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NATO's Nuclear Deterrent: Fit for Purpose?

Published in Volume 7, No. 3 (September 2023) of *SIRIUS (Zeitschrift für strategische Analysen, Journal for Strategic Analysis)* and available at www.degruyter.com/sirius. The text here is the English-language original that was translated into German for publication.

Introduction

For a long time, NATO did not have to concern itself greatly with this question. From 1991 to 2019, it saw itself as an alliance without enemies. Accordingly, collective defense (and, with it, deterrence) became relatively less important among the alliance's three core tasks. Greater importance attached instead to crisis management (in the Balkans and then Southwest Asia) and cooperative security (with Russia). Deterrence was not prominent in the alliance's Strategic Concepts of 1991, 1999, and 2010, though each recognized a continuing role for nuclear weapons in preserving the peace.¹

In this context, alliance leaders did not focus on the alliance's nuclear deterrent. In the 1990s and 2000s, meetings of the Nuclear Planning Group of defense ministers became infrequent and brief. This loss of focus had consequences for the deterrent. In 2008, an independent review board commissioned by then Secretary of Defense Robert Gates came to the stark conclusion that there had been at NATO "a serious erosion of senior-level attention, focus, expertise, mission readiness, resources, and discipline in the nuclear weapons mission."²

In the process of crafting a new Strategic Concept in 2009 and 2010, NATO discovered that deterrence issues remained controversial. NATO's newer members were strongly committed to stable and effective nuclear deterrence, while some of its older members wanted to retire what they deemed to be "cold war relics."³ Thus, NATO opted to deal with the deterrence agenda separately from the Strategic Concept. The resulting Deterrence and Defense Posture Review of 2012 was the alliance's first comprehensive assessment of the overall mix of capabilities for deterrence and defense. The review concluded that the then-existing mix of capabilities was appropriate. It did not, however, explain the basis of this judgment. It also promised further adaptation of the posture as needed to ensure it would remain "fit for purpose" in a changing security environment.⁴ In the aftermath of Russia's military-backed annexation of Crimea in 2014, allied leaders gave increased emphasis to efforts "to bolster deterrence as a core element of our collective defense," with adaptations largely in the alliance's conventional deterrent.⁵

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² *Report of the Secretary of Defense Task Force on DoD Nuclear Weapons Management: Phase II, Review of the DoD Nuclear Mission*, December 2008.

³ Remarks by Guido Westerwelle, then Germany's Foreign Minister and Vice Chancellor, to the 46th Munich Security Conference, February 6, 2010.

⁴ *Deterrence and Defense Posture Review*, NATO, May 20, 2012.

⁵ See summit communiqués beginning with Wales 2014.

President Vladimir Putin’s nuclear-backed aggression against Ukraine, including explicit nuclear threats to NATO, has put the alliance on an entirely different footing. The strategic concept adopted by the allies in Madrid in June 2022 recognizes that Russia poses a direct threat to the security of the allies.⁶ It reprioritizes collective security among the three core tasks, modifying it to explicitly include deterrence (“NATO’s three core tasks are deterrence and defense, crisis prevention and management, and cooperative security”).⁷ It also expresses the commitment of the allies to “significantly strengthen our deterrence and defense posture.”⁸ In discussing the alliance’s nuclear capabilities, it reaffirms “the unique and distinct role of nuclear deterrence” and asserts that “the Alliance has the capabilities and resolve to impose costs on an adversary that would be unacceptable and far outweigh the benefits that any adversary could hope to achieve.”⁹ But it also commits the allies to “take all necessary steps to ensure the credibility, effectiveness, safety, and security of the nuclear deterrence mission.”¹⁰

Looking ahead a decade, the nuclear challenges facing NATO seem likely to grow even further. When Russia finally emerges from the debacle in Ukraine, it will face a long period of rebuilding, both militarily and politically—which is likely to increase even further its reliance on nuclear weapons. Moreover, so long as President Putin remains in power, the probing of Western resolve seems likely to continue, and along with it a steady dose of nuclear-backed coercion. In addition, the decade may also see new challenges to NATO’s security from the erosion of the security environments in Northeast and Southwest Asia, including new nuclear challenges.

Is the alliance’s nuclear deterrent fit for purpose in this new context? Does the alliance have what it needs and, if not, what new steps are necessary? In order to answer these questions, this article explores four main questions: What is NATO’s nuclear deterrent? For what purposes must it be fit? For each of these purposes, are requirements met? If not, what must be done?

What Is NATO’s Nuclear Deterrent?

The 2022 Madrid Strategic Concept provides a succinct summary:

“The strategic nuclear forces of the Alliance, particularly those of the United States, are the supreme guarantee of the security of the Alliance. The independent strategic nuclear forces of the United Kingdom and France have a deterrent role of their own and contribute significantly to the overall security of the Alliance. These Allies’ separate centres of decision-making contribute to deterrence by complicating the calculations of potential adversaries. NATO’s nuclear deterrence posture also relies on the United States’ nuclear weapons forward-deployed in Europe and the contributions of Allies concerned. National contributions of dual-capable aircraft to NATO’s nuclear deterrence mission remain central to this effort.”¹¹

The “allies concerned” are all of the NATO allies but France, which opted not to re-join the Nuclear Planning Group (NPG) when it rejoined the NATO military command structure in 2009. Some allies host U.S. nuclear weapons on their soil and own and operate dual-capable fighter-bombers which

⁶ *NATO 2022 Strategic Concept*.

⁷ *Ibid.*, p. 1.

⁸ *Ibid.*, p. 1.

⁹ *Ibid.*, paragraphs 30 and 28.

¹⁰ *Ibid.*, paragraph 30.

¹¹ *Ibid.*, paragraph 29.

would employ U.S. nuclear weapons on the authority of the NPG and the U.S. president.¹² By these means, NATO allies share the benefits and burdens of nuclear deterrence (hence the term “NATO’s nuclear sharing arrangements”). Some other allies participate in the nuclear deterrence mission by preparing to provide conventional support to nuclear operations.

Dating to 1968, these sharing arrangements have been reaffirmed repeatedly by alliance leaders in very different security environments. Why? Collective nuclear defense sends a powerful deterrence message that an attack on one will be treated as an attack on all (by implicating numerous allies in the response to nuclear attack). The presence of American nuclear weapons in Europe implies that there cannot be nuclear conflict in Europe that does not directly engage U.S. forces and interests (that is, their presence is a tangible demonstration of the “transatlantic link”). In addition, the readiness and potential deployment and display of the alliance’s nuclear strike force are potent signals of allied intent to employ these weapons if their vital interests are in jeopardy.

But NATO’s nuclear deterrent is much more than military hardware. There is a significant software aspect as well, with varied elements. Declaratory policy has an essential role—that is, statements of intent by NATO and its leaders. For example, they regularly state that “any employment of nuclear weapons against NATO would fundamentally alter the nature of a conflict.”¹³ Statements of presidential intent by the leaders of NATO’s three nuclear-armed members play a reinforcing role.

NATO’s nuclear deterrence software also includes nuclear consultative procedures and mechanisms. Peacetime consultations by defense minister in the Nuclear Planning Group and deliberations in crisis and war by the North Atlantic Council help to ensure allied political control over nuclear employment decisions, thereby reinforcing the expectation that the interests and equities of all allies will be considered by an American president deliberating whether or not to employ nuclear weapons on behalf of an ally. In war, “a nuclear mission can only be undertaken after explicit political approval is given by NATO’s Nuclear Planning Group and authorization is received from the U.S. president and U.K. prime minister.”¹⁴

The software of deterrence also includes concepts and principles for the employment of nuclear weapons in war, operational plans and the associated planning processes, the knowledge base to support the development of principles, concepts, and plans, and exercises that demonstrate capabilities, concepts, and commitments.

Any assessment of the strength and effectiveness of NATO’s nuclear deterrent must account for both hardware and software.

Reasons to Worry

There are at least four reasons to worry that NATO’s nuclear deterrent may not be fit for purpose.

1. NATO’s current nuclear posture was designed 30 years ago for the benign unipolar 1990s. When the Cold War ended, as part of the reciprocal Presidential Nuclear Initiatives with the Soviet Union and then Russia, the United States in 1991 and 1992 withdrew almost all of its nuclear weapons from Europe (97 percent of the total)¹⁵ and reduced the types of forward-

¹² See NATO Factsheet on Nuclear Sharing Arrangements, February 2022, at: https://www.nato.int/nato_static_fl2014/assets/pdf/2022/2/pdf/220204-factsheet-nuclear-sharing-arrange.pdf

¹³ *NATO 2020 Strategic Concept*, paragraph 28.

¹⁴ NATO Factsheet on Nuclear Sharing Arrangements.

¹⁵ See the Report of the Secretary of Defense Task Force on DoD Nuclear Weapons Management, Phase II, Review of the DoD Nuclear Mission, December 2008, p. 59.

deployable weapons to one (the B61 gravity bomb).¹⁶ It also withdrew nuclear weapons from all naval surface combatants and nuclear cruise missiles from attack submarines. The latter were put into storage for possible redeployment in time of crisis and war and then retired in 2010 when they aged out. Over the intervening decades, there has been little or no apparent change to the number or types of weapons in the force or their location. The biggest change to the force is the modernization of both the bomb and the delivery system—which, once completed, will help to restore ground lost to improving adversary integrated air and missile defenses (IAMD).¹⁷

2. While NATO's nuclear force has been largely static, Russia's has not. Writing in 2010, the head of the Russian nuclear complex bragged that he had been mandated and funded "to build a nuclear scalpel for every military problem in Europe."¹⁸ In the interim, Russia has modernized and further diversified its capabilities for the employment of nuclear weapons against targets in Europe and it can now reach all of European territory with nuclear weapons deployed on air, land, and sea-based platforms.¹⁹ One think-tank analysis identifies 30 different delivery systems available for such use.²⁰ It will soon recover the dominant position it had achieved in 1980 prior to the implementation of NATO's dual-track decision—if it has not already done so. In combination with other improvements to its cyber, counterspace, and other strategic capabilities Russia, in the words of the 2022 National Defense Strategy, has "incorporated these capabilities and methods into an overall strategy that...seeks to exploit advantages in geography and time backed by a mix of threats to the U.S. homeland and to our allies and partners."²¹ Put differently, Russia has a well-developed theory of victory in conflict with the United States across the full spectrum (peacetime, crisis, and war) that gives nuclear weapons a central place.²² One result is a nuclear posture with substantial military flexibility and tailored for war with NATO.
3. A new demand signal for U.S. nuclear assets is taking shape in Asia. North Korea's continued progress in developing and fielding an operational nuclear force now poses an existential threat to U.S. allies in Northeast Asia and an increasingly significant threat to U.S. military forces in the region and to the American homeland. In addition, China's strategic breakout and accelerated growth and diversification of its nuclear forces also poses new threats to the United States and its allies. Part of the U.S. response to this new circumstance has been a

https://dod.defense.gov/Portals/1/features/defenseReviews/NPR/DOD_NW_Management_Phase_II_Schlesinger.pdf

¹⁶ Susan J. Koch, *The Presidential Nuclear Initiatives of 1991-1992*, Center for the Study of WMD (Washington, DC: National Defense University, 2012).

¹⁷ The modernized bomb is the B 61-12; see <https://www.energy.gov/sites/prod/files/2018/12/f58/B61-12%20LEP%20factsheet.pdf>. The modernized delivery system is the planned nuclear certification of the F-35 Joint Strike Fighter; see <https://www.af.mil/News/Article-Display/Article/2801860/f-35a-complete-5th-generation-fighter-test-milestone-with-refurbished-b61-12-nu/>.

¹⁸ Remarks attributed to Victor Mikhailov and cited in Keith Payne and Mark Schneider, "Russia's New National Security Strategy," Real Clear Defense, February 11, 2016.

¹⁹ *Russia Military Power: Building a Military to Support Great Power Aspirations*, Defense Intelligence Agency, 2017, and *Annual Threat Assessment, Intelligence Community Assessment*, Office of the Director of National Intelligence, March 6, 2023, p. 14.

²⁰ William Alberque and Timothy Wright, *Deployment and Use of Russia's Non-strategic Nuclear Weapons: Like the Cold War, Only More Dangerous* (Berlin: International Institute for Strategic Studies, forthcoming).

²¹ *National Defense Strategy, 2022*.

²² Brad Roberts, *Theories of Victory, Red and Blue* (Livermore, CA: Lawrence Livermore National Laboratory, 2021).

commitment to retain capabilities to forward deploy nuclear weapons if needed in time of crisis and war in support of an ally anywhere in the world. Yet the bulk of forward deployable U.S. dual capable aircraft (DCA) are all forward deployed in Europe. In the new security environment with the risks of opportunistic aggression against NATO by President Putin at a time of U.S.-China conflict over Taiwan, this posture will prove inadequate.²³

4. NATO has struggled with deterrence adaptation “at the speed of relevance” just as the United States has struggled.²⁴ When the need to strengthen deterrence of Russia became apparent following Russia’s military-backed annexation of Crimea in 2014, NATO undertook rapid, far-reaching, and effective measures to adapt and strengthen its conventional deterrent. In contrast, NATO has moved at a much slower pace to identify, decide, and implement measures to adapt and strengthen the nuclear deterrent. Agreed steps include, for example, steps to ensure coherence between conventional and nuclear components of NATO’s deterrence and defense posture,²⁵ more realistic exercises, a modernized planning process, and “the broadest possible participation of allies concerned in the nuclear sharing arrangements.”²⁶ Regular re-statement of these commitments reinforces continuity of purpose, while also raising a question about whether desired results have actually been achieved. The impression of difficulty in adapting at the speed of relevance is reinforced by the oft-delayed availability of the F35 for the DCA mission (and of the associated B61 bomb). It is also reinforced by continued political division in the United States about whether to proceed with development and deployment of the sea-launched cruise missile (SLCM/N), which was originally conceived as a remedy to weaknesses in the deterrence of Russian nuclear aggression in Europe.

In sum, there is reason to think the alliance’s nuclear deterrent may not be fit for purpose. Is the impression valid?

Fit for What Purpose?

The 2022 Strategic Concept again puts it succinctly: “the fundamental purpose of NATO’s nuclear capability is to preserve peace, prevent coercion, and deter aggression.”²⁷ As a first order approximation, and subject to further exploration below, if the posture is fit for the purpose of deterring aggression, it is fit also for the purposes of preventing coercion and preserving peace. So, let’s begin with deterrence. At its most basic, deterrence requires capabilities, resolve, and the perception of that resolve by the adversary. Are these requirements met today?

Capabilities

Does NATO have the capabilities needed to deter its adversaries and also to restore deterrence if it has failed and to assure its member publics that nuclear risks will not be realized? For the first purpose, NATO has maintained an ability to “impose costs on an adversary that would be unacceptable and far outweigh the benefits that any adversary could hope to achieve.”²⁸ To do this

²³ *China’s Emergence as a Second Nuclear Peer: Implications for U.S. Nuclear Deterrence Strategy*, report of a study group convened by the Center for Global Security Research at Lawrence Livermore National Laboratory, March 2023.

²⁴ The phrase was coined by Secretary of Defense Mattis and conveyed his frustration with the mismatch between a world of accelerating change and a Department of Defense that finds change difficult and time-consuming. See the unclassified summary of the U.S. *National Defense Strategy, 2018*.

²⁵ *NATO Strategic Concept, 2022*, paragraph 35

²⁶ A staple in nearly every summit communique over the last decade

²⁷ *Ibid.*, paragraph 28.

²⁸ *Ibid.*

job, it has a standing fleet of ready aircraft and weapons and pilots trained to do the job. In this most fundamental dimension, NATO's deterrent is fit for purpose.

But there are other factors to consider as well. Does NATO have enough nuclear weapons and delivery systems? Does it have the right mix of nuclear capabilities? Is their geographic footprint aligned with requirements?

Does NATO have enough nuclear weapons? This is the important question raised by President Putin's build up and diversification of Russia's nuclear arsenal. The nuclear imbalance in Europe is stark and growing. In the Cold War, the logic of flexible response dictated that the United States and NATO have an approximately symmetric posture to that of the Soviet Union and Warsaw Pact. The nuclear strategies of the two were very similar. But in today's world, NATO and Russia have very different military strategies and thus require different nuclear forces. NATO seeks and expects to win at the conventional level of war. Russia needs to run and manipulate the risks of nuclear escalation to not lose regional war. NATO does not need a theater nuclear posture symmetric to Russia's. Rather, it needs a posture sufficient in size to survive preemptive nuclear attack and to respond (while under continued attack) at each threshold in Russian nuclear strategy: first use, grouped but limited strikes, repeat attacks, and attacks with larger but still limited numbers of weapons against more numerous targets. NATO's sharing arrangements need not substitute for the strategic forces of its three nuclear-armed members in deterring further substantial Russian nuclear escalation.

For the purpose of conducting the required limited nuclear strikes in a non-contested environment, NATO has sufficient forces. But for repeated operations while under attack, NATO's forces may not be sufficient. The vulnerability to attack of NATO's nuclear deterrent is difficult to gauge. The dual-capable aircraft associated with NATO's sharing arrangements are dispersible and could operate from remote locations. A robust program to exercise and demonstrate operations from remote locations could strengthen deterrence by reducing the perceived vulnerability of these forces. But there is no public evidence of such a program. Of note, in Madrid, NATO leaders committed to "enhance the effectiveness of its exercises" in support of credible deterrence (this is another commitment that has been made previously).²⁹ They could also be protected with missile defenses—an option not so far pursued. Also of note, the strategic forces of the three nuclear-armed allies would be very difficult to eliminate preemptively.

In assessing whether NATO has enough nuclear forces, it is necessary to look outside the European theater. Given the rising potential of crisis and war against nuclear-armed adversaries in East Asia, NATO allies can expect that Japan, South Korea, and perhaps others will ask for what Washington has long promised—crisis re-deployment of nuclear forces into the region as a signal of U.S. nuclear resolve.³⁰ Those forces would have to come from somewhere. The forward-deployable fighter-bombers are mostly forward-deployed in Europe. This is where the "friendship without limits" between Russia and China becomes particularly consequential for NATO, as President Putin is likely to see opportunity to pressure NATO while the United States is relatively disengaged. Thus, in this circumstance, it might well be unwise to transfer U.S. dual-capable aircraft from Europe to Asia. To help address a potential Asian nuclear contingency, the United States could improve the ability of aircraft based in CONUS. One option is to stand up an additional F35 squadron certified for the nuclear mission but station it in CONUS rather than Europe, thereby adding the flexibility now missing.

²⁹ Ibid., paragraph 30.

³⁰ See for example the Report of the Nuclear Posture Review, 2010, p. 32.

https://dod.defense.gov/Portals/1/features/defenseReviews/NPR/2010_Nuclear_Posture_Review_Report.pdf

In considering how much is enough for NATO in the new security environment, to the best of my knowledge, no one argues that the United States and its allies and partners need a theater nuclear posture that is symmetric to Russia's. But some concept is needed for answering the question "how much is enough?" That concept must follow from NATO's current strategy and not from the strategy of 1991.

There are two further questions about NATO's nuclear capabilities beyond "does it have enough." Does it the right mix of nuclear weapons? Are its nuclear forces properly dispersed to support alliance deterrence strategy?

Does NATO have the right mix of nuclear forces? It doesn't have much of a mix. Other than the strategic forces of the three nuclear-armed members, NATO's only nuclear forces are aircraft delivered variable-yield gravity bombs. This is in contrast to Russia's 30 or so theater delivery systems. NATO's military effectiveness depends on the ability of the aircraft to penetrate to target Russian advanced integrated air and missile defenses. But doing so requires a supporting force of significant numbers of aircraft—at some cost to operations at the conventional level of war.³¹

In the NATO expert community, there is also some discussion about whether NATO has the mix of capabilities needed to credibly threaten to impose costs commensurate with its changing stake in an escalating conflict. Thus, there is a rising discussion among allied experts, usually in off-the-record sessions, about possible qualitative improvements to NATO's nuclear deterrent. Some credit the U.S. deployment of the low-yield warhead atop a few submarine-launched ballistic missiles as a significant contribution to NATO's overall nuclear posture; others see it as but a small step in the direction of needed flexibility. Thus, some (including me) have advocated for the re-introduction into the U.S. arsenal of a nuclear-armed sea-launched cruise missile as a useful supplement to existing means of deterrence.

Finally, are NATO's nuclear forces properly dispersed to support alliance deterrence strategy? Since the major drawdown three decades ago, there have been no publicly announced changes. But in the interim, the geography of the alliance has changed considerably, through three waves of new members. This raises military questions about whether target coverage is satisfactory and political questions about whether burdens are equitably borne among interested allies.

What about the software side of the posture—is it fit for purpose? A critical shortfall in U.S. nuclear strategy was identified in 2018 by the National Defense Strategy Commission, with apparent implications for NATO. Concluding that the United States could well lose its next major war, it strongly criticized the then-existing state of U.S. thinking about how to manage the risks of regional conflict with nuclear-armed adversaries. It called for more work to better understand the ways in which U.S. adversaries have prepared for such wars, the risks of both inadvertent and intentional escalation, and how to de-escalate and terminate such wars while avoiding a catastrophic result.³² The latest National Defense Strategy indicates that some work is now underway on these matters. NATO's development in 2020 and 2021 of a new deterrence and defense concept and a new warfighting concept may have generated some of the needed new concepts, but this cannot be judged as they are classified.³³

Concept development requires concept developers. NATO must have the knowledge base to support the development of principles, concepts, and plans. Allied capitals must contribute something here

³¹ "NATO Begins Nuclear Exercises Amid Russia War Tensions," Associated Press, October 17, 2022.

³² *Providing for the Common Defense: The Assessment and Recommendations of the National Defense Strategy Commission, 2018.*

³³ Brussels summit communique, paragraph 22.

as well—especially the three nuclear-armed allies and the sharing partners. The unfortunate fact is that these capabilities and capacities were largely harvested out of NATO and capitals in the 1990s as part of the post-cold war peace dividend. Today, NATO finds itself with too little of the political-military expertise necessary to develop theories of victory in crisis, war, and peacetime conflict against nuclear-armed adversaries and the associated concepts for escalation, de-escalation, and war termination that integrate conventional and nuclear operations.³⁴

Is NATO's capability portfolio fit for purpose? The baseline requirement for a standing response force is met. But the size of the force is increasingly a concern, as is the lack of operational flexibility. The answers of the early 1990s are not sound for 2023. NATO needs a force sizing construct and a force shaping construct aligned with its current strategy, not its strategy of 30 years ago. Recognizing the need for quantitative and qualitative adaptations is an urgent priority, as doing so can set in motion the analytical and political work to realize them. The Biden administration's commitment to strengthen extended deterrence lays the necessary political foundation for this next phase of work.

Resolve

Turning from capabilities to resolve, is the posture fit? The "software" certainly appears to be, as alliance leaders have said the right things. In Madrid in 2022, for example, they declared that "no one should doubt our strength and resolve to defend every inch of Allied territory, preserve the sovereignty and territorial integrity of all Allies and prevail against any aggressor" and that "the alliance has the capabilities and resolve to imposes costs on an adversary that would be unacceptable."³⁵ In Brussels in 2021, they stated that "we are united and resolute in our ability and commitment to defend one another."³⁶ They have regularly promised to maintain the necessary leadership focus and commitment to deterrence excellence. In contrast, national capitals have had relatively little to say to constructively reinforce these alliance strategic messages.

Moreover, the strength of the alliance's resolve in crisis and war is unknowable in peacetime. Faced with tangible new nuclear risk, the political pressure and temptation to compromise the interest in dispute would be very strong. But the pressure not to do so would also be very strong. Predicting how democracies would act under such pressures is inherently difficult. They may retreat, as the United States did from Lebanon in 1983 after the attack on American and French peacekeepers. Or they may be roused "to use extravagant force to expunge a hated enemy."³⁷

In fact, this risk calculus is precisely the point of vulnerability our nuclear-armed adversaries intend to attack. Russian military doctrine emphasizes employing threats and limited strikes against critically important targets that inflict the "proper dosage" of pain to "sober" the enemy by compelling that enemy to grasp the asymmetry of stake, as Russia perceives it, favoring Russia in any regional conflict on its periphery. They hope to break the resolve of the United States and/or its allies to wage an escalating war and thereby persuade them to de-escalate and terminate the war on conditions set in Moscow.³⁸

From a NATO perspective, this issue manifests itself in terms of expectations about how effective and efficient would NATO's nuclear consultation process be in wartime. The ability of NATO leaders to make timely decisions about how to advise the U.S. president on nuclear employment is a matter of

³⁴ *NATO 2030: United for a New Era, Analysis and Recommendations of the Reflection Group, 2020.* https://www.nato.int/nato_static_fl2014/assets/pdf/2020/12/pdf/201201-Reflection-Group-Final-Report-Uni.pdf

³⁵ *NATO Strategic Concept, 2022*, paragraphs 20 and 28.

³⁶ Brussels summit communique, 2021, paragraph 21.

³⁷ Herman Kahn, *On Escalation: Metaphors and Scenarios* (New York: Praeger, 1965).

³⁸ Roberts, *Theories of Victory, Red and Blue*.

much conjecture. Some see gridlock as inevitable, given the competing interests that would be generated by an immediate prospect of nuclear war in Europe; others anticipate that fear would rapidly galvanize allies to come together around a course of action promising an end to the risk. Even if the alliance as such proves to be unable to reach agreement on employment of the DCA fleet, the possibility remains of military action by one or more of the alliance's three nuclear-armed members.

Interestingly, Russia's war against Ukraine has had a strong impact on NATO's political resolve, as reflected in its strong renewed commitment to collective security and deterrence at the Madrid summit. More importantly for our purposes here, Putin's nuclear threats to NATO appear to have had the effect of strengthening the nuclear resolve of Western publics. As one recent study has concluded based on polling data, "after the invasion, nuclear deterrence was viewed more favorably, the willingness to use nuclear weapons increased, and support for the withdrawal of nuclear weapons dropped significantly."³⁹

Perception of Resolve

Deterrence requires more than being resolved; it requires also that the adversary perceive and understand that resolve. This has sometimes proven to be the fatal flaw in deterrence. Axis leaders in the 1930s and 1940s misperceived the resolve of the democracies to defend themselves.⁴⁰ Thus, deterrence failed—with catastrophic results for all, but especially for those who miscalculated.

This may yet prove to be the critical weakness in NATO's nuclear deterrent. Put yourself in President Putin's chair for a moment. What might he perceive and misperceive as he calculates NATO's nuclear resolve through the filter of his pre-existing beliefs about the weaknesses of democracies and their leaders. For more than a decade, he has steadily increased the threat to NATO, nuclear and otherwise; in the nuclear dimension, NATO has not responded to increase the threat to Russia. While Russia has replaced over 90 percent of its nuclear delivery systems with new and more capable variants, new NATO capabilities have not yet reached the field. More than a decade ago, Russia violated the INF treaty; today, NATO still debates its proposed mix of offensive and defensive responses. Putin speaks loudly and frequently about employing nuclear weapons against the West, while many NATO capitals are reluctant even to speak of NATO's own capabilities or to respond politically to Russian nuclear threats. This is especially true of those nations participating in the DCA mission under domestic political pressure from anti-nuclear advocacy groups.

What might he conclude about NATO's nuclear resolve? Is there anything in NATO's nuclear behavior that is likely to change his apparent view that NATO can be "sobered" into backing down in a conflict because its stake isn't sufficient to run the nuclear risks he is ready to impose? We can hope that NATO's strong response to Russia's war against Ukraine has had a salutary effect on any possible misperception President Putin may have about NATO's intention to defend its interests even in the face of Russian nuclear bullying. We can hope also that NATO's significant progress in adapting and strengthening its non-nuclear deterrent has helped to reinforce this effect.

Fit for Preventing Coercion?

Is NATO's nuclear posture fit for the purpose of preventing coercion? As I argued above, as a first approximation, the answer must be yes. If deterrence is credible, an adversary's threats can confidently be ignored. This will not prevent attempts to coerce. But it strips the threat of its coercive value, leaving the object of the coercive threat free to choose not to do as the adversary

³⁹ Michael Onderco, Michal Smetana, and Tom W. Etienne, "Hawks in the making? European public views on nuclear weapons post-Ukraine," *Global Policy* 2023;001, pp. 1-13.

⁴⁰ Patrick Glynn, *Closing Pandora's Box: Arms Races, Arms Control, and the History of the Cold War* (New York, NY: Basic Books, 1992).

would wish—that is, not to be coerced. The cumulative effect of many failed attempts to coerce may be a change in strategy by the aggressor, with a shift from coercion to cooperation to advance its interests.

But there is an important caveat. In an alliance of more than 30 states, perceptions of vulnerability to nuclear coercion necessarily vary. Proximity or historical animosity may make some feel more vulnerable than others in the alliance. The assurance of these more vulnerable states requires that NATO's nuclear deterrence be judged by them to be effective and credible. Regular summit communiqués affirm that they are assured. But the regular summit commitments to further adapt and strengthen NATO's nuclear deterrent suggest that their assurance is conditional on that further progress.

Fit for Preserving the Peace?

Is NATO's nuclear posture fit for the purpose of preserving the peace? Recall the first approximation: if nuclear deterrence is credible, the peace will not be broken. In this case, however, the first approximation is less instructive. Two further issues require examination.

First, NATO's nuclear deterrent has not prevented the major war now underway in Europe. Of course, it is fair and correct to argue that NATO's nuclear deterrent had no role in shaping President Putin's decision to commit aggression against Ukraine. After all, there was no NATO or U.S. nuclear guarantee to Ukraine. On the other hand, it may well be that NATO's nuclear deterrent has helped to prevent an expansion of the war to NATO by Russia. Future political discourse may not track such fine points and some may simply conclude that the fact of major war undermines the moral claim for deterrence. As Peter Watkins has argued,

The Russia-Ukraine war appears to weaken the moral argument for nuclear deterrence in two main respects. First, it is a concrete example of nuclear deterrence providing cover under which a rogue regime could conduct limited wars...Second, the occurrence of such a war—and the state behaviors and rhetoric that have accompanied it—suggests that, as a sort of self-balancing system, nuclear deterrence may be more precarious than its proponents have previously argued, with the massively harmful consequences of breakdown therefore more probable. The essentials of the moral calculus in favor of nuclear deterrence remain, but the elements are softer.⁴¹

At this writing in spring 2023, the long-term lessons of this aspect of the war in Ukraine remain highly unpredictable.

Second, NATO leaders have associated the preservation of peace with a nuclear posture that is “defensive and proportionate.”⁴² The Madrid strategic concept offers no explanation of either term or metrics by which to gauge how close the existing posture might be to one or both.

Bottom Lines

In sum, NATO's nuclear posture is fit for its most basic purpose: posing a credible threat of a collective nuclear response to nuclear attack. This has the additional benefit of reducing the credibility of Russian nuclear coercion. The unity of alliance nuclear purpose it signals is the principal strength of the posture.

⁴¹ Peter Watkins, “Russia’s War on Ukraine: Implications for Moral Arguments about Nuclear Deterrence,” in Brad Roberts, ed., *The Morality of Nuclear Deterrence: Practitioner Perspectives* (Livermore, CA: Lawrence Livermore National Laboratory, 2023).

⁴² *NATO Strategic Concept, 2020*, paragraph 20.

But the posture also reflects a lot of accepted risk. Quantitatively, the small force may be vulnerable to preemptive attack and to the potential demands of a contingency in Asia. Qualitatively, it has lost the diversity it once had. Its force sizing and force shaping constructs date to the early 1990s and do not account for the geographical expansion of the alliance since then. On the software side, the capacity for concept development is not robust and the effort to update concepts has not so far generated a publicly accessible alliance theory of victory tailored to the new Russian challenge. Perhaps most troubling of all is the possibility that NATO's nuclear restraint and evident reluctance have been interpreted in Moscow as a lack of nuclear resolve. As each of these risks was accepted separately, we are left to wonder whether the full picture of accepted risks is evident to alliance leaders.

What Must be Done?

To address quantitative concerns, NATO needs a force sizing construct tailored to the current security environment. At the very least, it must get on with the long-promised effort to expand participation in the nuclear mission. That participation might follow past practice (by hosting U.S. nuclear weapons and owning and operating dual-capable aircraft or by providing conventional support to nuclear operations) or new practices (for example, by owning and operating the aircraft but not hosting weapons in peacetime).

To address qualitative concerns, NATO needs a force shaping construct tailored to the current security environment. It should explore whether and how new capabilities might reinforce deterrence, assurance, and strategic stability. These might include, for example, a theater-range, dual-capable stand-off ballistic missile; a penetrating cruise missile with a low yield warhead; and/or a new sea-based capability to respond in a nuclear contingency without visible force generation. In the absence of a readiness to endorse a particular supplement to the existing posture, NATO leaders should have a good grasp of the technical possibilities and constraints.

To address concerns about the alliance's nuclear resolve, the alliance must send a few "costly signals" to Russia. In game theory, a costly signal helps to dispel the misperception that a player is bluffing by demonstrating a willingness to pay a cost that an unresolved player would be unwilling to pay (or to run a risk that less resolve player would be unwilling to run).⁴³ To ensure that President Putin has a sound grasp of NATO's nuclear resolve, NATO must take some difficult decisions for adaptation. It is useful to recall that the difficult dual-track decision in 1979 led to major shifts in Soviet strategy and a new willingness to negotiate arms control.⁴⁴ By accepting new risks in its nuclear posture rather than adapt that posture at the speed of relevance to maintain its credibility, NATO has not sent costly signals to Moscow. This is in contrast to the conventional level, where the signals of resolve have been numerous and substantial.

In fact, the Madrid summit appears to have launched various efforts to address these concerns. In the new Strategic Concept, NATO leaders clearly signaled their commitment "take all necessary steps...to maintain credible deterrence, strengthen strategic communications, enhance the effectiveness of exercises, and reduce strategic risks."⁴⁵ But following past practice, and the reluctance of some to talk publicly about NATO's nuclear policies and posture no detailed accounting exists for public analysis. We must hope that the new nuclear dangers facing the alliance, along with its new member(s), have motivated NATO officials and capitals to overcome past barriers to more

⁴³ Kai Quek, "Four Costly Signaling Mechanisms," *American Political Science Review*, Vol. 15, No. 2 (May 2021), pp. 537-549.

⁴⁴ Lukasz Trakimavicius, *NATO at 70: Lessons from the Cold War*, Atlantic Council, March 25, 2019.

⁴⁵ *NATO Strategic Concept 2022*, paragraph 30.

rapid progress and to turn new processes into tangible new results. As Secretary of Defense Lloyd Austin has argued, “we live in a decisive decade....business as usual is not acceptable.”⁴⁶

To Accelerate Progress, Look to Lessons of the Past

Going forward from here with the project to further adapt and strengthen NATO’s nuclear deterrent, there are leadership opportunities for many. Many allies can contribute to the work of finding new hardware and software solutions. This includes NATO’s new member(s), who have a unique role to play in re-setting the terms of NATO’s internal and external discourses.

But there are also particular problems for which leadership must come from the United States. Toward this end, the Biden administration has made a number of important commitments to improve both the hardware and software of extended deterrence in both Europe and Asia. It has promised timely availability of both the F35 fighter-bomber and the B21 heavy-bomber for the nuclear mission. It has also supported the long-range stand-off (LRSO) air-launched cruise missile. It has also promised to pursue new strategic advantages for U.S. and allied military forces and to design and implement long-term deterrence campaigns. It is also committed to leadership of NATO’s post-Madrid efforts to strengthen nuclear deterrence. At this same time, it has also moved to cancel the new nuclear-tipped sea-launched cruise missile (SLCM/N).

As these efforts move forward, it is important for all to recall some lessons from the experience of the last decade, as NATO has sought to adapt its deterrence posture to ensure it remains fit for purpose. First, despite repeated promises at the leadership level to maintain leadership focus on nuclear deterrence, that focus seems to have wavered at times, as attention shifted to adapting the conventional deterrent and to competition in the new military domains. As a result, a number of false starts were made on the project to adapt and strengthen NATO’s nuclear deterrence. The alliance cannot afford more false starts. Leadership focus must be maintained so long as the alliance faces nuclear threats. It should not again waver once the current crisis has passed.

Second, metrics are needed to help distinguish between progress and success. In the absence of metrics, change agents tend to look back to the distance covered from the starting point rather than forward to the distance yet to be covered to the finish line. NATO leaders need to understand whether the processes put in place to implement the agendas they set are resulting in tangible, material changes to the practice of nuclear deterrence by NATO and to the perceptions of NATO’s resolve in Moscow and elsewhere. Toward this end, they need new and improved analytical tools such as wargaming and net assessment. In 2012 and again in 2022, the alliance declared its deterrence and defense posture fit for purpose, without explaining why; next time, it should have a better answer. Metrics of success should be derived from theories of victory across the continuum of conflict.

Third, NATO needs to convey publicly the courage of its nuclear convictions. This is an obligation falling on capitals as well. The reticence of some allies to promote a more open discussion of NATO’s nuclear deterrence strategy and posture may help avoid domestic political controversy. But it works against assurance and deterrence. Dealing forthrightly with the opponents of the alliance’s deterrence strategy would send a useful message of nuclear resolve to both allied publics and Moscow.

Conclusion

Having in 2012 and 2022 declared that its nuclear deterrent is fit for purpose, NATO needs to take a closer look in 2023 with an eye on the decade ahead. From a hardware perspective, the alliance has

⁴⁶ From his cover letter to the *National Defense Strategy, 2022*.

much of what it needs. But it lacks the flexibility of a more diverse force and the capacity to support a contingency in Northeast Asia. From a software perspective, it has many strengths, including the consensus within the alliance and its messages of resolve. But it can and should do more to address possible misperceptions about its nuclear resolve.

Looking ahead, NATO has taken on many of the long-standing challenges with renewed political commitment and, now, some momentum as well. Continued, accelerated progress will require learning a few key lessons from the past, including principally the need for sustained leadership focus.