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Global Nuclear Weapons Environment

Subcommittee on Strategic Forces, Committee on Armed Services, United States Senate, One Hundred Fifteenth Congress, First Session

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C. Robert Kehler
Former Commander
United States Strategic Command
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Keith B. Payne
Professor And Department Head
Defense Strategic Studies, Missouri State University
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Gary S. Samore
Executive Director For Research
Belfer Center For Science And International Affairs, Harvard Kennedy School
[Written Testimony Unavailable]

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THE SENATE ARMED SERVICES COMMITTEE SUBCOMMITTEE ON STRATEGIC FORCES

STATEMENT OF

GENERAL C. ROBERT KEHLER

UNITED STATES AIR FORCE (RETIRED)

BEFORE THE

SENATE ARMED SERVICES COMMITTEE SUBCOMMITTEE ON STRATEGIC FORCES

8 MARCH 2017

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THE SENATE ARMED SERVICES COMMITTEE SUBCOMMITTEE ON STRATEGIC FORCES

Chairman Fischer, Ranking Member Donnelly, and distinguished members of the subcommittee, I am honored to join you today to offer my personal perspective on the global nuclear weapons environment. The views I express today are mine and do not represent the Department of Defense, United States Strategic Command, or the United States Air Force.

As I begin I want to thank you for the support you provided to me and the people I was privileged to command while I served at Air Force Space Command and United States Strategic Command, and for your continued focus on these important matters.

21st Century Security Environment

We live in highly uncertain and complex times and I continue to believe that a robust strategic deterrent composed of missile defenses, leading-edge conventional and non-kinetic capabilities, modern nuclear forces, assured command and control, effective intelligence collection and support, and highly trained and well-led people will be needed to underwrite US national security and to assure the security of our allies and partners for as far into the future as I can see.

Threats to our security and the security of our allies are diverse, can arrive at our doorsteps quickly, and can range from small arms in the hands of terrorists to nuclear weapons in the hands of hostile state leaders. Yesterday's regional battlefield is becoming tomorrow's global battle-space where conflicts may begin in cyberspace and quickly extend to space...most likely before traditional air, land, and sea forces are engaged. Adversaries are acquiring technologies and exploiting the interconnected nature of our world to quickly transit political,

geographic, and physical boundaries. The possible intersection of violent extremism and weapons of mass destruction remains a significant concern that requires constant vigilance.

State and non-state actors alike stress our intelligence capabilities and contingency plans by employing highly adaptive, hybrid combinations of strategies, tactics, and capabilities and by using the speed of information to further their cause and mask their activities behind a veil of deception and ambiguity. New capabilities like cyber weapons and unmanned vehicles are emerging and familiar weapons like ballistic missiles and advanced conventional capabilities are more available, affordable, and lethal.

Current events remind us that we must continue to pursue and destroy violent extremists and their networks while remaining constantly on guard to prevent and respond to attacks from them. Beyond violent extremists, state adversaries are seeking to change the strategic situation in their favor by threatening the US and allied homelands below the nuclear threshold with attack by long-range conventional and cyber weapons, while preserving the capability to escalate to nuclear weapons with a variety of options from limited to major attacks.

This type of “integrated” strategic threat is completely different from the Cold War when strategic attack was synonymous with nuclear attack. When used in concert with capabilities designed to degrade our key operational enablers (e.g., space-based ISR and communications) and negate our conventional power projection capabilities, state adversaries believe a credible threat to escalate a conflict to the strategic level against the US homeland and the homelands of our allies will raise the risks and costs of US intervention to unacceptable

levels, force the US to the sidelines, fracture our alliances, and thereby enable more assertive foreign policies and aggressive actions. Nuclear weapons underwrite their approach.

Even discounting for hyperbole, recent public reports validate what I saw while on active duty. Violent extremists continue to evolve and present an active threat. Russia and China are both upgrading their significant long-range conventional strike capabilities and exercise them routinely; both are active in cyberspace; both are deploying the means to threaten our national security space assets; both are improving their anti-access/area denial capabilities to challenge our forward-deployed and power projection forces; and both can quickly inflict enormous casualties and damage on the US and our allies with nuclear forces that they are modernizing. Although I believe the likelihood of a massive surprise nuclear attack is low today (and still must be deterred), I am troubled by statements from Russia and elsewhere that describe the possible limited use of nuclear weapons in regional conflicts.

Beyond Russia and China, North Korea routinely threatens its regional neighbors, US territory, and US forward forces with conventional and nuclear attack and is aggressively working to deploy its weapons on intercontinental-class missiles to threaten the US directly. India and Pakistan raise the potential of nuclear use in their disputes. Active conflict and unrest continue elsewhere.

In my view, we cannot deal with any of today's adversaries in a "one size fits all" manner. Deterring dangerous actors with widely different motivations, objectives, and capabilities requires us to carefully tailor our strategies, plans and capabilities. Deterrence strategies that are the preferred ways to counter a nation-state will likely not be effective

against violent extremists where direct action is often the only recourse. Nuclear weapons may not be the most credible deterrence tool in some scenarios where they were once the preferred (sometimes the only) option. Therefore, we must match our strategies, plans, and capabilities to individual actors and deploy a range of conventional, non-kinetic, and nuclear capabilities that can either deter (always the preferred outcome) or, if necessary, defeat them in multiple scenarios. Similarly, we must also synchronize our extended deterrence strategies and plans with the unique needs of our allies and partners.

The Enduring Role of US Nuclear Weapons

A long-held view of deterrence theory suggests that deterrence exists when an adversary believes they cannot achieve their objectives, will suffer unacceptable consequences if they try, or both. It is based on an adversary's understanding of the capability and resolve of their potential enemy. Ultimately, deterrence is about human beings, what they value, and what they believe.

The end of the Cold War allowed the US to reduce the role and prominence of nuclear weapons in our defense planning and to dramatically reduce both the number of deployed weapons and the overall size of our stockpile. As several of my predecessors at United States Strategic Command and I recently stated: "Today's nuclear triad is far smaller and postured much less aggressively than its Cold War ancestor. Shaped by presidential initiatives and arms reduction agreements, by 2018 the number of weapons deployed on triad systems will be barely one-tenth of Cold War highs. Heavy bombers and supporting tankers are no longer loaded and poised to take off with nuclear weapons, and ballistic missiles are aimed at open

areas of the ocean. Theater nuclear forces have been reduced to a small number of dual-capable aircraft supporting the NATO alliance.”ⁱ In addition, policymakers have refined the US position on the potential use of nuclear weapons (extreme circumstances where vital national interests are at stake) and have restated the US commitment to the negative security guarantee contained in the Nuclear Non-Proliferation Treaty.

Nevertheless, nuclear weapons continue to play a critical role in our security strategy and the strategies of our key allies and partners as the ultimate guarantor of national survival. While no longer needed to deter a conventional attack from the massed armored formations of the now extinct Warsaw Pact, nuclear weapons continue to prevent both the coercive and actual use of these weapons against us (their primary objective), constrain the scope and scale of conflict, obviate the need for additional allies and partners to acquire their own, and compel potential adversary leaders to consider the implications of their actions before they act. Highly precise conventional weapons, non-kinetic capabilities, and defenses all play an increased deterrent role today; but I believe history shows that conventional weapons have never had the same overall deterrent effect as nuclear weapons and, therefore, cannot serve as a large-scale replacement. The ultimate paradox of the nuclear age is still with us—to prevent their use, we must remain credibly prepared to use them.

Going Forward

The Cold War has been over for more than 25 years and as tempting as it is to look backward to that time as the basis for today’s solutions (especially those involving nuclear weapons), we must recognize that little in today’s world is the same. I am concerned when I

hear the words *new cold war* used to describe either the current situation or a suggestion of our response to it. While many of the concepts sound the same, how we understand our adversaries and develop approaches to deter them must be based on a clear-eyed assessment of them and the realities of the 21st Century; not the mid-point of the 20th Century. Nuclear weapons remain foundational to our security, but nuclear weapons are only one of many important instruments that must be carefully orchestrated for maximum deterrent credibility and effect today.

US nuclear strategy and policy have been remarkably consistent over the decades. Changes have been evolutionary and not revolutionary and, thus, I believe the US and Russia have been able to establish a pathway that has dramatically reduced the nuclear threat while maintaining stability and deterrence credibility. Arms reduction and other efforts have verifiably reduced the stockpiles while promoting mutual visibility and understanding. Nuclear policy and employment strategy have been revised to meet today's deterrence needs, including the full consideration of conventional and non-kinetic strike capabilities in plans and options. But nuclear weapons are not gone from world affairs and are not likely to be gone anytime soon. The US is at a critical juncture regarding the future of our nuclear deterrent and, as numerous studies and reports have shown, we are out of margin.

The time to act has arrived. Again, as my colleagues and I recently said: "The last concentrated investment to modernize the triad came during the Reagan administration. We continue to rely on that era's Ohio-class ballistic missile submarines (SSBNs), missiles, and B-2 bombers today as well as B-52s, Minuteman ICBMs, Air Launched Cruise Missiles (ALCMs), and command and control systems that were designed and fielded far earlier. Even with periodic

upgrades and life extensions, legacy systems that were conceived and deployed over three decades ago are reaching the inevitable end of their service lives.”ⁱⁱ

A bipartisan consensus to modernize the triad, dual-capable aircraft, the nuclear weapons industrial complex, and the nuclear command/control/communications system has been carefully built between the Department of Defense and Congress. I fully support the triad and the nuclear modernization proposals that have been described in recent budgets, and hope the upcoming Nuclear Posture Review validates these plans and restates the sense of urgency needed to carry them out.

The modernization plans that are before you address the significant issues that exist in the nuclear enterprise. Weapon life extension programs will ensure the deployed force remains safe, secure, and effective. Modernizing the unique and highly specialized nuclear weapon industrial complex will sustain the deployed force and, with adoption of the 3+2 strategy, will allow us to further reduce the stockpile while retaining the critical capabilities and skills needed to respond to an uncertain future. Revitalizing the triad and dual-capable aircraft will continue to present an attacker with insurmountable attack and defensive problems along with the certainty of an effective response, provide the president with a range of options to deal with a crisis or conflict, and provide an effective hedge against technical failures or geopolitical uncertainty. Upgrading the nuclear command, control, and communications system will ensure the president remains linked to the forces for positive control.

In addition to the modernization plans already proposed, I would also highlight several other important needs for your consideration.

- Better adaptive planning capabilities to meet emerging (and possibly unforeseen) scenarios in a crisis or conflict.
- Increased attention to new threats like cyber weapons, inside actors, and drones.
- More emphasis on enhancing the resilience of critical space and network infrastructures.
- More effective integration of cross-domain capabilities.
- Prototyping and other steps to retain critical skills in nuclear weapon design and manufacture.

While I think the renewed discussion about strategic deterrence and nuclear weapons is long overdue, such discussion can become harmful if the result is confusion or paralysis. In my estimation, policy makers across several administrations have sent conflicting signals regarding the continued value of the US nuclear deterrent and the necessity and cost of its modernization. Clarity and commitment regarding nuclear weapons, their continued foundational role in US and allied defense strategy, and the investment needed to sustain them are as important now as they ever were during the Cold War. Deterrence credibility and national security demand it.

ⁱ Gen. C. Robert Kehler, Gen. Larry D. Welch, Adm. James O. Ellis, Gen. Kevin P. Chilton, Adm. Cecil D. Haney, Adm. Henry G. Chiles, Gen. Eugene E. Habiger, Adm. Richard W. Mies, Open Letter, "The U. S. Nuclear Triad Needs an Upgrade," The Wall Street Journal, 12 January 2017, p. A17.

ⁱⁱ Ibid.

The Global Nuclear Weapons Environment

Hearing, Strategic Forces Subcommittee, Senate Arms Services Committee
March 8, 2017

Prepared Statement By:

Dr. Keith B. Payne
Department Head and Professor, Graduate Department of Defense and Strategic Studies
Missouri State University

The forthcoming Nuclear Posture Review (NPR) will confront two overarching questions: First: what are the changes in the security environment since the 2010 NPR? And, second, what do these changes suggest regarding US policies and requirements?

My remarks along these lines today focus on Russia, but there are important parallels with regard to US-Chinese relations that we can discuss as well.

The most fundamental point is that threat conditions have worsened dramatically since the 2010 NPR. Indeed, each of the three previous NPRs presumed an increasingly benign new world order in which nuclear weapons and deterrence would play a declining role. The predominant view was that the post-Cold War world was moving beyond nuclear weapons, and that nuclear deterrence was increasingly irrelevant to US relations with Russia and China.¹ In this more benign new world the highest priority of US nuclear policy was nonproliferation and the reduction of US nuclear forces and their roles was deemed critical to advance that priority goal.²

The overarching US policy direction that followed from these beliefs was that US nuclear forces and deterrence were of greatly-declining value, and correspondingly, their salience and numbers should be lowered on a continuing and progressive basis.

¹It is difficult to overstate the certainty that attended this policy direction. It was reflected in a highly-regarded 1991 *Foreign Affairs* article written by three senior former officials and authors, including the late Robert McNamara. To wit, hostility with Russia was described as, “hardly more likely to be revived than the religious wars of the sixteenth and seventeenth centuries between Catholics and Protestants in Europe,” Carl Kaysen, Robert S. McNamara, and George W. Rathjens, “Nuclear Weapons After the Cold War,” *Foreign Affairs*, Vol. 70, No. 4 (Fall 1991), p. 96. Over two decades later, the Global Zero Commission study, chaired by a former Vice Chairman of the JCS, similarly said, “The risk of nuclear confrontation between the United States and either Russia or China belongs to the past, not the future.” James Cartwright, Chair, Global Zero U.S. Nuclear Policy Commission, *Modernizing U.S. Nuclear Strategy, Force Structure and Posture* (Washington, D.C.: Global Zero, May 2012), p. 6, available at http://www.globalzero.org/files/gz_us_nuclear_policy_commission_report.pdf

²U.S. Department of Defense, *2010 Nuclear Posture Review Report* (Washington, D.C.: Department of Defense, April 2010), pp. i, iii-vii, available at https://www.defense.gov/Portals/1/features/defenseReviews/NPR/2010_Nuclear_Posture_Review_Report.pdf.

Unfortunately, it is now clear that the expected benign new world order has been overtaken by reality,³ including particularly blatant Russian and Chinese drives to overturn the existing political order in Europe and Asia respectively, and the decade-long expansion of nuclear capabilities pursued by both Moscow and Beijing. Today's stark reality is demonstrated by Russia's call for a new "post-West" world order,⁴ its continuing aggression against Ukraine and explicit nuclear first-use threats against NATO states and neutrals.⁵

The Putin regime has sought repeatedly to coerce the West with threats of nuclear first-use employment. According to Russian military writings and exercises, as reported, the West is expected to concede in the face of Russian nuclear escalation threats or limited nuclear first use.⁶

Correspondingly, Russia is not interested in limiting its theater conventional or nuclear forces and has deployed a nuclear-capable cruise missile, reportedly the SSC-8, in direct violation of the 1987 INF Treaty.⁷ According to Col. Gen. Sergei Ivanov, then-Kremlin Chief of Staff, Russia has little incentive for further nuclear arms control negotiations with the United States because Russian systems "are relatively new" while the United States has "not conducted any upgrades for a long time."⁸ Unfortunately, this type of characterization of US nuclear arms is not controversial.⁹

³ So much so that Sweden has decided to return to military conscription, and the Swedish Defense Minister, Peter Hultquist, has acknowledged: "Politicians at the time maybe thought that the future would be more sunny than the reality is today... The security situation and what could come in the future was underestimated." See Martin Selsoe Sorensen, "Sweden Reinstates Conscription, With an Eye on Russia," *The New York Times*, March 2, 2017, available at https://www.nytimes.com/2017/03/02/world/europe/sweden-draft-conscription.html?_r=0.

⁴ Russian Foreign Minister Sergei Lavrov, quoted in, Hui Min Neo, Bryan McManus, "US Pledges 'Unwavering' Commitment, Europe Lukewarm," AFP, February 18, 2017, at <https://www.yahoo.com/news/pence-caps-week-us-diplomatic-efforts-calm-allies-0558127929.html>.

⁵ Then-Commander of the US European Command, Gen. Philip Breedlove, said in Feb. 2016, "Russia's continued aggressive actions and malign influence remain a top concern for our nation and my highest priority as EUCOM Commander." General Philip Breedlove, Commander, U.S. European Command, U.S. European Command Posture Statement 2016, February, 25, 2016, at <http://www.eucom.mil/media-library/article/35164/u-s-european-command-posture-statement-2016>.

⁶ See for example, Keith Payne and John Foster, *Russian Strategy: Expansion, Crisis and Conflict* (Fairfax, VA: National Institute Press, 2016). See also, Dave Johnson, "Nuclear Weapons in Russia's Approach to Conflict," *Recherches & Documents*, No. 6 (November 2016), p.13, at www.FRSTRATEGIE.org.

⁷ Reported in, Michael Gordon, "Russian Cruise Missile, Deployed Secretly, Violates Treaty, Officials Say," *The New York Times*, February 14, 2017, at <https://www.nytimes.com/2017/02/14/world/europe/russia-cruise-missile-rms-contorl-treaty.html?ref=collection%2Fbyline%2Fmichael-r.-gordon>. See also, Adm. Harry Harris, Commander, U.S. Pacific Command, *The View from the Indo-Asia-Pacific*, WEST 2017 Conference Lunch Keynote, San Diego, CA, February 21, 2017, p. 4, available at <http://www.pacom.mil/Meida/Speeches-Testimony/Article/1089966/west-2017-keynote-the-view-from-the-indo-asia-pacific/>.

⁸ "Russia today is not interested in U.S.-proposed arms reduction – Sergei Ivanov," *Interfax*, March 5, 2013. (Transcribed by World News Connection).

⁹ The Commander of US Strategic Command, Gen. John Hyten, has rightly described US strategic nuclear forces: "All our stuff is old. It's still ready, safe, secure, reliable. But it's old." See, "Hyten: Modernize, Don't Increase Number of Nukes," *Air Force Magazine*, March 2, 2017, available at <http://airforcemag.com/DRArchive/Pages/2017/March%202017/March%2002%202017/Hyten-Modernize,-Don't-Increase-Number-of-Nukes.aspx>,

Russia's coercive nuclear threats and reported planning for nuclear first use presents a profound new challenge for Western deterrence and assurance strategies.¹⁰ This is not speculation about some dark future; this challenge is here and now.¹¹ In response, some European officials, including in Germany, reportedly now are discussing an independent nuclear "Euro-deterrent,"¹² and NATO's Deputy Supreme Allied Commander, Sir Adrian Bradshaw, describes the current threat context in stark terms: "The threat from Russia is that through opportunism and mistakes and a lack of clarity regarding our deterrence we find ourselves sliding into an unwanted conflict which has existential implications."¹³

Consequently, priority goals for the forthcoming US Nuclear Posture Review must be to: 1) understand Russian goals and strategy; 2) understand why Moscow believes it has exploitable advantages that now enable it to change the post-Cold War order and issue coercive nuclear first-use threats, and; 3) identify in light of those goals and beliefs how the West can effectively deter Moscow and assure allies. I will take just a few minutes to address these questions.

First, based on open Russian writings and speeches over years, it is clear that Moscow is driven to correct what it perceives to be the geopolitical injustices of the post-Cold War order forced on it by the West in Russia's time of weakness. President Putin famously called the collapse of the Soviet Union the greatest catastrophe of the Twentieth Century.¹⁴

The West supposedly has pushed Russia too far and has further highly-aggressive designs against Russia, including regime change. Consequently, the Putin regime is rearming Russia and changing European borders with the expressed goal of overturning the despised post-Cold War settlement and restoring Russia's power position. This combination of Russian goals and perceptions make friction with the West inevitable: it carries the potential for high stakes conflict and even nuclear escalation.

¹⁰ There are many open discussions regarding allied concerns. See for example, Bradley Peniston, "A Key NATO Ally Looks Nervously at Putin—And Trump," *Defense One*, January 23, 2017, at <http://www.defenseone.com/threats/2017/01/key-nato-ally-looks-nervously-putin-and-trump/134765/>

¹¹ Given these unfortunate realities, key Obama administration officials rightly concluded that we are now playing catch-up as the modernization of US nuclear capabilities is priority number one for the deterrence of enemies and the assurance of allies. As a 2016 DoD report states: "The nuclear deterrent is the DoD's highest priority mission," Department of Defense, Office of the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, *Strategic Planning Guidance FY 2018-2022*, February 2016, p. 2. And, As former Secretary of Defense Carter noted in November 2016, "While we didn't build anything new for 25 years, and neither did our allies, others did—including Russia, North Korea, China, Pakistan, India, and for a period of time, Iran. We [now] can't wait any longer." Quoted in, Jamie McIntyre, "Carter Says Nuclear-Armed Foes Catching Up to the US," *Washington Examiner*, November 3, 2016, at <http://www.washingtonexaminer.com/carter-says-nuclear-armed-foes-catching-up-to-the-us/article/2606380>.

¹² Max Fisher, "Fearing U.S. Withdrawal, Europe Considers Its Own Nuclear Deterrent," *The New York Times*, March 6, 2017, available at <https://www.nytimes.com/2017/03/06/world/europe/european-union-nuclear-weapons.html>.

¹³ Sam Jones, "Nato and EU need 'grand strategy' to resist Putin, says general," *Financial Times*, March 2, 2017, available at <https://www.ft.com/content/e8dc5f7c-ff67-11e6-8d8e-a5e3738f9ae4>.

¹⁴ Andrew Osborn, "Putin: Collapse of the Soviet Union was 'catastrophe of the century,'" *The Independent*, April 26, 2005, available at <http://www.independent.co.uk/news/world/europe/putin-collapse-of-the-soviet-union-was-catastrophe-of-the-century-521064.html>.

Further, Russia believes it has the capability and the will to overturn the status-quo, while it doubts NATO's resolve to resist *if Russia poses the threat of war and nuclear coercion*. Moscow's self-image, in addition to its skepticism regarding NATO's resolve threaten deterrence in Europe and understandably frightens our allies.

I am *not* suggesting here that Russia wants war or is cavalier about the prospect of nuclear war. However, Moscow's perception of an asymmetry in resolve and readiness to risk war is key to the potential for deterrence failure in Europe and the need to assure threatened allies.

In short, Russia appears to have some felt-freedom to move against the West given its perception of this asymmetry of need, will and power. Just how much freedom Russia believes it has to expand its position and how it will act with that freedom likely depends on Moscow's calculations of NATO's determination, readiness and power to resist. That is a calculation the West can affect by its statements and actions.

For example, some commentators assert that the Putin regime has dangerous designs on the Baltic states, others say it has no such designs. My point is that there probably is not a fixed answer to this question regarding Russia's readiness to act on its aspirations and perceptions of advantage. Rather the Putin regime is pragmatic and the West can act to limit Moscow's agenda and actions vis-à-vis the Baltic states and elsewhere. This possible constraint on Moscow is what makes Russia today different from Germany of the late 1930s, and why strengthening NATO's deterrence position is so critical.

What are the implications of these realities for Western deterrence and assurance strategies and requirements? The most basic need is for US policies and forces that are of sufficient size and flexibility to adapt as necessary to an increasingly hostile and dynamic nuclear threat environment.¹⁵ That principle alone is very different from the previous dominant post-Cold War policy direction which sought largely to reduce and constrain US nuclear capabilities on a continuing basis.

But, more specifically, the West must end Russian misperceptions that Moscow's will and readiness to break the West at the risk of war are greater than the West's will and readiness to prevent it from doing so.

We can help in this regard with consistent, resolute alliance-wide declaratory policies, along with relevant exercises, that signal a message of resolve to Moscow that the United States and NATO will not prove wobbly, even *under Moscow's coercive nuclear threats*, i.e., the West must deny Moscow any expectation of an exploitable advantage in political will.

A useful example of a helpful declaratory policy was provided in 2016 by the then-new British Prime Minister, Theresa May. When asked in Parliament if she would ever authorize a

¹⁵ This need for adaptability has been emphasized by the Trump Administration's National Security Advisor, Lt. Gen. H.R. McMaster. See, *Strategy, Policy and History*, Lieutenant General H.R. McMaster, U.S. Army, Moderator: Dr. Mark Moyar, Foreign Policy Initiative, FPI Forum Transcript, November 20, 2016, p. 10.

nuclear strike given the dangers involved, she responded yes without hesitation. Prime Minister May added, “The whole point of a deterrent is that our enemies need to know that we would be prepared to use it. . . We must send an unequivocal message to any adversary that the cost of an attack on our United Kingdom or our allies will be far greater than anything it might hope to gain.”¹⁶ No doubt Moscow paid considerable attention to that unambiguous deterrence signal.

A related theme in Russian writings is Moscow’s apparent belief that Russia has exploitable nuclear and conventional force advantages over the West. These include greater, immediately-available local conventional force capabilities and readiness. President Putin has boasted that he can have Russian troops in five NATO capitals in two days.¹⁷ These perceived advantages also include Russian nuclear escalation options to which NATO is thought to have no response given Russian skepticism about the West’s will to resist.

The interaction here between increased Western non-nuclear defense preparedness in Europe and the perceived credibility of the West’s nuclear deterrent is important. In response to Russian threats and expansionism, Western efforts to deploy high-readiness, *non-nuclear* defensive capabilities to protect NATO front-line states from a Russian military fait accompli will likely reduce Moscow’s perceptions of exploitable advantage and also strengthen the credibility of US extended deterrence commitments. Why? Because doing so will deny Moscow’s perceptions of an easy Russian fait accompli and demonstrate united Western resolve to put itself on the line for this cause. The West understood this point well during the Cold War. To use Cold War terms, a conventional “plate glass door” that is understood by Moscow to lead to intolerable loss if it should attack can be of great value for deterrence.

The level of additional, forward-deployed NATO defensive capability needed for this deterrent purpose is an important question. Lt. Gen. Valery Zaparenko, a former deputy chief of the Russian General Staff commented recently in this regard, “You can’t deter much with a few battalions.”¹⁸ A pertinent 2016 RAND study concluded that: “Having a force of about seven brigades, including three heavy armored brigades—adequately supported by airpower, land-based fires, and other enablers on the ground and ready to fight at the onset of hostilities” might provide an adequate initial deterrent.¹⁹

¹⁶ Theresa May, as quoted in House of Commons Hansard, “UK’s Nuclear Deterrent,” *Parliament.uk*, July 18, 2016, available at <https://hansard.parliament.uk/Commons/2016-07-18/debates/16071818000001/UKSNuclearDeterrent?highlight=Care>.

¹⁷ Quoted in, Justin Huggler, “Putin ‘privately threatened to invade Poland, Romania and the Baltic states,’” *The Telegraph*, September 18, 2014, available at <http://www.telegraph.co.uk/news/worldnews/europe/russia/11106195/Putin-privately-threatened-to-invade-Poland-Romania-and-the-Baltic-states.html>.

¹⁸ Matthew Bodner, “No End In Sight for Russia’s Baltic Tit-for-Tat,” *The Moscow Times*, September 23, 2016, available at <https://themoscowtimes.com/articles/baltic-tit-for-tat-55434>.

¹⁹ David A. Shlapak and Michael W. Johnson, *Reinforcing Deterrence on NATO’s Eastern Flank: Wargaming the Defense of the Baltics* (Washington, D.C.: RAND Corporation, 2016), p. 1, available at https://www.rand.org/content/dam/rand/pubs/research_reports/RR1200/RR1253/RAND_RR1253.pdf.

The difference today, of course, is that NATO front-line states are former parts of the Soviet Union or former members of its Warsaw Pact. This point may be extremely significant because cognitive studies typically conclude that humans will accept greater risk to recover a value considered unfairly lost than to acquire a new gain. The leadership in Moscow clearly believes the West has inflicted great losses on Russia that must be recovered. This point suggests the challenge of deterring the Russian leadership in this second nuclear age; our Cold War approaches to deterrence are incomplete guides for contemporary deterrence strategies.

Because Moscow views nuclear escalation as an exploitable threat or act—based in part on its perceived ability to control escalation to its advantage—the West’s deterrence and assurance strategies can neither escape the nuclear dimension nor be limited to in-theater capabilities. There are no solely non-nuclear or wholly local fixes that can fully address NATO’s deterrence needs.

Some Western steps in this regard include:

- Modernizing the US nuclear triad, to include some very low-yield options on accurate US strategic missile systems,²⁰ and strengthening command and control systems;
- Deploying US national missile defense capabilities sufficient to deny any opponent a plausible strategy of coercing Washington via threats of limited nuclear attack²¹ (this step also is essential given the emerging North Korean ICBM threat to the United States);²²
- Advancing the delivery date of the nuclear-capable F-35 and B61-12 combination;²³
- Retaining the unique capabilities of the B61-11;
- Increasing NATO DCA survivability and readiness;²⁴
- Expanding DCA burden sharing, possibly by inviting personnel from additional NATO states to serve as DCA pilots;

²⁰ Defense Science Board, *Seven Defense Priorities for the New Administration* (Washington, D.C.: Defense Science Board, December 2016), p. 24, available at http://www.acq.osd.mil/dsb/reports/Seven_Defense_Priorities.pdf.

²¹ Tom Karako, Keith Payne, Brad Roberts, et. al., *Defense and Defeat: A Report of the CSIS Missile Defense Project* (New York: Rowman & Littlefield, March 2017), available at https://csis-prod.s3.amazonaws.com/s3fs-public/publication/170228_Karako_MissileDefenseDefeat_Web.pdf?oYefXIARU6HCqtRN3Zuq7mKljU3jllq.

²² The Chairman of the JCS, Gen. Joseph Dunford, recently observed, “Clearly we see now a combination of both intercontinental ballistic missile capability as well as an effort to put a nuclear warhead on that intercontinental ballistic missile. So North Korea not only threatens South Korea and not only threaten the region but now presents a threat to the homeland as well.” Dunford Speaks at Brookings Institution,” *Department of Defense*, February 23, 2017, available at <https://www.defense.gov/Video?videoid=511122>.

²³ See Orianna Pawlyk, “F-35 Could Carry B61 Nuclear Warhead Sooner Than Planned,” *Tech*, January 10, 2017, at <http://defensetech.org/2017/01/10/f-35-carry-b61-nuclear-warhead-sooner-planned/>.

²⁴ A December 2015 NATO report states that DCA aircraft, “are available for nuclear roles at various levels of readiness—the highest level of readiness is measured in weeks.” An earlier GAO Report to Congress places that time at 30 days. See respectively, *NATO’s Nuclear Deterrence Policy and Forces*, December 3, 2015, available at http://www.nato.int/cps/en/natohq/topics_50068.html; and GAO, Report to Congressional Requesters, *Nuclear Weapons: DOD and NNSA Need to Better Manage Scope of Future Refurbishments and Risks to Maintaining U.S. Commitments to NATO*, GAO-11-387, May 2011, p. 5.

- Ensuring that NATO conventional forces can survive and fight in the context of limited Russian nuclear escalation;
- Increasing the active and passive defense of key NATO nodes and assets against conventional and nuclear strike; and,
- Ensuring the capability to penetrate advanced defensive systems such as the S-500.

Finally, the development of “new” US nuclear capabilities should not be ruled out peremptorily by policy.²⁵ Increased US nuclear force numbers may well be *unnecessary*, but there are some plausible capabilities that could help reduce Moscow’s perceptions of exploitable advantages. It should be recalled that then-Commander of STRATCOM, General Kevin Chilton, observed publicly that the US nuclear force posture deemed adequate for the 2010 NPR was predicated on the assumptions that Russia would abide by its arms control treaty commitments, and that there would be no call for additional capabilities.²⁶ The Russians have since violated the former assumption, and the latter is now an open question given Moscow’s expansionism, buildup of new nuclear forces, and dangerous views of escalation.

The FY2016 NDAA’s discussion of the US Stockpile Responsiveness Program indicates that there is bipartisan support for, “...the policy of the United States to identify, sustain, enhance, integrate, and continually exercise all capabilities required to conceptualize, study, design, develop, engineer, certify, produce, and deploy nuclear weapons to ensure the nuclear deterrent of the United States remains safe, secure, reliable, credible, and responsive.”²⁷ Nevertheless, some commentators suggest that any “new” US nuclear capability would likely upset the delicate domestic political consensus in favor of US nuclear modernization, and thus must be rejected.²⁸ This domestic political concern may be valid and an important consideration, but any review of emerging policy and force needs should at least identify those steps that could serve to strengthen deterrence and assurance—even if a subsequent political decision is made to avoid such steps given anticipated domestic political costs. The prospective trade-offs of such a decision must be understood.

However that question is resolved, a more robust and unified Western declaratory policy should complement any new steps. The long-held policy notion that uncertainty and ambiguity with regard to Western deterrence strategy is adequate for deterrence needs to be reconsidered. The historical evidence is overwhelming that uncertainty and ambiguity sometimes are not adequate for deterrence. Rather, explicit and direct deterrence statements are necessary in some cases. As former Defense Secretary Leon Panetta recently observed, in some cases credible

²⁵ Defense Science Board, *Seven Defense Priorities for the New Administration*, op. cit. See also the comments by Air Force Chief of Staff, Gen. David Goldfein, in “Nuclear Posture Review Due in Spring: Air Force Chief,” *Exchange Monitor*, February 9, 2017, available at <http://www.exchangemonitor.com/publication/morning-briefing/nuclear-posture-review-due-spring-air-force-chief/>.

²⁶ Kevin Chilton, as quoted in, “Nuclear Posture Review,” 111th U.S. Congress, Senate Armed Services Committee, April 22, 2010, available at <https://www.gpo.gov/fdsys/pkg/CHRG-111shrg63689/html/CHRG-111shrg63689.htm>

²⁷ FY2016 NDAA, Sec. 4220(a), enacted December 23, 2016.

²⁸ James Acton, “Policy Outlook Panel,” Nuclear Deterrence Summit, Washington, D.C., February 28, 2017.

deterrence demands that the United States “make it very clear” that “we will respond in kind.”²⁹ Effective deterrence of the Putin regime may be such a case.

There is much more to say about these critical questions of post-Cold War deterrence and assurance, but I will stop at this point to stay within my allotted time. I look forward to your questions.

²⁹ Brian Everstine, “Thornberry: Expect Nuclear Tests During the Lame Duck,” *Air Force Magazine*, December 2, 2016, available at <http://www.airforcemag.com/DRArchive/Pages/2016/December%202016/December%2002%202016/Thornberry-Expect-Nuclear-Tests-During-the-Lame-Duck.aspx>.