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The INF Treaty, Extended Deterrence, and Assurance: A Case Study in Unintended Consequences

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Introduction

The 31-year lifespan of the Intermediate-range Nuclear Forces (INF) Treaty is a prominent example of the dangers the United States faces if it fails to adapt an arms control agenda to changing allied threat perceptions, extended deterrence requirements, and assurance needs. Despite the initial overwhelming bipartisan support for the INF Treaty within the United States, and widespread support among North Atlantic Treaty Organization (NATO) allies, the actions that the United States took (or failed to take) in the years since the Treaty's entry into force and subsequent termination in 2019 have caused growing allied concern. Broadly speaking, the withdrawal and elimination of many U.S. regional nuclear forces worldwide, and the related drawdown of forward-deployed conventional forces, combined with the worsening threat environment have created growing strains on U.S. alliances that appear to have no easy solution. It is therefore important to review the INF Treaty's effects on U.S. nuclear procurement options, allied extended deterrence and assurance requirements, and the linkages between these factors. By better understanding the history of the INF Treaty and related U.S. and allied developments, Washington can craft an approach to arms control that is more informed by, and tailored to, shifting allied extended deterrence and assurance requirements. In short, learning from the lessons of the INF Treaty today can improve the chances for more effective deterrence and assurance positions tomorrow.

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This *Information Series* begins with a brief explanation of the rationale behind, and substance of, the INF Treaty. Then, it examines the notes of caution, and rare dissents, that some officials made in response to the INF Treaty's terms. Following that is a description of subsequent U.S., allied, and Soviet/Russian and Chinese force procurement decisions that led to the strategic environment that U.S. officials find themselves in today. This *Information Series* concludes with a brief set of recommendations based on the lessons learned about extended deterrence and assurance from the INF Treaty.

The Reasons for an Agreement on Eliminating Intermediate-range Nuclear Forces

The Reagan Administration decided early on that a central tenet of its arms control policy would be to pursue the elimination of intermediate-range Soviet nuclear forces, primarily the SS-20 intermediate-range ballistic missile (IRBM).¹ The United States and its NATO allies were particularly concerned about the SS-20 for two reasons: its payload and its adaptability. Unlike the systems it would replace, the SS-20 was mobile and could carry three warheads – tripling the warhead loads for the Soviet IRBM force that could be employed against NATO.² Additionally, the SS-20 was essentially the same missile as the Soviet SS-16 intercontinental-range ballistic missile (ICBM), minus a third stage – a capability that could be fairly easily added.³ U.S. officials were concerned that the Soviet Union retained what amounted to a "breakout" force that circumvented the Strategic Arms Limitation Talks (SALT II) political agreements that were still in place, and worse, represented a significant potential increase in the intercontinental threat to the United States.⁴

After the United States successfully deployed its own INF systems to Europe, and a related change in the Soviet leadership and negotiating position, the Soviet Union agreed to the Intermediate-range Nuclear Forces Treaty in 1987, which required the "destruction of the Parties' ground-launched ballistic and cruise missiles with ranges of between 500 and 5,500 kilometers, their launchers and associated support structures and support equipment within three years after the Treaty enters into force."⁵ The Soviet Union eliminated its SS-20 IRBMs, plus the older SS-4s and SS-5s, while the United States eliminated its Pershing II IRBMs and Gryphon ground-launched cruise missiles (GLCMs).⁶ Other systems like sea-launched cruise missiles (SLCMs), sub-500 km-range nuclear forces, and intercontinental-range nuclear forces were not covered by the INF Treaty, with the latter covered by the Strategic Arms Reduction Treaty (START I), signed in 1991.

The Reagan Administration enjoyed bipartisan support for ratifying the INF Treaty (winning Senate support 93-5) while allies in NATO also strongly supported the treaty. There was widespread attraction to the prospect of the first major nuclear arms control treaty to *reduce* arsenal sizes instead of simply capping total numbers. Ambassador Edward L. Rowny, Special Adviser to the President and Secretary of State for Arms Control Matters, summarized the views of many INF Treaty supporters when he stated, "This treaty also satisfies our requirement to maintain deterrence and coupling while not undermining our conventional forces. Imbalances in NATO and Warsaw Pact conventional forces exist today and will



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continue to exist after the missiles are eliminated, but deterrence is assured by the fact that NATO will retain those nuclear weapons required to prevent the Soviets from taking advantage of their superior conventional power."⁷ Similarly, NATO Secretary General Carington emphasized the importance of removing a potent Soviet threat while still retaining alliance unity: "The strength of the linkage between the two sides of the Atlantic is not a function of one particular weapons system. It is forged by the presence of 330,000 troops in Europe, the theatre nuclear systems remaining after the INF agreement as well as the conventional defence and the whole web of interlocking interests on which the transatlantic defence relationship is based."⁸ Overall then, INF Treaty supporters generally recognized that while force asymmetries between NATO and the Warsaw Pact remained, enough NATO forces remained to ensure deterrence and assurance while removing a greater number of Soviet missiles than the United States was required to eliminate.⁹

Concerns and Dissents on the INF Treaty

Those who had concerns about the INF Treaty, or who outright opposed it, were notable even if greatly outnumbered. Their criticism of the INF Treaty primarily focused on its effects on U.S. nuclear strategy. More specifically, critics were concerned that the elimination of U.S. intermediate-range nuclear forces in Europe would undermine U.S. objectives should deterrence fail. As stated by the scholar Colin Gray in the years immediately following the INF Treaty entry into force, the United States had traditionally favored forward-deployed nuclear systems that would lower the risk of U.S.-Soviet homeland-to-homeland exchanges; while European allies sought to ensure a "short fuse" between a Soviet conventional attack and strategic U.S.-Soviet nuclear exchanges.¹⁰

In short, the United States had traditionally favored relying on nuclear systems based in Europe (in conjunction with advocating for improved and expanded NATO conventional forces) to deter the Soviet Union. At the same time, NATO allies typically favored procuring enough conventional forces to ensure the Soviet Union would need to escalate to a major conflict to achieve its aims – a conflict NATO hoped Soviet leaders would realize could quickly begin to involve U.S. intercontinental-range systems. U.S. intermediate-range nuclear forces based in Europe helped minimize these potentially discordant aims, but their removal and elimination exacerbated the divide.

Similarly, even those who ultimately supported the INF Treaty had concerns about its impact on U.S. nuclear strategy and the greater reliance it placed on U.S. long-range nuclear forces for extended deterrence. As James Schlesinger testified before the Senate during the ratification hearings, at that point as a former Secretary of Defense, "… it must be strongly emphasized that the INF agreement removing from Europe missiles that have served, however temporarily, to help deter a Warsaw Pact attack expands the role in overall nuclear deterrence that must be played by U.S. strategic forces. The role of these forces in providing extended deterrence is therefore an increasingly preponderant one."¹¹ The scholar William Van Cleave, who ultimately did not support the INF Treaty, echoed Schlesinger's criticism but took it one



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logical step further, stating, "The strategic consequence of the INF agreement... is to place greater reliance on U.S. strategic nuclear forces for extended deterrence, on the strategic balance, at a time when that balance is decidedly adverse to the United States... while at the other end of the spectrum it will put more stress and emphasis on an unfavorable conventional balance."¹²

Colin Gray linked these two related criticisms by noting that eliminating U.S. intermediaterange nuclear forces in Europe harmed both the preferred U.S. *and* European-NATO defense strategies by removing a critical response option, while leaving both the United States and its allies in unfavorable positions vis-à-vis the Soviet Union in the strategic balance for the remaining forces outside the INF Treaty. As he summarized the issue: "Frequent public reference is made to the 'NATO triad' of conventional, tactical nuclear, and strategic nuclear forces. A balanced NATO triad means that undue prominence is not accorded the role in deterrence of strategic force, which has been unacceptable to the United States since 1961; while undue burdens are not placed upon conventional forces, which is unacceptable to NATO-Europe."¹³ In Gray's view then, if NATO-Europe was unwilling to invest more heavily in conventional forces to deny Soviet objectives *while remaining at the conventional level of conflict*, then the United States would be forced to rely more heavily on its intercontinental-nuclear forces and escalating a regional conflict to a homeland-to-homeland strategic affair – with all the attendant consequences.

Supporters of the INF Treaty generally responded to these criticisms by noting that even with the U.S. intermediate-range nuclear forces removed from Europe, there would be enough other types of forces to maintain deterrence. For example, Reagan Administration official Ambassador Rowny was asked during testimony to respond to a quotation from Gen. Brent Scowcroft who reportedly stated the INF Treaty would "leave us the choice of a conventional defeat or using strategic weapons to defend Europe." Ambassador Rowny responded that the United States under the INF Treaty would still retain dual-capable aircraft, sea-launched missiles, and sub-500 kilometer-range nuclear weapons.¹⁴ Thus, Rowny and other supporters of the INF Treaty concluded that as long as the United States and NATO-Europe maintained the theater nuclear forces not covered by the treaty, then that would be sufficient to support deterrence and assurance efforts. It is precisely this expectation, however, that did not come to pass in the years following the INF Treaty's implementation.

Post-ratification U.S. and NATO Force Developments

Although little-discussed in current analyses of the INF Treaty, notable government officials and non-government analysts were largely united in their desire to see the United States and NATO modernize the forces not covered under the treaty at the time it was signed. For some, the value of the treaty depended in large part on whether these forces outside the treaty were modernized to offset the loss of intermediate-range nuclear forces. During the INF Treaty hearings, for example, U.S. Senator John Warner thought it was remarkable that there was general agreement among subject matter experts from both political parties on this priority:



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"The overwhelming majority of witnesses pointed to the importance of following up the elimination of ... intermediate [range] nuclear forces with conventional, chemical, and short-range nuclear modernization. Many of these witnesses warned that without a serious and comprehensive modernization program NATO's flexible response strategy and extended deterrence would be weakened-if not become destabilizing."¹⁵ Indeed, even those analysts that typically favored further nuclear reductions, such as Amb. Paul Warnke, cautioned against beginning arms control discussions on nuclear systems below the 500 km range set by the INF Treaty because of the conventional imbalance favoring the Soviets.¹⁶

Secretary of Defense Frank Carlucci, for instance, cautioned that certain capabilities required "additional emphasis" in the wake of the INF Treaty to extend deterrence for the NATO alliance, including dual-capable aircraft and sea-based systems.¹⁷

Beyond continuing with existing programs, Carlucci also advocated for new force modernization programs, including the Tactical Air-to-Surface Missile (TASM) as a standoff option for DCA, also known as SRAM-II (Short-Range Attack Missile), and a Follow on to Lance (FOTL) surface-to-surface missile.¹⁸ Moreover, Carlucci explained that "with the exception of TLAM-N [Tomahawk land-attack missile, nuclear-armed] and the new strike bomb, the current U.S. naval tactical stockpile is approaching the end of its useful life."¹⁹ He therefore stated that the Department of Defense was developing a new nuclear depth strike bomb (NDSB) and considering a nuclear variant of the Sea Lance submarine-launched antisubmarine missile – both for deployment the 1990s.²⁰

These tactical nuclear programs, including TASM, FOTL, NDSB, and the nuclear Sea Lance variant all gained increased importance following the signing of the INF Treaty because they took on a greater share of the deterrence burden from the eliminated intermediate-range U.S. options.

Senior NATO officials also recognized the importance of continuing defense investments in the aftermath of signing the INF Treaty – an increasingly difficult position to hold for European officials at the time. As Lord Carington, NATO Secretary General, stated in 1988: "What worries me rather more than our policy on formal arms control is what might be called involuntary or structural disarmament, which is what Alliance governments are finding increasingly hard to avoid. I mean by that, the ability to continue to provide the resources necessary to maintain an adequate common defence. In this sense we are victims of our own success. The progress in East-West relations and its impact on public opinion has made support for defence spending harder to win."²¹

Carington's term as NATO Secretary General came to an end in 1988, but he spent his remaining time in the position advocating publicly for maintaining defense spending levels, and specifically, a diverse set of nuclear capabilities "of differing ranges and types, broadly deployed throughout the area."²²

Within only three years after the signing of the INF Treaty, however, threat perceptions in the United States and NATO-Europe had shifted so dramatically that nearly all the planned defense modernization programs that had rationalized the INF Treaty were cut back or even eliminated. From 1987-1989, for instance, total NATO defense spending, including nuclear and



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conventional weapons, remained flat, and even decreased as a percentage of gross domestic product.²³ In quick succession, the Bush Administration cancelled the Follow-on-to-Lance program and the elimination of all nuclear artillery shells—again, placing greater reliance on dual-capable aircraft.²⁴

By early 1991 then, NATO-Europe relied on U.S. theater-range systems comprised primarily of a shrinking number of land-based tactical nuclear weapon systems, the sealaunched nuclear cruise missile TLAM-N, and DCA with gravity bombs and a stand-off capability in development. But, in September 1991, President Bush announced the cancellation of TASM as part of the Presidential Nuclear Initiatives (PNIs) which effectively eliminated the only stand-off nuclear-armed option for DCA.²⁵ The 1991 PNI announcement also removed TLAM-N from deployment on submarines and surface ships and placed it into storage, with the capability to re-deploy if necessary during a crisis or conflict.²⁶ The 2010 Nuclear Posture Review Report ultimately retired the TLAM-N capability.²⁷

It is worth restating briefly the immense scope of the changes U.S. and NATO officials decided upon in the span of just five years after the signing of the 1987 INF Treaty. After choosing to eliminate U.S. intermediate-range nuclear forces and rely more heavily on nuclear and conventional forces not covered by the treaty, U.S. officials steadily eliminated program after program – particularly in sub-500 kilometer-range nuclear forces – even as those remaining forces shouldered an ever-greater deterrence and assurance burden. The U.S. non-strategic triad was reduced to a dyad as all nuclear-armed land-based systems below intercontinental range were eliminated, while the sea-based and air-based legs were removed from deployment and severely reduced respectively. From the end of the Cold War to today, the only U.S. non-strategic nuclear weapons program to be modernized is the B61-12 bomb, carried by DCA.²⁸

The United States, in coordination with its allies, also greatly reduced its forward-deployed conventional forces after signing the INF Treaty. As the Government Accountability Office (GAO) documented at the time, the U.S. military presence in Europe, for example, featured approximately 225,000 personnel in 1990, 105,000 in 1993, and 100,000 in 2001.²⁹ Indeed, among U.S. conventional force drawdowns in the wake of the INF Treaty, the status of U.S. main battle tanks in Europe is one of the more illuminating examples: a peak of approximately 6,000 tanks to their complete withdrawal from the continent in 2013 – just one year before Russia's initial invasion of Ukraine.³⁰

While the United States has refrained from developing intermediate-range nuclear forces that would have been illegal under the now-defunct INF Treaty, Russia and China did not follow that same course. The U.S. intelligence community assessed in 2018 that Russia began in the mid-2000s (after the INF Treaty verification regime had ended) developing an intermediate-range ground-launched cruise missile – a finding that led the United States to find Russia to be in violation of its INF Treaty obligations beginning in 2014.³¹ Ultimately, Russia's violation of the INF Treaty and unwillingness to answer satisfactorily U.S. and allied concerns led to the U.S. withdrawal from the treaty in 2019.³² China, meanwhile, was never a party to the INF Treaty, and, according to the latest Department of Defense report on the



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subject, has over 1,500 intermediate-range missiles, many of which are likely nuclear-armed or nuclear-capable.³³

The United States, however, does not have any intermediate-range land-based missiles that are forward-deployed permanently even four years after the United States withdrew from the INF Treaty.³⁴ The United States reportedly may deploy ground-launched intermediate-range missiles in the Pacific theater in the future, but the system would be a variant of the Navy's long-serving Tomahawk cruise missile.³⁵ The only completely new near-term, ground-launched intermediate range missile the United States is developing, according to open sources, is the U.S. Army's Dark Eagle hypersonic weapon.³⁶ Currently there are no public reports indicating the United States has agreed with any ally in the Pacific or European theaters on the deployment of ground-launched intermediate range missiles on its territory, or whether such an agreement may be forthcoming. Notably, in another instance of China and Russia failing to follow the example of U.S. restraint, officials in the Trump and Biden Administrations have stressed that whatever intermediate-range capabilities the United States will develop, they will be conventionally, and not nuclear-armed.³⁷

Conclusion and Recommendations

In the five years following the signing of the INF Treaty in 1987, U.S. and NATO threat perceptions of the Soviet Union, and then Russia, evolved rapidly in a benign direction, leading to swift drawdowns and the elimination of multiple U.S. nuclear capabilities. In the nearly 10 years since Russia first invaded Ukraine, U.S. and allied threat perceptions have once again changed rapidly, but this time toward recognizing the malign threats of Russia and subsequently China, including Moscow's numerous explicit nuclear threats.

What then are the potential lessons U.S. officials should learn from this INF Treaty case study? First and most obvious, U.S. officials should understand that arms control agreements can have unintended consequences far beyond the immediate security environment in which they are signed. That is, the United States and NATO seemingly "solved" the problem of Soviet intermediate-range nuclear forces threatening the West, but an aggressive U.S. arms reduction agenda led to the further elimination of expected U.S. capabilities that would have been directly relevant to mitigating the now decidedly unfavorable balance of theater nuclear forces in Europe and Asia.

While the U.S. commitment to the INF Treaty satisfied allied governments from the late 1980s through the early 2010s, it is clear that the Treaty, and the U.S. arms control-related drive to "reduce the role" of nuclear weapons in general, and U.S. theater nuclear weapons in particular, have led to an extreme imbalance of theater nuclear weapons. That imbalance appears to have increased Russian confidence in its position to issue reckless nuclear threats and call into question the credibility of U.S. extended deterrence commitments. Indeed, the 2010 Nuclear Posture Review Report predicted just such an allied reaction when it stated, "But large disparities in nuclear capabilities could raise concerns on both sides [in the United States and Russia] and among U.S. allies and partners, and may not be conducive to maintaining a



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stable, long-term strategic relationship...^{"38} These developments clearly have contributed to increased concern among some key allies about U.S. extended deterrence credibility. Indeed, there are growing allied calls for the United States to significantly adapt its nuclear forces in Europe and the Indo-Pacific to improve the credibility of its extended deterrence threats and assurance efforts.³⁹

Second, U.S. officials should recognize the importance of in-theater forces for extended deterrence and assurance, even during times of reduced threat perceptions. Many U.S. and NATO officials emphasized the importance, even increased importance, of sub-500 km range U.S. tactical nuclear weapons after the ratification of the INF Treaty. When it appeared such forces would be reduced or eliminated, U.S. and allied officials emphasized the importance of regionally-deployed capabilities, like TLAM-N. As Secretary of Defense Schlesinger stated in an interview during the Cold War, "There is no substitute for a battlefield weapon, except for a weapon deployed near the battlefield."⁴⁰

The requirements for deterrence and assurance are still being set in the emerging twonuclear peer threat environment with Russia and China; but, should the United States heed the lessons of the INF Treaty, Washington has the opportunity to coordinate and tailor responses to adversary developments in ways that advance U.S. national interests and those of its allies. Should U.S. officials prove willing to grant greater focus and effort on meeting the extended deterrence and assurance requirements of U.S. allies, the United States might improve both its short-term and long-term security outlooks in a threat environment where such advantages may prove decisive.

⁴ Ibid., p. 172.

⁵ "Treaty Between The United States Of America And The Union Of Soviet Socialist Republics On The Elimination Of Their Intermediate-Range And Shorter-Range Missiles (INF Treaty)," *State.gov*, no date, available at https://2009-2017.state.gov/t/avc/trty/102360.htm.

⁶ Loc cit.

⁷ Edward Rowny, as quoted in, U.S. Senate, *The INF Treaty, Part 1* (Washington, D.C.: United States Senate, Committee on Foreign Relations, January 27, 1988), p. 246.

⁸ Peter Carington, *Reflections on NATO: 1984-1988* (Brussels, BE: NATO, June 2, 1988), p. 4, available at https://archives.nato.int/uploads/r/null/1/4/141438/STATEMENT_CARRINGTON_1988-06-02_ENG.pdf.

⁹ On the number of missiles captured under the INF Treaty for both the United States and the Soviet Union, see, U.S. Department of State, "Memorandum Of Understanding Regarding The Establishment Of The Data Base For The

¹ One of the Reagan Administration's first National Security Decision Directives was on the subject of intermediaterange nuclear forces. See, Ronald Reagan, *National Security Decision Directive 15: Theater Nuclear Forces, Intermediate-Range Nuclear Forces* (Washington, D.C.: The White House, November 16, 1981), p. 1, available at https://www.reaganlibrary.gov/public/archives/reference/scanned-nsdds/nsdd15.pdf.

² For more on the development and capabilities of the SS-20, see, Steven J. Zaloga, *The Kremlin's Nuclear Sword: The Rise and Fall of Russia's Strategic Nuclear Forces*, 1945-2000 (Washington, D.C.: Smithsonian Books, 2002), pp. 171-173. ³ Ibid., p. 171.



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¹⁰ Colin S. Gray, War, Peace, and Victory (New York: Simon & Schuster, 1990), p. 284.

¹¹ James R. Schlesinger, "Prepared Statement of James R. Schlesinger," in U.S. Senate, *The INF Treaty, Part* 2 (Washington, D.C.: U.S. Senate, Committee on Foreign Relations, February 2, 1988), p. 377.

¹² William R. Van Cleave, as quoted in, U.S. Senate, *The INF Treaty, Part 3* (Washington, D.C.: United States Senate, Committee on Foreign Relations, February 19, 1988), pp. 159-160.

¹³ Gray, War, Peace, and Victory, op. cit., p. 285.

¹⁴ Edward Rowny, as quoted in, U.S. Senate, *The INF Treaty, Part 1*, op. cit., p. 286.

¹⁵ John Warner, "Prepared Statement of Senator John Warner," in, United States Senate, *NATO Defense and the INF Treaty* (Washington, D.C.: United States Senate, Committee on Armed Services, February 16, 1988), p. 179.

¹⁶ Paul C. Warnke, as quoted in, U.S. Senate, The INF Treaty, Part 3, op. cit., p. 174.

¹⁷ Frank C. Carlucci, *Annual Report to the Congress, Fiscal Year* 1990 (Washington, D.C.: Department of Defense, January 17, 1989), p. 193, available at

https://history.defense.gov/Portals/70/Documents/annual_reports/1990a_DoD_AR.pdf?ver=2014-06-24-151621-343.

¹⁸ Ibid., p. 194.

¹⁹ Loc cit.

²⁰ Loc cit.

²¹ Peter Carington, *Reflections on NATO: 1984-1988* (Brussels, BE: NATO, June 2, 1988), p. 5, available at https://archives.nato.int/uploads/r/null/1/4/141438/STATEMENT_CARRINGTON_1988-06-02_ENG.pdf.

²² Peter Carington, NATO: Benefits and Burdens (Bonn, GE: NATO, May 5, 1988), p. 4, available at

https://archives.nato.int/uploads/r/null/1/4/141410/STATEMENT_CARRINGTON_1988-05-05_ENG.pdf. ²³ North Atlantic Treaty Organization, *The North Atlantic Treaty Organization: Facts and Figures, An Alliances for the* 1990's (Brussels, BE: NATO, 1989), pp. 454, 456.

²⁴ On support for Lance, see Carlucci, *Annual Report to Congress, Fiscal Year 1990*, op. cit., p. 194.; and on Bush's decision to cut FOTL, see, Susan J. Koch, *The Presidential Nuclear Initiatives of 1991-1992* (Washington, D.C.: National Defense University, September 2012), p. 6, available at

https://ndupress.ndu.edu/portals/68/documents/casestudies/cswmd_casestudy-5.pdf.; and, Dick Cheney, *Annual Report to the President and the Congress* (Washington, D.C.: Department of Defense, January 1991), p. 57, available at https://history.defense.gov/Portals/70/Documents/annual_reports/1991_DoD_AR.pdf?ver=2014-06-24-151830-167.

²⁵ Koch, The Presidential Nuclear Initiatives of 1991-1992, op. cit., p. 11.

²⁶ Loc cit.

²⁷ U.S. Department of Defense, *Nuclear Posture Review Report* (Washington, D.C.: Department of Defense, April 2010), p. 28, available at

https://dod.defense.gov/Portals/1/features/defenseReviews/NPR/2010_Nuclear_Posture_Review_Report.pdf. ²⁸ Amy F. Woolf, *Nonstrategic Nuclear Weapons* (Washington, D.C.: Congressional Research Service, March 7, 2022), pp. 23-24, available at https://crsreports.congress.gov/product/pdf/RL/RL32572/46.

²⁹ Information collected from, Government Accountability Office, U.S. *Military Presence in Europe: Issues Related to the Drawdown* (Washington, D.C.: GAO, 1993), p. 13, available at https://www.gao.gov/assets/t-nsiad-93-3.pdf.; and, Government Accountability Office, *Military Readiness: Effects of a U.S. Military Presence in Europe on Mobility Requirements* (Washington, D.C.: GAO, 2001), p. 1, available at https://www.gao.gov/assets/gao-02-99.pdf.



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³⁰ Alexander A. Burnett, "21st TSC assists movement of last main battle tanks out of Europe," *Army.mil*, April 5, 2013, available at

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³¹ Daniel Coats, "Director of National Intelligence Daniel Coats on Russia's Intermediate-range Nuclear Forces (INF) Treaty Violation," *DNI.gov*, 2018, available at https://www.dni.gov/index.php/newsroom/speechesinterviews/speeches-interviews-2018/3270-director-of-national-intelligence-daniel-coats-on-russia-s-inf-treatyviolation.

³² C. Todd Lopez, "U.S. Withdraws From Intermediate-Range Nuclear Forces Treaty," *Defense.gov*, August 2, 2019, available at https://www.defense.gov/News/News-Stories/article/article/1924779/us-withdraws-from-intermediate-range-nuclear-forces-treaty/.

³³ U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China* (Washington, D.C.: Department of Defense, 2023), p. 67, available at https://media.defense.gov/2023/Oct/19/2003323409/-1/-1/1/2023-MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA.PDF.

³⁴ The United States recently deployed the Typhon missile as part of a series of exercises to The Philippines, a capability that reportedly has a 1,600 kilometer range. It is unclear at the time of this writing how long this missile type will remain deployed there, but it is not believed to be a permanent duty station. Brad Lendon, "US Sends Land-attack Missile System to Philippines for Exercises in Apparent Message to China," *CNN*, April 22, 2024, available at https://www.cnn.com/2024/04/22/asia/us-land-attack-missile-philippines-china-intl-hnk-ml/index.html.; and, U.S.-China Economic and Security Review Commission, 2023 Annual Report to Congress (Washington, D.C.: U.S.-China Economic and Security Review Commission, November 2023), p. 455, available at

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³⁵ Patrick Tucker, "US to Deploy New Land-based Missiles, Army's Pacific Commander Says," *Defense One*, November 19, 2023, available at https://www.defenseone.com/technology/2023/11/us-deploy-new-land-based-missiles-armys-pacific-commander-says/392137/.

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³⁸ U.S. Department of Defense, Nuclear Posture Review Report, op. cit., p. 30.

³⁹ Artur Kacprzyk, NATO Nuclear Adaptation: Rationales for Expanding the Force Posture in Europe (Warsaw, PL: Polish Institute of International Affairs, November 23, 2023), available at https://www.pism.pl/publications/nato-nuclearadaptation-rationales-for-expanding-the-force-posture-in-europe.; and, Peter K. Lee and Kang Chungku, *Comparing Allied Public Confidence in U.S. Extended Nuclear Deterrence* (Seoul, SK: The Asan Institute for Policy Studies, March 27,



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⁴⁰ James Schlesinger, as quoted in, "Interview with James Schlesinger, 1987, Part 2," *GBH Archives*, October 28, 1987, available at https://openvault.wgbh.org/catalog/V_3828CDDC8A064FC69F1DF92E6D1AD7E6.

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