from Russia, in part, to threaten the cohesion of the alliance.[84] Although these capitals are still within range of Russian bombers and longer-range missiles, the nuclear threat to these cities eased considerably after the Soviet Union eliminated its SS-20 missiles. With these missiles eliminated, there was little risk the capitals would face nuclear retaliation if they invoked their Article V commitment to defend the allies closer to Russia. But, with a new threat to these more distant allies, some may question the strength of that commitment. In such a circumstance, the allies located closer to Russia might be more inclined to give in to coercion or intimidation from Russia.[85] Although NATO can take steps to offset this impression and strengthen alliance cohesion, Russia's new intermediate-range missiles could introduce a dynamic similar to the one NATO faced during the Cold War, when some questioned whether the United States would come to the defense of its European allies, knowing that its own territory could be threatened by Soviet long-range missiles.

Russian Concerns with U.S. Compliance

Russian officials claim that three current and planned U.S. military programs violate the INF Treaty. They have raised at least one of these issues in diplomatic exchanges for the past several years, but have become more insistent on addressing these issues in recent months, following the State Department's publication of the 2014 Compliance Report.[86] The three programs identified by Russia include (1) the use of intermediate-range missiles as targets during tests of U.S. missile defense systems; (2) the use of drones as weapons delivery vehicles; and (3) the planned deployment of missile defense interceptors on land in the Navy's MK-41 missile launchers.

DOD reviews U.S. weapons programs to ensure that they are consistent with all U.S. arms control, nonproliferation, and disarmament commitments. These reviews have found that none of these programs constitute a violation and that the United States is in full compliance with its INF obligations. The United States addressed Russia's concerns during the meeting on INF compliance in September 2014, providing Russia with treaty-based explanations to demonstrate how the programs are compliant with U.S. obligations under the INF Treaty.[87] However, Russian officials continue to insist that the United States has violated the INF Treaty.

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[83] Jacek Durkalec, *Russia's Violation of the INF Treaty: Consequences for NATO*, The Polish Institute of International Affairs, Bulletin, Warsaw, August 13, 2014.

[84] Jeffrey Lewis, "Has Russia broken its pledge not to test medium-range nukes? The answer isn't as clear as you might think." *Foreign Policy*, April 25, 2014, http://www.foreignpolicy.com/articles/2014/04/25/nuclear_semantics_russia_inf_treaty_missiles_icbm.

[85] Jacek Durkalec, *Russia's Violation of the INF Treaty: Consequences for NATO*, The Polish Institute of International Affairs, Bulletin, Warsaw, August 13, 2014.

[86] Moscow Ministry of Foreign Affairs, Comments on the report of the U.S. Department of State on Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments, Moscow, August 12, 2014, http://www.mid.ru/brp_4.nsf/0/D2D396AE143B098144257D2A0054C7FD.

[87] U.S. Congress, House Committee on Foreign Affairs, Subcommittee on Terrorism, Nonproliferation, and Trade, and House Committee on Armed Services, Subcommittee on Strategic Forces, *Joint Hearing on Russian Arms Control Cheating and the Administration's Responses*, Hearing, 113th Cong., 2nd sess., December 10, 2014, Prepared Statement of Honorable Brian P. McKeon, Principal Deputy Under Secretary of Defense, p. 9. See, also Army Sgt. 1st Class

Missile Defense Targets

The United States has designed and produced numerous target missiles for use during its tests of missile defense interceptors. Several of these targets use modified engines from existing types of ballistic missiles, including retired Minuteman II long-range missiles. One such missile, known as the Hera, flew to ranges of around 1,000 kilometers.

Russia claims that target missiles using Minuteman II motors violate the INF Treaty because they "have similar characteristics to intermediate-range missiles" and can fly to ranges covered by the INF Treaty.[88] Russian officials have also claimed that the United States may have used guidance components from Pershing missiles in some target missiles.[89] The United States reportedly disputed the Russian assertion in 2001, noting that the Hera missile was a "booster system" meant for research, not a weapons delivery system.[90] In December 2014, the Principal Deputy Under Secretary of Defense, Brian McKeon, raised the same point in testimony before subcommittees of the House Foreign Affairs and Armed Services Committees. He noted that the INF Treaty "explicitly permits the use of older booster stages for research and development purposes, subject to specific Treaty rules. This includes their use as targets for missile defense tests." The treaty bans land-based intermediate-range missiles that have been "flight-tested or deployed for weapons delivery."[91] The target missiles have never been equipped with warheads and, therefore, have never been flight tested or deployed for weapons delivery. In addition, the use of guidance systems from an eliminated missile does not violate the INF Treaty, as the text allows the parties to remove guidance sets prior to missile elimination and to reuse them in systems not limited by the treaty.

Armed Drones

The United States operates several types of unmanned aerial vehicles—drones—to perform intelligence, surveillance, and reconnaissance missions. Some drones have been equipped to carry precision-guided weapons to attack ground targets. While the sizes and ranges of U.S. drones vary greatly, some, including those that can deliver weapons, can fly to ranges between 500 and 5,500 kilometers.

Russia claims that U.S. armed drones violate the INF Treaty because they are consistent with the treaty's definition of a ground-launched cruise missile. The treaty defines a cruise missile as "an unmanned, self-propelled vehicle that sustains flight through the use of aerodynamic lift over

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Tyrone C. Marshall Jr, "Russian Arms Control Violation Prompts Joint Staff Assessment," *DoD News, Defense Media Activity*, December 11, 2014.

[88] Moscow Ministry of Foreign Affairs, Comments on the report of the U.S. Department of State on Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments, Moscow, August 12, 2014, http://www.mid.ru/brp_4.nsf/0/D2D396AE143B098144257D2A0054C7FD.

[89] Gennady Khromov, *The Use of "Hera" Missile Violates the INF Treaty*, Center for Arms Control, Energy, and Environmental Studies, Moscow, November 20, 2000.

[90] Nuclear Threat Initiative, *INF Treaty*, Fact Sheet, http://www.nti.org/treaties-and-regimes/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/.

[91] U.S. Congress, House Committee on Foreign Affairs, Subcommittee on Terrorism, Nonproliferation, and Trade, and House Committee on Armed Services, Subcommittee on Strategic Forces, *Joint Hearing on Russian Arms Control Cheating and the Administration's Responses*, Hearing, 113th Cong., 2nd sess., December 10, 2014, Prepared Statement of Honorable Brian P. McKeon, Principal Deputy Under Secretary of Defense, p. 9.

most of its flight path." It further specifies that a ground-launched cruise missile banned by the treaty means "a ground-launched cruise missile that is a weapon-delivery vehicle."

While it is true that drones sustain flight through the use of aerodynamic lift, they do not necessarily meet the treaty's definition of unmanned and self-propelled. Although drones do not have pilots on board, they are piloted remotely, with pilots based at facilities on the ground. Moreover, although armed drones can deliver weapons to targets, they are platforms that carry weapons, not weapons themselves. Unlike a cruise missile with a separate launcher that remains behind after releasing the missile, a drone is self-contained, and takes off and lands like an aircraft. Further, although cruise missiles are destroyed when delivering their payload, drones release their payload then return to base, like an aircraft. Principal Deputy Under Secretary of Defense Brian McKeon summed this up during recent congressional testimony when he noted that drones are not missiles, they are "two-way, reusable systems. The INF Treaty imposes no restrictions on the testing, production, or possession of two-way, reusable, armed UAVs."[92]

Land-Based Deployment of MK-41 Launchers

As a part of its European Phased Adaptive Approach (EPAA) for missile defense, the United States plans to deploy ballistic missile interceptors on land in Romania and Poland, in a construct known as Aegis Ashore. The site in Romania became operational in May 2016, as a part of phase 2 of the EPAA, while the site in Poland is scheduled for 2018, as a part of phase 3. According to the Missile Defense Agency, the United States will deploy SM-3 interceptor missiles at these sites in the same type of vertical launch system—the MK-41—used aboard Aegis ships. According to the U.S. Navy, the MK-41 vertical launch system (VLS) is a "multi-missile, multi-mission launcher" that can launch SM-2 interceptors and Tomahawk cruise missiles, along with a number of other systems.[93]

Russia claims that the MK-41 VLS will "be a flagrant violation" of the INF Treaty when it is based on land because it "can be used to launch intermediate-range cruise missiles."[94] This complaint seems to assume that the launchers will meet the treaty's definition of a ground-launched cruise missile (GLCM) launcher because they can launch Tomahawk sea-launched cruise missiles (SLCMs), even though they have never been tested or deployed with GLCMs. Mikhail Ulyanov, the director of the nonproliferation and arms control department of the Russian Foreign Ministry, repeated this concern on October 12, 2015, when he stated that the deployment of the MK-41 launchers in Romania would be "a massive breach of the INF Treaty."[95]

The INF Treaty defines a GLCM launcher as "a fixed launcher or a mobile land-based transporter-erector-launcher mechanism for launching a GLCM." A GLCM is defined "as a ground-launched cruise missile that is a weapon-delivery vehicle." These definitions are somewhat circular: if a missile has been launched from a ground-based launcher, it is a ground-launched missile, and if a launcher has launched a ground-launched missile, it is a GLCM launcher. One could argue that a sea-based missile, such as the Tomahawk, could be launched from land if its launcher were deployed on land. In that case, the launcher could be considered a

[92] Ibid., p. 9.

[93] United States Navy, *MK-41 VLS*, Fact File, Washington, DC, November 15, 2013, http://www.navy.mil/navydata/fact_display.asp?cid=2100&tid=550&ct=2.

[94] Moscow Ministry of Foreign Affairs, Comments on the report of the U.S. Department of State on Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments, Moscow, August 12, 2014, http://www.mid.ru/brp_4.nsf/0/D2D396AE143B098144257D2A0054C7FD.

[95] "Russia calls on U.S., Romania to give up plans to deploy MK-41 vertical launch systems - Foreign Ministry," *Interfax*, October 12, 2015.

ground-based launcher, even if it had never been tested with a ground-launched missile. This seems to be the source of Russia's complaint. However, even if it seems somewhat logical, it is not consistent with the INF Treaty's definition. The treaty specifies that the launcher must launch an intermediate-range GLCM, not any intermediate-range cruise missile, to qualify as a system banned by the treaty.

Moreover, U.S. officials have asserted that the version of the MK-41 system to be based in Romania and Poland will not be the same as the shipboard version that has been used to launch Tomahawk cruise missiles, even though it will use "some of the same structural components as the sea-based system."[96] According to some reports, the "electronics and software of the Aegis Ashore Mk-41 launcher are different than the ship-borne variant."[97] The Trump Administration reiterated this point in a fact sheet released by the State Department in December 2017. It noted that the Aegis Ashore system "is only capable of launching defensive interceptor missiles." The system uses "some of the same structural components as the sea-based Mk-41 Vertical Launch System" but it "is not the same launcher as the sea-based MK-41 Vertical Launch System." The system "lacks the software, fire control hardware, support equipment, and other infrastructure needed to launch offensive ballistic or cruise missiles such as the Tomahawk."[98]

This distinction would seem to undercut the Russian view that the launcher used in Aegis Ashore "can be used to launch intermediate-range cruise missiles." However, convincing Russia of this difference may be difficult. In past arms control agreements, the parties have mandated that similar systems with different purposes possess functionally related, observable differences. This is not required under the INF Treaty, and it is not clear at this time whether this will be the case for the land-based MK-41 launchers. As a result, even though the treaty definitions may not capture the system unless it actually launches a cruise missile from land, the United States may find it helpful, for political reasons, to take additional steps to address Russia's concerns and convince Russia that the system does not violate the INF Treaty.

Issues for Congress: The U.S. Response

The INF treaty is of unlimited duration, but it contains a withdrawal clause that states that each party shall "have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests." Russia may withdraw from the INF Treaty if it sees an emerging threat from intermediate-range missiles deployed in China or in other nations on its periphery, or if it believes it needs intermediate-range missiles to address perceived threats from NATO. On the other hand, Russia may try to remain a party to the treaty while developing new intermediate-range missile capabilities, in the hope of delaying a U.S. response. It could then withdraw later, after it had completed the development and testing of its new systems. Alternatively, Russia could continue to pursue its current course and hope that the United States withdraws from the treaty and frees Russia from existing limits. In either case, the United States may consider a number of options, either to address its

[96] U.S. Congress, House Committee on Foreign Affairs, Subcommittee on Terrorism, Nonproliferation, and Trade, and House Committee on Armed Services, Subcommittee on Strategic Forces, *Joint Hearing on Russian Arms Control Cheating and the Administration's Responses*, Hearing, 113th Cong., 2nd sess., December 10, 2014, Prepared Statement of Honorable Brian P. McKeon, Principal Deputy Under Secretary of Defense, p. 10

[97] Greg Thielman, *Moving Beyond INF Treaty Compliance Issues*, Arms Control Association, blog post, Washington, DC, September 5, 2014, http://armscontrolnow.org/2014/09/05/moving-beyond-inf-treaty-compliance-issues/#more-4502.

[98] U.S. Department of State, Bureau of Arms Control, Verification, and Compliance, *Refuting Russian Allegations of U.S. Noncompliance with the INF Treaty*, Fact Sheet, Washington, DC, December 8, 2017, https://www.state.gov/t/avc/rls/2017/276360.htm.

compliance concerns and encourage Russia to remain a party to the treaty or to respond to emerging security concerns if Russia withdraws from the treaty and deploys new intermediate-range ballistic or cruise missiles.

Options for Addressing Compliance Concerns

Engage in Diplomatic Discussions

According to press reports, the United States began to raise concerns about INF compliance with Russia during diplomatic meetings in 2013. Although not specified in the reports, it seems likely that the INF Treaty was only one of several issues discussed in these fora. The press reports note that Russia dismissed the U.S. concerns, stating that Russia had "investigated the matter and consider[s] the case to be closed."[99] U.S. officials stated that Russia's answer "was not satisfactory to us" and indicated that it would continue to press the case in future meetings.[100] With Russia unwilling to even acknowledge that it has conducted tests that could raise INF concerns, it seems unlikely that this level of engagement will succeed in resolving the issue.

The United States raised the profile of the issue in July 2014 when the State Department released the 2014 Compliance Report. According to press reports, President Obama sent a letter to President Putin that "underscored his interest in a high-level dialogue with Moscow with the aim of preserving the 1987 treaty and discussing steps the Kremlin might take to come back into compliance." At the same time, Secretary of State John Kerry called the Russian Foreign Minister, Sergey Lavrov, to emphasize the same point.[101] The two nations then held a meeting on September 11, 2014, focused exclusively on the two nations' concerns with INF compliance.

As noted above, the State Department reported that Russia had failed to "assuage" U.S. concerns during the September 2014 meeting.[102] The Russian participants denied that Russia had violated the treaty, complained about the lack of evidence provided by the United States, and accused the United States itself of violating the treaty. The State Department indicated, in its 2016 Annual Report on Compliance with Arms Control Agreements, that "the United States again raised concerns with Russia on repeated occasions" in 2015 and it will "continue to pursue resolution of U.S. concerns with Russia" in the future.[103] But Russia continued to refuse to address the issue and continued to deny that it has violated the treaty. In testimony before the Senate Foreign Relations Committee, Under Secretary of State Rose Gotemoeller stated that it has been "extraordinarily difficult" to address this issue "because the Russians simply have not wanted to engage in a way that would resolve this problem." She repeated that the United States is "committed to bringing them back into compliance with the INF Treaty and essentially recommitting to that treaty for the future."[104]

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[99] Michael Gordon, "U.S. Says Russia Tested Missile, Despite Treaty," *New York Times*, January 30, 2014.

[100] See the comments of Elaine Bunn, Assistant Secretary of Defense, Nuclear and Missile Defense Policy, U.S. Congress, Senate Committee on Armed Services, Subcommittee on Strategic Forces, *Nuclear Forces and Policy*, Hearing, 113th Cong., 2nd sess., March 2, 2014, http://www.cq.com/doc/congressionaltranscripts-4434334?10.

[101] Michael Gordon, "U.S. Says Russia Tested Cruise Missile, Violating Treaty," *New York Times*, July 28, 2014.

[102] U.S. Department of State, *U.S.-Russia INF Treaty Compliance Meeting in Moscow*, Media Note, Office of the Spokesperson, Washington, DC, September 11, 2014, http://www.state.gov/r/pa/prs/ps/2014/09/231490.htm.

[103] U.S. Department of State, *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, Washington, DC, April, 2016, http://www.state.gov/t/avc/rls/rpt/2016/255651.htm.

[104] U.S. Congress, Senate Committee on Foreign Relations, *The Administration's Nuclear Agenda*, Hearing, 114th Cong., 2nd sess., March 17, 2016.

At the same time, Under Secretary Gotemoeller indicated that the diplomatic engagement had some value. In testimony before the House Armed Services Committee in December 2015, she noted that Russia realizes that its "program has been exposed" and that it "is not free to pursue this effort unconstrained, as this would confirm for the world that Russia has been violating an agreement that has been a key instrument of stability and security for nearly three decades." As a result Russia still has not begun to deploy the new missile.

The Trump Administration has continued to pursue a diplomatic solution to the INF problem. In the State Department's 2018 Compliance Report, the Administration noted that "the United States remains open to discussing any and all ways to facilitate the Russian Federation's return to full and verifiable compliance." It also highlighted, in a fact sheet released in December 2017, that "the United States continues to seek a diplomatic resolution through all viable channels."[105]

While Russia continues to deny that it has violated the INF Treaty, some believe the ongoing diplomatic exchanges may help move the process forward by emphasizing the magnitude of the U.S. concerns and opening channels for future discussions that focus exclusively on the INF Treaty. Public discussions of compliance concerns—in the State Department Compliance Report, press reports, and congressional hearings—could reinforce the U.S. position and complicate Russia's efforts to simply dismiss the U.S. accusations.

With more attention focused on its programs, Russia might decide that it needs to explain why it seems to be testing INF-range missiles and whether it plans to deploy the cruise missile in question on land or at sea. Even if Russia agrees to discuss the status of its missile programs, it may not acknowledge that it has violated the treaty. Nevertheless, until Russia takes this first step of acknowledging U.S. concerns and offering an explanation, it could be nearly impossible for the two nations to agree on a solution.

Analysts outside government have suggested that the United States might provide Russia with a greater incentive to acknowledge, address, and possibly resolve this issue if it were to bring its allies into the discussion so that they could understand the implications of Russia's actions and raise their concerns with Russia directly. This would allow the violation to become "an issue between the Russian government and its neighbors" and not just an issue between Russia and the United States.[106] The United States has apparently already pursued this process with its NATO allies, providing briefings and holding discussions during NATO meetings. In the statement released after the summit in Wales in September 2014, the allies called on Russia "to preserve the viability of the INF Treaty through ensuring full and verifiable compliance."

The United States has taken additional steps to brief its NATO allies on the Russian violation and to encourage the allies to address this issue with Russia. The State Department's 2018 Compliance Report notes that NATO issued a public statement in December 2017 "affirming U.S. compliance with the Treaty" and urging Russia to address the serious concerns raised by its missile system "in a substantial and transparent way, and actively engage in a technical dialogue with the United States."

This approach might signal to Russia that NATO remains united in its concerns about Russia's activities and would likely remain united in its response if Russia attempts to use its new missiles to divide the alliance. On the other hand, a coordinated NATO response could backfire if Russia

[105] U.S. Department of State, Bureau of Arms Control, Verification, and Compliance, INF Treaty: At a Glance, Fact Sheet, Washington, DC, December 8, 2017, https://www.state.gov/t/avc/rls/2017/276361.htm.

[106] U.S. Congress, House Committee on Armed Services, Subcommittee on Strategic Forces, *Russian Violations of the Intermediate-Range Nuclear Forces Treaty*, Hearing, 113th Cong., 2nd sess., July 17, 2014. Prepared statement of Steven Pifer, p. 7.

reacted by claiming that the NATO cohesion on this issue provided further evidence of the threat that NATO poses to Russia and further evidence that Russia needs a full scope of military capabilities in response.

Convene the Special Verification Commission

Article XIII of the INF Treaty established the Special Verification Commission (SVC) as a forum where the parties could meet to discuss and resolve implementation and compliance issues. This body had not met since 2000, but according to the terms of the treaty, the parties agreed that a meeting could occur "if either Party so requests"; there is no mandate for consensus or mutual agreement on the need for a meeting.

Press reports from October 2016 indicated that United States "has summoned Moscow to a mandatory meeting" of the SVC "to answer accusations that Moscow has violated the INF Treaty."[107] This meeting occurred on November 15-16, 2016. The State Department released a statement that noted the meeting had occurred in Geneva, Switzerland, and that the United States, Belarusian, Kazakh, Russian, and Ukrainian Delegations "met to discuss questions relating to compliance with the obligations assumed under the Treaty."[108] The statement did not provide any information about the substance of the discussions or about the possibility of future meetings. While some public press outlets reported that the meeting had occurred, the reports also did not provide any details about the substance of the meeting. Both the United States and Russia probably outlined all their compliance concerns, as that was the reason for calling the meeting, but, absent any reporting to the contrary, it is possible that they did not resolve their concerns or reach any new understandings.

The United States called a second meeting of the SVC in late 2017. This meeting occurred in Geneva from December 12 to 14, 2017.[109] Because the United States identified the noncompliant GLCM as the 9M729, Russia could no longer deny the existence of the missile. However, according to some reports, Russia continued to deny that this missile had been tested to INF range or that telemetry from the tests supported a conclusion that it violated the INF Treaty. The United States has not disputed, publicly, Russia's assertion that it did not test the missile to INF range, but it did note, in the State Department's Annual Report, that Russia has attempted to "obfuscate the nature of the program."[110]

Analysts outside government have suggested that, by meeting in the SVC, the parties could return to the more routine compliance process established by the treaty and remove the issue from the public debate. They expected this step to ease efforts to initiate a substantive discussion free of political posturing, while clearing the agenda of unrelated issues. Meetings in this forum would

[107] Paul Sonne, Julian E. Barnes, and Gordon Lubold, "U.S. Accuses Rusia of Violating Missile Treaty," *The Wall Street Journal*, October 19, 2016, http://www.wsj.com/articles/u-s-accuses-russia-of-violating-missile-treaty-1476912606.

[108] U.S. Department of State, Thirtieth Session of the Special Verification Commission under the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of Their Intermediate-Range and Shorter-Range Missiles (INF Treaty), Washington, DC, November 16, 2016, http://www.state.gov/r/pa/prs/ps/2016/11/264375.htm.

[109] U.S. Department of State, *Thirty-First Session of the Special Verification Commission Under the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of Their Intermediate-Range and Shorter-Range Missiles (INF Treaty)*, December 14, 2017, https://www.state.gov/r/pa/prs/ps/2017/12/276613.htm.

[110] U.S. Department of State, *Adherence to and Compliance With Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, Report, Washington, DC, April 2018, p. 10, https://www.state.gov/documents/organization/280774.pdf.

also provide Russia with the opportunity to raise its concerns about U.S. programs and U.S. compliance with the INF Treaty.

Others questioned whether Russia would be willing to participate in an SVC meeting if it was required to at least acknowledge that it had conducted tests of a questionable missile. However, once the United States called for the meetings, Russia was obligated to attend under the terms of the treaty. While it is not clear what transpired, the meetings should have provided the two nations with an opportunity to share data and information outside the public spotlight.

If the meetings had been successful, and Russia had been willing to acknowledge that it had conducted tests that appear inconsistent with the INF Treaty, then the United States and Russia could have used the SVC as a forum to discuss steps they might take to resolve and, if possible, reverse the violation. For example, the United States could provide Russia with a list of missile tests that raised concerns about compliance, and Russia could share data generated during those flight tests so that they could review the data together and try to reach an agreed conclusion on the parameters of the tests. Moreover, even if they could not reach agreed conclusions about past tests, they could seek to negotiate new definitions or procedures that might reduce the chances of future ambiguities or uncertainties. And if they did agree that past tests had violated the terms of the INF Treaty, they might seek to work out procedures to eliminate the offending missiles and restore the parties to compliance with the treaty.

Even if Russia acknowledged that its missile violated the INF Treaty, the SVC meetings might not lead to a prompt resolution of the INF debate. The process could still take years to reach a conclusion. For example, in 1983, the United States detected Soviet construction of an early-warning radar that appeared to violate the 1972 Anti-ballistic Missile (ABM) Treaty. That treaty permitted the construction of early-warning radars on the periphery of a country facing out; the Soviet Union had constructed the radar in the country's interior, with the radar facing northeast over Soviet territory. The United States first declared this radar to be a violation of the ABM Treaty in January 1984, and it raised its concerns about the radar in numerous compliance meetings and reviews of the ABM Treaty. The Soviet Union dismissed the U.S. accusations and claimed that the facility was a space-track radar, not an early-warning radar, in spite of the fact that it looked exactly like other Soviet early-warning radars. Finally, in 1987, the Soviet Union suspended construction of the radar and, in 1989, agreed that the radar was a technical violation of the treaty. In 1990, seven years after the United States identified the violation, the Soviet Union began to dismantle the radar.

Initiate Studies on New Military Capabilities

Some analysts have suggested that the United States initiate studies that would explore whether the United States should eventually deploy new intermediate-range ballistic or cruise missiles to meet emerging military requirements.[111] These studies would allow the United States to "negotiate from a position of strength" when addressing questions of Russian compliance and might provide the United States with "military breakout options" if the negotiations failed.[112] According to Brian McKeon, the Principal Deputy Under Secretary of Defense for Policy, the Pentagon has already pursued this approach. In congressional testimony in December 2014, he

[111] Elbridge Colby, "The Real Trouble With Russia," *Foreign Affairs*, April 7, 2014, http://www.foreignaffairs.com/articles/141106/elbridge-colby/the-real-trouble-with-russia.

[112] U.S. Congress, House Committee on Armed Services, Subcommittee on Strategic Forces, *Russian Violations of the Intermediate-Range Nuclear Forces Treaty*, Hearing, 113th Cong., 2nd sess., July 17, 2014. Prepared Statement of Jim Thomas, p. 6.

noted that the Joint Staff had conducted a military assessment of the threat that new Russian INF-range missiles might create for U.S. allies in Europe and Asia and that "this assessment has led us to review a broad range of military response options."[113] According to Under Secretary McKeon, these options could include the deployment of new defenses against cruise missiles, the development and possible deployment of new U.S. intermediate-range missiles, and the deployment of other military capabilities that could counter the new Russian capabilities.[114] Reports indicate that DOD forwarded its results to the White House in early 2015. The Administration has not, however, released this report to either Congress or the public, noting that its contents remain classified.[115]

Under Secretary McKeon provided Congress with an update on the Pentagon's pursuit of options to respond to Russia's INF violation in testimony before the House Armed Services Committee in December 2015. At that time, he noted that the Pentagon remained "focused on ensuring that Russia gains no significant military advantage from its violation." But he also noted that the United States should "consider Russian actions with regard to the INF Treaty in the context of its overall aggressive and bellicose behavior that flouts international legal norms and destabilizes the European security order." As a result, instead of seeking a military response that specifically offset the threat introduced by the new ground-launched cruise missile, the Pentagon is "factoring Russia's increased cruise missile capabilities, including its INF violation into our planning." According to Under Secretary McKeon, the Pentagon is focusing on "developing a comprehensive response to Russian military actions" and is "committing to investments now that we will make irrespective of Russia's decisions to return to compliance with the INF Treaty."[116]

Congress first offered support for the development of a military response to Russia's INF violation in legislation proposed in both the House and the Senate in July 2014 (H.R. 5293 and S. 2725). These bills called on the President to "carry out a program to research and develop ground-launched cruise missile and ground-launched ballistic missile capabilities, including by modification of existing United States military capabilities, with a range between 500 and 5,500 kilometers." The legislation also called on the President to study potential sites for the deployment of these new systems and to "consider selecting sites on United States overseas military bases and sites offered by United States allies." The FY2015 National Defense Authorization Act (H.R. 3979, §1651) also called on the Pentagon to submit a report to Congress that described steps that it plans to take in response to Russia's violation of the INF Treaty. These plans could include research, development, and testing or deployment of future military capabilities or plans to modify and deploy existing military systems, to deter or defend against the threat posed by new Russian INF systems. The FY2016 National Defense Authorization Act (H.R. 1735, §1243) expanded on this provision, calling not only for a study on possible options, but also for a plan for the development of the counterforce capabilities to prevent intermediate-range ground-launched ballistic missile and cruise missile attacks, countervailing strike capabilities to enhance the forces of the United States or allies of the United States, and active defenses to defend against intermediate-range ground-launched cruise missile attacks.

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[113] Army Sgt. 1st Class Tyrone C. Marshall Jr, "Russian Arms Control Violation Prompts Joint Staff Assessment," *DoD News, Defense Media Activity*, December 11, 2014.

[114] Michael Gordon, "Pentagon to Press Russia on Arms Pact Violation," *New York Times*, December 11, 2014.

[115] Bill Gertz, "White House Blocks Pentagon Report on Russian Treaty Breach," *Washington Free Beacon*, August 11, 2015.

[116] U.S. Congress, House Committee on Armed Services, Subcommittee on Strategic Forces, *Russian Arms Control*, Hearing, 114th Cong., 2nd sess., December 1, 2015.

As noted above, the National Defense Authorization Act for 2018 (H.R. 2810) has taken this approach further, both by providing funding for research into defenses, counterforce capabilities, and countervailing capabilities, and by mandating that DOD begin a program of record to develop a new U.S. ground-launched cruise missile. Press reports indicate that the Pentagon has already begun research into a new ground-launched cruise missile. They note that the United States has told Russia about the new research program and has said it would "abandon the research program if Russia returns to compliance with the INF Treaty."[117]

Studies exploring possible U.S. military responses would not necessarily lead to the design of new land-based INF-range systems; the studies might conclude that the United States could meet its security challenges with sea-based or air-delivered weapons. However, if the studies did find that U.S. security could benefit from such systems, the United States could initiate research, development, and design work without violating the INF Treaty's ban on the testing or deployment of intermediate-range land-based missiles. Then, if Russia persisted in developing and deploying INF-range missiles, the United States would be able to move more quickly to respond and offset new threats to its security and the security of its allies.

At the same time, these studies might boost the diplomatic dialogue by creating incentives for Russia to address U.S. concerns and preserve the INF Treaty. During the early 1980s, the Soviet Union was unwilling to ban INF-range systems, and was willing to limit its deployment only if the United States did not introduce any new missiles into Europe. It was only after the United States began to deploy its missiles in Europe that the Soviet Union became willing to reduce, and then eliminate, its systems. Some contend that this occurred because Soviet leaders recognized that U.S. INF systems could have struck targets in Moscow in minutes, and might have "decapitated" Soviet command and control systems early in a conflict. The only way to mitigate this threat was to agree to a ban on INF missiles. New U.S. research into INF systems might lead to similar, new Russian worries about its vulnerability to missile strikes from Europe, and therefore, new interests in limiting or banning intermediate-range missiles.[118]

There is some evidence that the potential for new U.S. INF deployments may have a similar effect on Russia. In June 2015, press reports focused on U.S. statements about the potential development of new military capabilities in response to Russia's INF violation.[119] These articles, which highlighted the possibility that the United States might deploy new land-based missiles to Europe, caught the attention of Russian officials. An official speaking for the Kremlin noted that Moscow "placed much attention" on this report. A member of the Defense Committee of Russia's Federal Assembly stated that if the United States pursued such a deployment, Russia "would face the necessity of retaliating."[120] While it is not yet clear whether Russia will conclude that its security is better served by pressing forward with its own deployments or by returning to compliance with the INF Treaty and forestalling a new U.S. cruise missile, it seems likely that Russia now knows that the United States might pursue a military response that affects Russia's security.

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[117] Julain E. Barnes, Paul Sonne, and Brett Forrest, "Pentagon Moves to Develop Banned Intermediate Missile," *Wall Street Journal*, November, 16, 2017, https://www.wsj.com/amp/articles/pentagon-moves-to-develop-banned-intermediate-missile-1510862789.

[118] Jeffrey Lewis, "An Intercontinental Ballistic Missile by any Other Name," *Foreign Policy*, April 25, 2014, http://www.foreignpolicy.com/articles/2014/04/25/nuclear_semantics_russia_inf_treaty_missiles_icbm.

[119] Robert Burns, "U.S. Might Deploy Missiles in Europe to Counter Russia," *Associated Press*, June 4, 2015. See, also, Josh Rogin, "U.S. Weighing Punishments for Russia's Nuclear Violations," *Bloomberg View*, May 20, 2015.

[120] Comments cited in Steven Pifer, *Calling foul: the U.S. response to Russia's violation of a nuclear arms treaty*, Brookings Institution, Washington, DC, June 8, 2015, http://www.brookings.edu/blogs/order-from-chaos/posts/2015/06/09-russia-violates-nuclear-treaty-pifer.

On the other hand, if, as Secretary McKeon testified in December 2015, the United States is considering the challenge posed by Russia's INF violation to be a part of the broader challenge of Russian activities in Europe, these programs may do little to encourage Russia to return to INF compliance. Part of the incentive for that return would rest with the promise that the United States would refrain from deploying new capabilities in Europe if Russia returned to compliance. But, if the United States responds with investments "that we will make irrespective of Russia's decisions to return to compliance with the INF Treaty," the incentive could be lost.

Suspend or Withdraw from Arms Control Agreements

Some analysts have suggested that the United States suspend its participation in arms control agreements with Russia, both to demonstrate the magnitude of its concerns with Russia's missile developments and to preserve U.S. options for responding to military threats that might emerge if Russia deploys new INF missiles. Moreover, by suspending its participation in these agreements, the United States could make it clear that Russia would benefit from treaty-mandated limits on U.S. military capabilities only if its military capabilities were similarly limited. As with the studies on new U.S. military capabilities, this might boost the diplomatic process by providing Russia with an incentive to acknowledge and suspend its noncompliant missile tests.

Several analysts have called on the United States to suspend its participation in the 2010 New Strategic Arms Reduction Treaty (New START).[121] This treaty, which entered into force in February 2011, limits the United States and Russia to 1,550 deployed warheads on 700 deployed delivery vehicles for long-range, strategic nuclear warheads. Both parties are currently reducing their forces, and have until February 2018 to meet the limits. As a result, some analysts have argued that the United States could suspend its participation now, without withdrawing from the treaty, then resume reductions prior to the deadline if Russia returned to compliance with the INF Treaty.[122] This step would "underscore to Moscow that the advantageous deal they achieved in the New START Treaty ... is being put in jeopardy."[123]

The House supported this approach in its version of the FY2015 National Defense Authorization Bill (H.R. 4435, §1230a). It included a provision that would have withheld funding for the implementation of New START until the Secretary of State and Secretary of Defense certified, among other things, that Russia was no longer taking actions that are inconsistent with the INF Treaty. The final version of the FY2015 National Defense Authorization Act (P.L. 113-291) does not include this provision, but it highlights, in Section 1247, that issues regarding Russia's compliance with the INF Treaty have raised concerns about the continuing value of the New START Treaty. The legislation requires that the Secretary of Defense and the Chairman of the Joint Chiefs of Staff submit a report to Congress that states why the continued implementation of New START remains in the national security interests of the United States.

Others have argued that the U.S. suspension of New START could undermine U.S. national security interests. They note that Russia could also suspend its reductions under New START and, possibly, increase its nuclear forces above the limits. Russia could also respond by suspending the

[121] For details on the key provisions of this treaty, see CRS Report R41219, *The New START Treaty: Central Limits and Key Provisions*, by Amy F. Woolf.

[122] Rebeccah Heinrichs, "Obama administration pursues arms control at great loss to US," *The Hill*, August 27, 2014, http://thehill.com/blogs/congress-blog/homeland-security/215701-obama-administration-pursues-arms-control-at-great-loss.

[123] Stephen Rademaker, "On Ukraine, President Obama should be more like Jimmy Carter," *Washington Post*, October 8, 2014.

data exchanges and on-site inspections mandated by New START, denying the United States access to data and information that is important not only to the treaty verification process, but also to the U.S. intelligence community.[124] Moreover, this step might not have the desired effect of inducing Russian compliance with INF if Russia decided its security was better served with the deployment of new INF-range missiles than with reductions in U.S. strategic forces. As a result, the temporary suspension could evolve into a permanent loss of the treaty's limits on Russian strategic forces and inspection procedures.

Some have suggested that the United States withdraw from the INF Treaty, both to protest Russia's noncompliance and to allow the United States to pursue the development and deployment of its own land-based INF-range missiles.[125] However, some argue that U.S. withdrawal could do more harm than good to U.S. and allied security interests because the United States has not yet determined whether it would want to deploy land-based INF missiles itself, and has not yet identified or funded a program to develop such missiles. As a result, U.S. withdrawal would leave Russia as the only party able to benefit from the elimination of the treaty limits and might allow Russia to move quickly from testing to deployment. Moreover, as Stephen Rademaker noted during testimony before the House Armed Services Committee, Russia might "welcome a U.S. decision to terminate the treaty," and it would "be a mistake to react in ways that will be seen by them as a reward rather than as a punishment."[126] He added that "since Russia so clearly wants out, we should make sure that they alone pay the political and diplomatic price of terminating the treaty."

Options for Addressing Deployment of New INF Missiles

In an interview published in November 2014, Under Secretary of State Rose Gottemoeller, who led the U.S. discussions with Russia on the INF Treaty, stated that she believed there was a debate in Moscow about whether the INF Treaty continued to serve Russia's national security interests. She believed the issue was not settled and that "recent comments by Russian officials and by the Russian government overall about the viability and importance of the treaty for the time being give us time and space to negotiate."[127] It is also possible, however, that the debate in Russia is less about whether to stay within the treaty and more about when and how to move beyond its limits. Some would argue that Russia's willingness to participate in discussions with the United States provided Russia with time and space to pursue its missile programs, before openly withdrawing from the treaty and prompting a U.S. response. Others have argued that Russia may be unwilling to withdraw from the treaty now, with the hope that the United States might eventually agree to a joint withdrawal or that the United States might withdraw itself and free Russia from its obligations.

With the future of the treaty uncertain, the United States could consider a range of options for how it might address U.S. and allied security concerns now that Russia has begun to deploy the new INF-range cruise missile. These options include military responses—such as the

[124] Blake Narendra, "Obama administration pursues arms control at great gain to US," *The Hill*, September 11, 2014.

[125] John Bolton and John Yoo, "An Obsolete Nuclear Treaty Even Before Russia Cheated," *Wall Street Journal*, September 9, 2014, http://online.wsj.com/articles/john-bolton-and-john-yoo-an-obsolete-nuclear-treaty-even-before-russia-cheated-1410304847.

[126] U.S. Congress, House Committee on Armed Services, Subcommittee on Strategic Forces, *Russian Violations of the Intermediate-Range Nuclear Forces Treaty*, Hearing, 113th Cong., 2nd sess., July 17, 2014. Prepared Statement of Stephen G. Rademaker, p. 2.

[127] Daniel Horner and Daryl G. Kimball, "Arms Control in the Near Term: An Interview with Undersecretary of State Rose Gottemoeller," *Arms Control Today*, November 2014.

development and deployment of new nuclear-armed cruise missiles or new conventional military capabilities—along with diplomatic and consultative steps taken with U.S. allies.

Land-Based INF-Range Missiles

As noted above, legislation proposed in July 2014 called on the President to conduct a study both on the need for new missiles and on locations overseas where the United States might deploy such systems. Others have been more direct in their support of new U.S. INF-range systems. Former Under Secretary of State John Bolton has argued that the INF Treaty interferes with the United States' ability "to preserve global security" and that other countries, like China, North Korea, and Iran, face no limits on their intermediate-range missiles. He believes the United States "should see Moscow's breach as an opportunity to withdraw" from the treaty so that it can "have access to the full spectrum of conventional and nuclear options."[128] As noted above, Congress has mandated that the Pentagon begin a program of record on a new ground-launched intermediate-range cruise missile, and the Pentagon has begun to conduct research into such a system.

Those who support programs to develop and deploy new U.S. INF-range missiles do not say, specifically, that these missiles should carry nuclear warheads or be based in Europe, although they also do not rule this out. Other analysts, however, argue that such an approach is unnecessary and would possibly do more to disrupt than support U.S. alliances overseas. They note that the United States should not need to deploy new nuclear weapons because U.S. conventional weapons are more than capable of responding to emerging threats and ensuring U.S. and allied security.[129] They note that Russia also views U.S. conventional capabilities as a threat to Russian security, pointing out that Russian officials have repeatedly raised concerns about U.S. advanced conventional weapons and have suggested that Russia would be unwilling to reduce its nuclear forces any further unless the United States were willing to limit these capabilities in an arms control treaty.[130]

Moreover, even if the United States decided that it needed to counter Russia's new capabilities with nuclear-armed missiles, it could be very difficult to find an allied country in Europe or Asia that was willing to house those missiles.[131] As noted above, even after NATO reached consensus on the need to deploy INF missiles in 1979, several allied governments nearly refused to accept the missiles on their territories and many faced widespread public protests against the deployment of new nuclear weapons. There would likely be even less support for new nuclear weapons among many of the U.S. allies in Europe now, with several recently calling for the removal of the nearly 200 U.S. nuclear weapons that remain in Europe.[132] As a result, it is possible that U.S. efforts to deploy new nuclear-armed INF-range missiles in Europe could "exacerbate political

[128] John Bolton and John Yoo, "An Obsolete Nuclear Treaty Even Before Russia Cheated," *Wall Street Journal*, September 9, 2014, http://online.wsj.com/articles/john-bolton-and-john-yoo-an-obsolete-nuclear-treaty-even-before-russia-cheated-1410304847.

[129] Jeffrey Lewis, "An Intercontinental Ballistic Missile by any Other Name," *Foreign Policy*, April 25, 2014, http://www.foreignpolicy.com/articles/2014/04/25/nuclear_semantics_russia_inf_treaty_missiles_icbm.

[130] Elaine M. Grossman, "Russian Experts Question Role of Conventional 'Prompt Global Strike' Weapons," Global Security Newswire, April 7, 2009.

[131] Joseph Cirincione, "Why John Bolton's Dangerous Call to Nuclear Arms Makes No Sense," *Defense One*, September 15, 2014, http://www.defenseone.com/ideas/2014/09/why-john-boltons-dangerous-call-nuclear-arms-makes-no-sense/94166/?oref=search_cirincione.

[132] Kent Harris, "NATO Allies Want U.S. Nuclear Weapons out of Europe," Stars and Stripes, European Edition, March 3, 2010. See also, "Allied Bid for Obama to Remove U.S. European Nuclear Stockpile," AFP, February 20, 2010.

divisions in Europe" and undermine the unity NATO would need to respond to Russian attempts at coercion.[133] There is also likely to be little support for new U.S. land-based nuclear weapons in Asia, as the United States removed these weapons in the early 1990s and maintains long-range bombers with the capability to support extended deterrence in Asia.[134]

Other Military Capabilities

If Russia deploys new intermediate-range ballistic missiles and cruise missiles and seeks to use those capabilities to coerce or intimidate the United States or its allies, then the United States might deploy other military capabilities in response. These could include new air-delivered or sea-based cruise missiles that would be consistent with the terms of the INF Treaty and would not require basing on allied territories. The United States could also seek to expand the range of existing shorter-range systems, so that it could meet potential new military requirements without bearing the cost of developing new intermediate-range missile systems. For example, in testimony before the House Armed Services Committee, Jim Thomas, the Vice President of the Center for Strategic and Budgetary Assessments, suggested that the Department of Defense (DOD) assess the feasibility and cost to extend the range of the Army's tactical missile system (MGM-164 ATACMS), which currently has a range of about 80 miles. He also suggested that DOD consider developing a "road-mobile, land-based variant" of the Navy's MK-41 vertical launch system so that it could launch offensive missiles from land, if needed.[135] Frank Rose and Robert Scher, former officials from the Obama Administration, made similar suggestions in a joint HASC/HFAC hearing in late March 2017. They both identified air-delivered and sea-based military capabilities as a means to not only offset threats to NATO nations but also remind Russia of the threats it could face if the INF Treaty were to collapse.[136]

The United States could also expand its missile defense capabilities in Europe and Asia in response to the deployment of new Russian missiles. At the present time, the United States and NATO are pursuing the European Phased Adaptive Approach, with missile defense interceptors deployed at sea and, eventually, on land in Poland and Romania. The interceptors and radars in this system are designed to defend against shorter- and intermediate-range missiles launched from Iran, with, eventually, some capability against longer-range Iranian missiles. The United States is deploying similar sea-based capabilities in Asia, in cooperation with allies there, in response to North Korea's missile program. The United States has insisted, repeatedly, that this system will have no capability against the larger numbers of far more capable Russian long-range missiles.[137] However, several analysts in both the United States and Europe have suggested that NATO might

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[133] Jeffrey Lewis, "An Intercontinental Ballistic Missile by any Other Name," *Foreign Policy*, April 25, 2014, http://www.foreignpolicy.com/articles/2014/04/25/nuclear_semantics_russia_inf_treaty_missiles_icbm.

[134] Some analysts and politicians in South Korea have called for the United States to return nuclear weapons to the peninsula. However, this is not the view of South Korean government. Moreover, the United States would not need to deploy intermediate-range missiles to reach North Korea from South Korea. See Philip Iglauer, "Nuclear Weapons for South Korea," *The Diplomat*, August 14, 2014.

[135] U.S. Congress, House Committee on Armed Services, Subcommittee on Strategic Forces, *Russian Violations of the Intermediate-Range Nuclear Forces Treaty*, Hearing, 113th Cong., 2nd sess., July 17, 2014. Prepared statement of Jim Thomas, p. 6.

[136] U.S. Congress, House Committee on Armed Services, Subcommittee on Strategic Forces, *Consequences and Context for Russia's Violation of the INF Treaty*, Hearing, 115th Cong., 1st sess., March 30, 2017, https://armedservices.house.gov/legislation/hearings/consequences-and-context-russias-violations-inf-treaty.

[137] See, for example, Rose Gottemoeller, Under Secretary of State for Arms Control and International Security, *America's Commitment to Ballistic Missile Defense and the European Phased Adaptive Approach*, U.S. Department of State, Remarks, Bucharest, Romania, November 18, 2014, http://www.state.gov/t/us/2014/234157.htm.

reorient this system to defend against Russian intermediate-range missiles, if necessary.[138] Others have argued that the United States and NATO should focus specifically on the development and deployment of cruise missile defenses "to protect key alliance assets in the event of a conflict with Russia."[139]

Consultation and Cooperation with Allies

New intermediate-range missiles deployed in or near Russia would not have the range needed to reach targets in the continental United States. They would, however, be able to threaten U.S. allies in Europe, Asia, and the Middle East. As noted above, some have suggested that the United States provide its allies with information about the new Russian missiles and include them in discussions with Russia about their apparent noncompliance with the INF Treaty. Similarly, the United States could engage with its allies when determining how to respond if Russia deploys new INF-range missiles.[140] U.S. allies' views on the nature of the threat from the missiles could inform the U.S. approach to responding to that threat. Some may favor continuing efforts to engage Russia through diplomatic channels, while others may prefer that the United States develop and deploy new capabilities to defend against any emerging Russian threat.

The United States could also consider several steps to reassure its allies of its commitment to their defense. Some analysts believe that this has become increasingly important in recent months, following Russia's annexation of Crimea and aggression against Ukraine. For example, NATO could develop new plans and procedures for engaging with Russia in a crisis in which these missiles might come into play. NATO might also expand its ongoing joint training missions and exercises, both to reassure the allies of the U.S. commitment and to strengthen its ability to provide reinforcements if a conflict were to occur.[141] Beyond NATO, the United States could also meet with allies in Asia and the Middle East to discuss possible military or diplomatic responses if they felt threatened by Russia's missiles, either generally or in response to specific scenarios.

Although some analysts have suggested that the United States focus its response to Russia's noncompliance with the INF Treaty on military measures, and the development of new missile capabilities, others have argued for a more nuanced approach. They note that the United States may be able to defend its allies and respond to Russian aggression with conventional weapons and existing capabilities. But they also note that the full range of U.S. capabilities will do little to assuage the concerns of U.S. allies unless they are confident that the United States will come to their defense if they are threatened. In the absence of that confidence, some allies may feel more exposed than others and may be more vulnerable to Russian efforts at coercion.

As a result, although the current crisis over the INF Treaty began with concerns about the development of new Russian missiles, the United States may need to respond with measures directed more at the political concerns of its allies than at the military capabilities of Russia. For example, some European allies, particularly in Central and Eastern Europe, have expressed

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[138] Jaroslaw Adamowski, "Poland, Romania Eye Intensified Cooperation With United States," *Defense News*, November 18, 2014, http://www.defensenews.com/article/20141118/DEFREG01/311180047/Poland-Romania-Eye-Intensified-Cooperation-United-States.

[139] Alexander Vershbow and Frank A. Rose, "Russia violated our nuclear arms treaty. Here's how we respond.," *The Hill*, April 21, 2017. http://thehill.com/blogs/pundits-blog/foreign-policy/329943-russia-violated-our-nuclear-arms-treaty-heres-how-we.

[140] Jeffrey Lewis, "An Intercontinental Ballistic Missile by any Other Name," *Foreign Policy*, April 25, 2014, http://www.foreignpolicy.com/articles/2014/04/25/nuclear_semantics_russia_inf_treaty_missiles_icbm.

[141] Jacek Durkalec, *Russia's Violation of the INF Treaty: Consequences for NATO*, The Polish Institute of International Affairs, Bulletin, Warsaw, August 13, 2014.

concern about the United States' reduced conventional force posture in Europe, and particularly the withdrawal over the past two years of two of the Army's four brigade combat teams in Europe. Although the United States has augmented its military presence in Central and Eastern Europe in the wake of Russia's annexation of Crimea, many allies have asked for a more robust U.S. response. NATO addressed these concerns during the September 2014 summit in Wales and announced a number of collective defense measures that were designed to deter further Russian aggression.[142] Although not directly connected to Russia's noncompliance with the INF Treaty, these measures may also serve to assuage security concerns that arise if Russia continues to develop new intermediate-range ballistic and cruise missiles.

Congressional Oversight

Both the House and Senate pressed the Obama Administration for information about Russia's arms control compliance record and options for the U.S. response during the 114th Congress. The House Armed Services and Foreign Affairs Committees have held three hearings on this issue, to date, and both the House and Senate Armed Services Committees have raised the issues during other, related hearings. The National Defense Authorization Act for FY2015 (H.R. 3979) mandates that the President submit a report to Congress that includes an assessment of the effect of Russian noncompliance on the national security interests of the United States and its allies, and a description of the President's plan to resolve the compliance issues. The legislation also calls for periodic briefings to Congress on the status of efforts to resolve the U.S. compliance concerns.

The FY2016 NDAA (H.R. 1735, §1243) also addressed Russia's compliance with the INF Treaty and possible U.S. military responses. This legislation stated the sense of Congress that the development and deployment of a nuclear ground-launched cruise missile by Russia is a violation of the INF Treaty, that Russia should return to compliance with the INF Treaty, that efforts to compel Russia to return to compliance "cannot be open-ended," and that there are several U.S. military requirements that would be addressed by the development and deployment of systems currently prohibited by the INF Treaty. The legislation went on to require that the President notify Congress both about the status of Russia's compliance with the INF Treaty and the status and content of updates that the United States provides to its allies in NATO and East Asia about Russia's testing, operating capability, and deployment of INF-range ground-launched ballistic missiles or ground-launched cruise missiles. As was noted above, the legislation also mandated that the Secretary of Defense submit a plan to Congress for the development of counterforce capabilities to prevent intermediate-range ground-launched ballistic missile and cruise missile attacks, countervailing strike capabilities to enhance the forces of the United States or allies of the United States, and active defenses to defend against intermediate-range ground-launched cruise missile attacks.

The FY2017 NDAA (P.L. 114-328 §1231 and §1238) also addressed congressional concerns with Russia's compliance with the INF Treaty. In Section 1231, Congress withheld $10 million in funding for the Executive Office of the President until the Secretary of Defense completed "meaningful development" of military capabilities that would allow the United States to respond to risks created by Russia's deployment of a new ground-based cruise missile. Section 1238 mandated that the Chairman of the Joint Chiefs of Staff submit a report containing, among other things, an assessment "of whether and why the Treaty remains in the national security interest of the United States, including how any ongoing violations bear on the assessment if such a violation is not resolved in the near-term."

[142] For details on the issues addressed during the summit in Wales, see CRS Report R43698, *NATO's Wales Summit: Outcomes and Key Challenges*, by Paul Belkin.

As is noted above, both the House and Senate versions of the FY2018 NDAA (H.R. 2810) also mandate that the United States take steps to develop a military response to Russia's INF-range missile. The conference report (H.Rept. 115-404) mandates that the Secretary of Defense "establish a program of record to develop a conventional road-mobile ground-launched cruise missile system with a range of between 500 to 5,500 kilometers" and authorizes $58 million in funding for the development of active defenses to counter INF-range ground-launched missile systems; counterforce capabilities to prevent attacks from these missiles; and countervailing strike capabilities to enhance the capabilities of the United States. The legislation also mandates that the President impose additional sanctions on Russia if it remains in noncompliance with the INF Treaty.

The FY2015 NDAA had stated that it was in the national security interest of the United States and its allies for the INF Treaty to remain in effect and for Russia to return to full compliance with the treaty. However, this assessment could change now that Russia appears to have deployed its new INF-range land-based cruise missile. Both Congress and the new Trump Administration could now conclude that the United States may need to move beyond the diplomatic process to address emerging security concerns. While a decision to withdraw from the INF Treaty would have to come from the executive branch, Congress can express its views on that outcome both during hearings and through legislation. It cannot, however, mandate that outcome. Congress could also press the Administration to implement economic or military measures in response to Russia's violations, and would have to authorize and appropriate funds for any new military programs proposed by the Department of Defense.

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