



NUCLEAR ESCALATION STRATEGIES AND PERCEPTIONS:

THE UNITED STATES,
THE RUSSIAN FEDERATION,
AND CHINA

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ABBREVIATIONS AND ACRONYMS

ABM	Anti-Ballistic Missile (Treaty)
CUES	Code for Unplanned Encounters at Sea
DMA	Prevention of Dangerous Military Activities Agreement
HCOC	Hague Code of Conduct
ICBM	intercontinental ballistic missile
INCSEA	Agreement on the Prevention of Incidents On and Over the High Seas
MOU	memorandum of understanding
NATO	North Atlantic Treaty Organization
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
OSCE	Organization for Security and Co-operation in Europe
P5	The five permanent members of the Security Council
SALT	Strategic Arms Limitation Talks
SLBM	submarine-launched ballistic missile
SSBN	nuclear-powered ballistic missile submarine
SSGN	cruise missile submarine
START	Strategic Arms Reduction Talks/Treaty
THAAD	Terminal High Altitude Area Defense System
UUV	uncrewed underwater vehicles



US DEPARTMENT OF DEFENSE

SUMMARY

- The ways in which the United States, the Russian Federation and China perceive each other's nuclear doctrines and force postures are coloured by their interpretation of mutual competitive or adversarial geopolitical dynamics.
- These three 'great powers' generally project aggressive intentions upon each other and seem at times to assume an expanded range of circumstance in which their competitor or adversary is willing to use nuclear weapons.
- Dissonance between perceived and presented nuclear deterrence objectives, escalation strategies and relevant capabilities of States can have an impact on the risk of nuclear weapon use. This is especially the case during times of crisis, in which the possibility of misperception, miscalculation, or misunderstanding is acute.
- Addressing escalatory risks requires that States take a multifaceted approach consisting of measures aimed at bridging gaps in strategic perceptions, tackling concerns about specific capabilities, and defusing or managing potentially volatile situations.
- Concrete movement in risk reduction would contribute to greater trust among the 'great powers', including towards the reshaping of nuclear doctrine and escalation strategies (and perceptions thereof), and the revitalization of arms control and disarmament.



UN PHOTO/ARIANA LINDQUIST

1. CONTEXT

Among the five nuclear weapon States recognized by the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT), there has emerged a common concern about the risk of nuclear weapon use linked to misperception, miscalculation, or misunderstanding. In 2019, these five States – China, France, the Russian Federation, the United Kingdom of Great Britain and Northern Ireland, and the United States of America (also the five permanent members of the Security Council, or the P5) – agreed to “take an objective view of one another’s strategic intentions, strengthen exchanges on nuclear policies and doctrines . . . and make every effort to prevent nuclear risks”.¹ This focus has informed the concept of “strategic risk reduction”, centred on the pursuit of measures to improve transparency and dialogue.² While “strategic risk” has been invoked by the P5, there is no official definition; some experts underline its emphasis on how “each party’s behaviors and strategies can be the driving factors of escalation” given “conflict dynamics”.³ Notably, the concept is not as broad as some more comprehensive conceptions of nuclear risk that, for instance, capture the possibility of nuclear use due to accident. Rather, “strategic risk” and

“strategic risk reduction” reflect a recognition among these States that interactions among adversarial nuclear powers are of particular concern during crisis situations in which the decision-making process is compressed and the effects of technical and human errors can be compounded. Escalation – defined as an “increase in the intensity or scope of conflict that crosses threshold(s) considered significant by one or more of the participants” – appears as a distinct possible outcome.⁴

The possibility of nuclear escalation emerging as a function of broader relational dynamics pertains not only to the NPT nuclear weapon States. This pathway to potential nuclear use applies to interactions among all nine nuclear-armed States. It also applies to States that do not possess nuclear weapons, but which could play a part in decision-making related to nuclear weapons or in the delivery of these munitions as part of a nuclear alliance such as the North Atlantic Treaty Organization (NATO). This is the case in part due to the widened scope of strategic competition across domains and technologies as well as the current tense global geopolitical and security circumstances. In examining the impact of

¹ Conference on Disarmament, CD/PV.1478, 5 February 2019, <https://undocs.org/pdf?symbol=en/cd/PV.1478>, p. 2.

² 2019 G7 Statement on Non-Proliferation and Disarmament, 6 April 2019, http://www.g8.utoronto.ca/foreign/2019_g7_statement_on_non-proliferation_and_disarmament_cle881416.pdf.

³ C. Brustlein, Strategic Risk Reduction Between Nuclear-Weapons Possessors, Proliferation Papers no. 63, IFRI Security Studies Center, January 2021, <https://www.ifri.org/en/publications/etudes-de-lifri/proliferation-papers/strategic-risk-reduction-between-nuclear-weapons>, p. 42.

⁴ F.E. Morgan et al., Dangerous Thresholds: Managing Escalation in the 21st Century, RAND, 2008, <https://www.rand.org/pubs/monographs/MG614.html>, p. xi.

broader context and “conflict dynamics” on escalatory risk, questions then follow. What are the precise behaviours and strategies of concern? Which of them constitute the sources of friction in specific geopolitical situations? In times of crisis, how can they ostensibly drive the kinds of misperception, miscalculation, and misunderstanding that can lead to the escalatory use of nuclear weapons? For that matter, how might they contribute to other use pathways?⁵

As the first in a series of profiles of different “friction points” among nuclear-armed and nuclear-allied States – or the issues of contention in their relations that can spark potential conflict and nuclear escalation – this report considers the multipolar dynamics between the United States, the Russian Federation, and China. These are the three States identified by the United States as being entangled in a resurgent “Great Power competition” that is taking shape, with the United States pitted against the Russian Federation on the one hand, and the United States pitted against China on the other.⁶ The Russian Federation and China have reached similar strategic perceptions: the former underlines the opposition to its policies from the United States and its allies; and the latter refers to the presence of “major country competition” in the Asia-Pacific, with US activities having “severely undermined the regional strategic balance and the strategic security interests of regional countries”.⁷ Significantly, relations between these three nuclear possessors have spillover effects for regional security dilemmas involving other nuclear-armed and nuclear-allied States. This is true even as China has a nuclear arsenal

orders of magnitude smaller than the others (an estimated 320 compared to 5,800 for the United States and 6,400 for the Russian Federation).⁸

This report analyses the respective escalation strategies of the United States, the Russian Federation, and China in order to identify potential drivers of escalatory risk among them. Section 2 lays out the range of circumstances that each State has presented as grounds for their escalation to nuclear use (including through their nuclear and security doctrines), and then explores how their strategies are seen by their competitors – as gleaned from publicly available sources.⁹ In each instance there appears to be a substantial gap between the expressed and perceived terms of escalation. Section 3 explores some of potential consequences of this dissonance and of existing perceptions of doctrines and postures broadly, even as it acknowledges the presence of purposeful signalling behaviour by States. It identifies how fundamental mistrust among the three States filters into their readings of specific capabilities in the nuclear sphere, then outlines illustrative contexts in which these capabilities have caused tension and could contribute to a hypothetical escalation sequence. Section 4 then outlines a series of policy recommendations for the three States – individually and in tandem – to overcome the perception gaps, reduce related risks, and prevent escalatory scenarios from becoming reality. Section 5 concludes the report.

5 See W. Wan, Nuclear Risk Reduction: A Framework for Analysis, UNIDIR, 2019, <https://doi.org/10.37559/WMD/19/NRR01>.

6 United States Department of Defense, Nuclear Posture Review 2018, February 2018, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEWFINAL-REPORT.PDF>, p. 21. See also A. Panda, “Multipolarity, Great Power Competition, and Nuclear Risk Reduction”, in W. Wan (ed.), Nuclear Risk Reduction: Closing Pathways to Use, UNIDIR, 2020, <https://doi.org/10.37559/WMD/20/NRR/01>.

7 Russian National Security Strategy, December 2015, English translation, <https://russiamatters.org/node/21421>; and State Council Information Office of the People's Republic of China, “China's National Defense in the New Era”, July 2019, http://www.xinhuanet.com/english/2019-07/24/c_138253389.htm.

8 S.N. Kile and H.M. Kristensen, “World Nuclear Forces”, in SIPRI Yearbook 2020, <https://www.sipri.org/yearbook/2020/10>.

9 For more on the role of doctrine, see B.R. Posen, The Sources of Military Doctrine: France, Britain, and Germany between the World Wars, 1984.

2. THE TERMS OF ESCALATION

2.1. THE UNITED STATES

2.1.1. As presented

There are indications that the US administration of President Joe Biden will undertake a review of US nuclear policy early in its tenure.¹⁰ During his presidential campaign, Biden expressed a belief that the “sole purpose” of nuclear weapons is to deter nuclear use against the United States or its allies; he also called more generally for a reduced role for nuclear weapons in US defence.¹¹ In April 2021, however, the new administration submitted a discretionary funding request for 2022 that suggests at least some level of continuity in the US nuclear force structure in the near future. The White House in that document expressed its intention to modernize its nuclear deterrent, highlighting in particular the significance of hypersonic missiles and long-range strike capabilities. Moreover, the overall \$715 billion request for the United States Department of Defense listed as a matter of priority the need to “counter the threat from China” as well as

“deterring destabilizing behavior by Russia” – relaying a worldview in line with the identified ‘great power competition’.¹²

While some experts have speculated that Biden may seek to enact a “sole purpose” policy, they also acknowledge that this would not necessarily constrain employment of nuclear weapons by the United States.¹³ And, as recent history demonstrates, US allies are likely to weigh in on any potential significant changes to US nuclear doctrine.¹⁴ Whatever the results of the review process, President Biden in the meantime inherits the 2018 Nuclear Posture Review, which outlines that, should deterrence fail, the employment of nuclear weapons would be considered only “in extreme circumstances to defend the vital interests of the United States, its allies, and partners”.¹⁵ These circumstances extend beyond nuclear attack and include “significant non-nuclear strategic attacks”, which themselves “include, but are not limited to, attacks on the U.S., allied, or partner civilian

¹⁰ M. Shelbourne, “HASC Chairman Smith: A Biden Administration Would Revisit Nuclear Posture Review”, 30 October 2020, <https://news.usni.org/2020/10/30/hasc-chairman-smith-a-biden-administration-would-revisit-nuclear-posture-review>

¹¹ R. Burns, “Biden Says He Would Push for Less U.S. Reliance on Nuclear Weapons for Defense”, Associated Press, 21 September 2020, <https://www.pbs.org/newshour/politics/biden-says-he-would-push-for-less-u-s-reliance-on-nuclear-weapons-for-defense>.

¹² The White House, “Summary of the President’s Discretionary Funding Request”, 9 April 2021, <https://www.whitehouse.gov/wp-content/uploads/2021/04/FY2022-Discretionary-Request.pdf>, p. 13.

¹³ A. Panda and V. Narang, “Sole Purpose is Not No First Use: Nuclear Weapons and Declaratory Policy”, War on the Rocks, 22 February 2021, <https://warontherocks.com/2021/02/sole-purpose-is-not-no-first-use-nuclear-weapons-and-declaratory-policy/>.

¹⁴ P. Sonne, G. Lubold, and C.E. Lee, “‘No First Use’ Nuclear Policy Proposal Assailed by U.S. Cabinet Officials, Allies”, Wall Street Journal, 12 August 2016, <https://www.wsj.com/articles/no-first-use-nuclear-policy-proposal-assailed-by-u-s-cabinet-officials-allies-1471042014>.

¹⁵ United States Department of Defense, Nuclear Posture Review 2018, February 2018, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEWFINAL-REPORT.PDF>, p. 21.

population or infrastructure, and attacks on U.S. or allied nuclear forces, their command and control, or warning and attack assessment capabilities”.¹⁶

There is deliberate ambiguity in the text, leaving space for US manoeuvrability in the context of any escalation decision. This is a continuation of long-standing US policy. Its “calculated ambiguity” – as some experts have termed it – would be especially relevant should a chemical or biological attack take place, with the ambiguity further underlined by the variable level of impact of such attacks.¹⁷ Further, what constitutes “extreme circumstances” or “vital interests” is left largely undefined. There is no elaboration on the form

that a significant non-nuclear strategic attack might take, although the document elsewhere identifies non-nuclear strategic “threats” as “including chemical, biological, cyber, and large-scale conventional aggression”.¹⁸ In recognition of a shifting strategic landscape, the United States also “reserves the right to make any adjustment in the assurance that may be warranted by the evolution and proliferation of non-nuclear strategic attack technologies.”¹⁹

The United States elsewhere has explicitly denied that the reference to non-nuclear strategic attacks portends any expansion in the range of use circumstances.²⁰ At the same time, the Nuclear Posture Review makes clear that US consideration of nuclear escalation is predicated on the failure of deterrence – in the same document that acknowledges that the character of its overall deterrence is changing. It highlights the value of “credible deterrence against regional aggression” (without clarifying the kind or scale of regional aggression), as reflected by an emphasis on enhancing “the flexibility and range of its tailored deterrence options” (also including non-nuclear capabilities), and requires addressing a “spectrum of adversaries and threats and enable adjustments over time”.²¹ Moreover, under the 2017–2021 administration of President Donald J. Trump, the United States had also “begun to extend nuclear deterrence to such realms” as space and cyberspace.²²



WHITE HOUSE/ADAM SCHULTZ

¹⁶ Ibid, p. 21.

¹⁷ S.D. Sagan, “The Commitment Trap: Why the United States Should Not Use Nuclear Threats to Deter Biological and Chemical Weapons Attacks”, *International Security*, vol. 24, no. 4, spring 2000, <https://doi.org/10.1162/016228800560318>.

¹⁸ United States Department of Defense, Nuclear Posture Review 2018, February 2018, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEWFINAL-REPORT.PDF>, p. 38.

¹⁹ Ibid., p. 21. The “assurance” refers to the statement that “The United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the NPT and in compliance with their nuclear non-proliferation obligations.”

²⁰ Office of the United States Under Secretary of State for Arms Control and International Security, “Strengthening Deterrence and Reducing Nuclear Risks: The Supplemental Low-Yield U.S. Submarine-Launched Warhead”, *Arms Control and International Security Papers*, vol. 1, no. 4, April 2020, <https://2017-2021.state.gov/wp-content/uploads/2020/08/T-Paper-Series-W76-Final-508.pdf>.

²¹ United States Department of Defense, Nuclear Posture Review 2018, February 2018, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEWFINAL-REPORT.PDF>, pp. XII, 27, 54.

²² C.A. Ford, “Strategic Stability and the Global Race for Technology Leadership”, *Arms Control and International Security Papers*, vol. 1, no. 21, November 2020, <https://2017-2021.state.gov/wp-content/uploads/2020/11/T-paper-series-Strategic-Stability-and-Tech-508.pdf>, p. 3.

2.1.2. As perceived

The ways in which the Russian Federation and China have characterized the international landscape shed some light on how they each interpret US escalation strategy. In its 2015 National Security Strategy and its 2016 Foreign Policy Concept, the Russian Federation highlights the specific opposition of the United States and its allies to Russian foreign and domestic policy, and accuses them of undertaking containment in a manner that includes the exertion of “political, economic, information and other pressure” on Moscow, which “undermine regional and global stability”.²³ The Russian Federation also presents NATO’s military activities as a threat to its national security. China, in its 2019 white paper on national defence, struck a similar tone in highlighting the rise of strategic competition, noting that the United States had “adjusted its national security and defense strategies” in a provocative manner.²⁴ In advance of a March 2021 strategic dialogue, China accused the United States of interference in its internal affairs and of the “outright suppression” of its “legitimate rights and interests”.²⁵

While the Russian Federation and China do not often refer overtly to US nuclear escalation strategy, their framing of the United States’ strategic behaviour suggests that they question its stated defensive deterrence objectives. Both have claimed flatly that the

United States is seeking “absolute military superiority” (both using that same phrase), with the Russian Federation referring to its activities in missile defence and China citing broader “technological and institutional innovation”.²⁶ Some experts argue that developments in US posture – including the deployment of lower-yield nuclear warheads – continue to fuel Russian and Chinese fears that the United States is lowering its threshold for nuclear use and might be seeking a decapitating first-strike capability.²⁷ Indeed, Russian President Vladimir Putin, in rationalizing Russian developments in strategic technologies (including the Sarmat missile system, global-range cruise missiles, and uncrewed underwater vehicles, UUVs), pointed to the growth of US anti-ballistic missile systems, which he claimed “will result in the complete devaluation of Russia’s nuclear potential” if left unabated.²⁸ Accordingly, he has sounded warning bells about the fact that the United States views space as a “theater of military operations”.²⁹ In the same vein, China has underlined its concerns with US developments in “nuclear, outer space, cyber and missile defense”.³⁰ It links the US strengthening of military alliances and the deployment of the Terminal High Altitude Area Defense (THAAD) system in particular to uncertainties and complexity in the regional security landscape.

²³ Foreign Policy Concept of the Russian Federation, 30 November 2016, https://www.mid.ru/foreign_policy/official_documents/-/asset_publisher/CptICkB6BZ29/content/id/2542248?p_p_id=101_INSTANCE_CptICkB6BZ29&_101_INSTANCE_CptICkB6BZ29_languageId=en_GB, paragraph 61.

²⁴ State Council Information Office of the People’s Republic of China, “China’s National Defense in the New Era”, July 2019, http://www.xinhuanet.com/english/2019-07/24/c_138253389.htm, chapter I.

²⁵ United States Department of State, “Secretary Antony J. Blinken, National Security Advisor Jake Sullivan, Director Yang And State Councilor Wang at the Top of Their Meeting”, 18 March 2021, <https://www.state.gov/secretary-antony-j-blinken-national-security-advisor-jake-sullivan-chinese-director-of-the-office-of-the-central-commission-for-foreign-affairs-yang-jiechi-and-chinese-state-councilor-wang-yi-at-th/>.

²⁶ V. Putin, “Presidential Address to Federal Assembly”, 20 February 2019, <http://en.kremlin.ru/events/president/transcripts/messages/59863>; and State Council Information Office of the People’s Republic of China, “China’s National Defense in the New Era”, July 2019, http://www.xinhuanet.com/english/2019-07/24/c_138253389.htm, chapter I.

²⁷ E. Colby, “The Role of Nuclear Weapons in the U.S.-Russian Relationship”, Carnegie Endowment for International Peace, 26 February 2016, <https://carnegieendowment.org/2016/02/26/role-of-nuclear-weapons-in-u.s.-russian-relationship-pub-62901>; and T. Zhao, Narrowing the U.S.-China Gap on Missile Defense: How to Help Forestall a Nuclear Arms Race, Carnegie Endowment for International Peace, 29 June 2020, <https://carnegietsinghua.org/2020/06/29/narrowing-u.s.-china-gap-on-missile-defense-how-to-help-forestall-nuclear-arms-race-pub-82120>.

²⁸ V. Putin, “Presidential Address to the Federal Assembly”, 1 March 2018, <http://en.kremlin.ru/events/president/news/56957>.

²⁹ “Putin Urges Greater Attention to Strengthening Orbital Group of Satellites”, TASS Russian News Agency, 4 December 2019, <https://tass.com/science/1095757>.

³⁰ State Council Information Office of the People’s Republic of China, “China’s National Defense in the New Era”, July 2019, http://www.xinhuanet.com/english/2019-07/24/c_138253389.htm, chapter I.

2.2. THE RUSSIAN FEDERATION

2.2.1. As presented

In June 2020, Russian President Vladimir Putin signed a decree on the “Basic Principles of State Policy of the Russian Federation on Nuclear Deterrence” – a document that expanded on many elements of the 2014 Russian Military Doctrine. The document underlines that Russian nuclear weapons are “exclusively as a means of deterrence”, with use a right reserved by the Russian Federation albeit as “an extreme and compelled measure”.³¹ The document specifies four scenarios that warrant consideration in terms of escalation to nuclear weapon use:

- a) arrival of reliable data on a launch of ballistic missiles attacking the territory of the Russian Federation and/or its allies;*
- b) use of nuclear weapons or other types of weapons of mass destruction by an adversary against the Russian Federation and/or its allies;*
- c) attack by adversary against critical governmental or military sites of the Russian Federation, disruption of which would undermine nuclear forces response actions;*
- d) aggression against the Russian Federation with the use of conventional weapons when the very existence of the state is in jeopardy.*³²

There is space for manoeuvrability and interpretation in Russian decision-making. It is the Russian State (and presumably, at its pinnacle, President Putin) that defines when the Russian Federation’s existence is in jeopardy or which of its governmental or military sites are considered critical in the context of its nuclear second-strike capability. Similarly, the threshold at which an adversarial action is considered an “attack” or an act of “aggression” is left open. This deliberate ambiguity factors especially into the first

condition, which outlines a potential nuclear response not to an attack but to the detection of an attack – in effect seeming to maintain the option of a “launch on warning” mode for the Russian Federation.³³ Further, the document does not specify that the ballistic missiles have to be carrying nuclear warheads to trigger a nuclear response.



UN PHOTO/CIA PAK

2.2.2. As perceived

The framing by the United States of ‘great power competition’ appears to provide a prism through which it interprets the evidence about Russian Federation’s nuclear escalation strategy. The 2018 Nuclear Posture Review refers specifically to Russia’s aggressive behaviour, including actions in Crimea and in cyberspace and outer space, as contributing to the uncertain international security environment. Directly, it accuses the Russian Federation of adopting “military strategies and capabilities that rely on nuclear escalation for their success”.³⁴ It claims that the Russian Federation believes that limited nuclear

³¹ Executive Order “On Basic Principles of State Policy of the Russian Federation on Nuclear Deterrence”, President of the Russian Federation, 8 June 2020, https://www.mid.ru/en/foreign_policy/international_safety/disarmament/-/asset_publisher/rpOfiUBmANaH/content/id/4152094, paragraph 5.

³² Ibid., paragraph 19.

³³ C. Roberts, “Revelations about Russia’s Nuclear Deterrence Policy”, War on the Rocks, 19 June 2020, <https://warontherocks.com/2020/06/revelations-about-russias-nuclear-deterrence-policy/>.

³⁴ United States Department of Defense, Nuclear Posture Review 2018, February 2018, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEWFINAL-REPORT.PDF>, p. I.

first use can provide an advantage over the United States and its allies in a regional conflict. Indeed, in addition to deterrence, the United States perceives that threats of use or actual first use to “‘de-escalate’ a conflict” are central to Russian nuclear strategy, citing the corresponding development of diverse and expanding nuclear capabilities.³⁵ (It is this controversial claim of “escalate to de-escalate” – a phrase first found in US briefings – which provides at least partial justification for the United States’ emphasis on increasingly flexible capabilities in its “tailored deterrence” strategy; the viability of that strategy has long been debated.³⁶)

The United States has referred specifically to Russia’s growing stockpile of non-strategic nuclear weapons as indications of Russian strategy in this regard, and it also claims that Moscow is lowering the threshold for first use of nuclear weapons.³⁷ US officials have argued that the Russian military “is well trained to transition rapidly to nuclear use in order to compel an end to a conventional conflict”.³⁸ Russia’s release of the 2020 Basic Principles document sought to address such interpretations, and Russian officials have repeatedly insisted that it does not have an “escalate-to-de-escalate” strategy. (Based on that document, one expert concluded that “de-escalation . . . is not a war-fighting strategy, but rather a tool of deterrence” for the Russian Federation.³⁹) Still, the Commander of the US Strategic Command wrote that opponents of

the United States are investing in capabilities “to escalate past us – to include nuclear use” and specifically, that “a regional crisis with the Russian Federation or China could escalate quickly to a conflict involving nuclear weapons”.⁴⁰ On this point, he cited not only Russian modernization of its medium- and short-range systems, but changes across its entire force structure.

2.3. CHINA

2.3.1. As presented

Since 1964, China has consistently expressed a policy of no first use of nuclear weapons. Its 2019 white paper reiterates its firm commitment “to a nuclear policy of no first use of nuclear weapons at any time and under any circumstances”.⁴¹ In 1995, China issued a national statement in the United Nations Security Council pledging “not to use or threaten to use nuclear weapons against non-nuclear-weapon States or nuclear-weapon-free zones at any time or under any circumstances”.⁴² The unequivocal nature of the texts is striking: in the absence of any first use of nuclear weapons by an adversary, China has stated that there exists no acceptable path of nuclear escalation on its side. The 2019 statement of China’s policy is also quite blunt as to how China would respond to nuclear first use: “we will surely counterattack if attacked”.⁴³ A document submitted to the Preparatory Committee for the 2020 NPT Review Conference similarly highlights a

³⁵ Ibid., p. 8.

³⁶ On tailored deterrence, see K. Ryan, “Is ‘Escalate to Deescalate’ Part of Russia’s Nuclear Toolbox?”, *Russia Matters*, 8 January 2020, <https://www.russiamatters.org/analysis/escalate-deescalate-part-russias-nuclear-toolbox>; and M.E. Bunn, “Can Deterrence be Tailored?”, *Strategic Forum*, no. 225, January 2007, https://www.files.ethz.ch/isn/31364/SF225_new.pdf.

³⁷ United States Department of Defense, *Nuclear Posture Review 2018*, February 2018, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEWFINAL-REPORT.PDF>, p. 54.

³⁸ R.P. Ashley (Lt. Gen.), “Russian and Chinese Nuclear Modernization Trends”, Remarks at the Hudson Institute, 29 May 2019, <https://www.dia.mil/News/Speeches-and-Testimonies/Article-View/Article/1859890/russian-and-chinese-nuclear-modernization-trends/>.

³⁹ N. Sokov, “Russia Clarifies Its Nuclear Deterrence Policy”, 3 June 2020, Vienna Center for Disarmament and Non-Proliferation, <https://vcdnp.org/russia-clarifies-its-nuclear-deterrence-policy/>.

⁴⁰ C.A. Richard (Adm.), “Forging 21st-Century Strategic Deterrence”, *Proceedings* (UN Naval Institute), vol. 147/2/1416, February 2021, <https://www.usni.org/magazines/proceedings/2021/february/forging-21st-century-strategic-deterrence>.

⁴¹ State Council Information Office of the People’s Republic of China, “China’s National Defense in the New Era”, July 2019, http://www.xinhuanet.com/english/2019-07/24/c_138253389.htm, chapter II.

⁴² General Assembly and Security Council, A/50/155-S/1995/265, 6 April 1995, <https://undocs.org/A/50/155>, para. 2.

⁴³ State Council Information Office of the People’s Republic of China, “China’s National Defense in the New Era”, July 2019, http://www.xinhuanet.com/english/2019-07/24/c_138253389.htm, chapter II.

“resolute counter-attack” if “subjected to nuclear attack”.⁴⁴ This unqualified promise notably extends beyond more familiar text about the consideration of a response.⁴⁵

In addition to these texts, some experts have drawn on unofficial translated versions of Chinese military texts as means to confirm the limited deterrent role of nuclear weapons in Chinese security strategy.⁴⁶ The Science of Military Strategy produced in 2013 by the Chinese Academy of Military Sciences, for instance, underlines the “directed nature”, “limited objective”, and “defensive nature” of China’s deterrence – all expressing the goal of preventing a nuclear attack. The text does suggest that retaliation could be considered “under conditions confirming the enemy has launched nuclear missiles” and prior to impact, but this is not authoritative; this framing also speaks to broader ambiguity that exists surrounding how any State might determine when first use has taken place. The text does posit that any possible Chinese retaliation would be limited in nature, with the objective only “to cause the enemy to cease future nuclear attacks against China”. For one analyst at least, the text underlines the “marginal role” of nuclear weapons in Chinese military strategy.⁴⁷

2.3.2 As perceived

The United States regards China as a strategic competitor, on pace to be a peer – and a threat to the post-Cold War international order. This



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is due in part to China’s military activities in the East and South China Seas and its general military modernization activity. The 2018 US Nuclear Posture Review acknowledges that, in addition to the regional crisis scenarios mentioned above, military conflict with China has “the potential for nuclear escalation”.⁴⁸ A 2020 report by the US Department of Defense argues that there is “ambiguity over the conditions under which China would act outside of its [no-first-use] policy”, and suggests that Beijing could be “moving to a launch-on-warning . . . posture”.⁴⁹ The Commander of the US Strategic Command has more directly questioned the veracity of China’s no-first-use policy; he has since argued that its activities give it “a full range of options, including limited use and a first-strike capability”.⁵⁰

⁴⁴ 2020 NPT Review Conference, Preparatory Committee, Third Session, “Implementation of the Treaty on the Non-Proliferation of Nuclear Weapons in the People’s Republic of China”, Report submitted by China, 29 April 2019, NPT/CONF.2020/PC.III/8, <https://undocs.org/NPT/CONF.2020/PC.III/8>, para. 13.

⁴⁵ This stance has previously been termed by analysts as “assured retaliation”.

⁴⁶ The following quotes are translated and presented in G. Kulacki, The Chinese Military Updates China’s Nuclear Strategy, Union of Concerned Scientists, March 2015, <https://www.ucsusa.org/resources/chinas-nuclear-weapons-strategy>.

⁴⁷ Ibid. On this note it is worth noting that a leaked People’s Liberation Army document, the Science of Second Artillery Campaigns, sets forth a “deterrence ladder”. See also D. Cheng, “An Overview of Chinese Thinking about Deterrence”, in F. Osinga and T. Sweijts (eds.), NL ARMS Netherlands Annual Review of Military Studies 2020, 2021, https://doi.org/10.1007/978-94-6265-419-8_10.

⁴⁸ United States Department of Defense, Nuclear Posture Review 2018, February 2018, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEWFINAL-REPORT.PDF>, p. 32.

⁴⁹ Office of the Secretary of Defense, Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China, 2020, <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>, pp. 85, 88.

⁵⁰ United States Strategic Command, “U.S. Strategic Command and U.S. Northern Command SASC Testimony”, 13 February 2020, <https://www.stratcom.mil/Media/Speeches/Article/2086752/us-strategic-command-and-us-northern-command-sasc-testimony/>; and C.A. Richard (Adm.), “Forging 21st-Century Strategic Deterrence”, Proceedings (UN Naval Institute), vol. 147/2/1416, February 2021, <https://www.usni.org/magazines/proceedings/2021/february/forging-21st-century-strategic-deterrence>.

For the United States, at least, China's diversifying arsenal – including its work on completing its nuclear triad and to field theatre-range precision-strike systems – suggests that it is widening its range of nuclear options, and increasingly is developing an operational escalation strategy not in alignment with its general nuclear no-first-use policy or its long-standing minimalist force posture. Outlining the possibility of protracted conflict in Taiwan, for instance, the US Department of Defense report suggests specifically that China might “choose to escalate cyberspace, space, or nuclear activities in an attempt to end the conflict”.⁵¹ The US interpretation is also coloured by what it views as China's deliberate strategic ambiguity and general lack of nuclear transparency. Unlike the rest of the P5, Beijing has also not formally committed to a moratorium on producing fissile materials for weapons. Washington's framing of Chinese nuclear and non-nuclear capabilities and Beijing's intentions in effect enlarges the number of scenarios in which the United States is concerned that nuclear weapons may be introduced by China.

⁵¹ Office of the Secretary of Defense, Annual Report to Congress: Military and Security Developments Involving the People's Republic of China, 2020, <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>, p. 113.



US NAVY

3. CAPABILITIES: PERCEPTIONS AND PROJECTIONS

There are obvious limits to the understanding that can be derived from public nuclear doctrines. Those who devise them have full knowledge of their signalling power; accordingly, they make deliberate trade-offs between ambiguity and clarity.⁵² Those who examine them do so with scepticism, especially in the light of the geopolitical and security circumstances – they may do so with a view to justifying their own policies. Both sides develop narratives that resonate with wider political contexts, including for domestic audiences. Across the United States, the Russian Federation, and China, there appears to be substantial dissonance between the nuclear escalation strategies presented by each State and how their strategic competitors interpret those strategies. It is instructive that perceptions of escalation strategies draw primarily not on doctrines but postures, with States citing their competitors' practices in the development and deployment of nuclear weapons and related systems. For example, more than one US official has flatly stated that they do not believe China's no-first-use policy; one expressly argued that a close look at Chinese forces and strategy represented the only means with which the United States could effectively tailor its deterrence accordingly.⁵³

Doctrines and policies have intrinsic value as means of transparency. But worst-case scenario thinking about them, as described, reinforces that they cannot be detached from the surrounding strategic environment. Even if nuclear escalation strategies and their external interpretation were to be perfectly harmonized, that would provide no guarantee of reduced escalatory risk. States could still clash because of their differentiated national interests or their basic values and principles; these can have an impact on their appetites for risk and, in some cases, propel them to exploit risk – this is the essence of brinkmanship. But the current nature of the mutual perception and the severity of the dissonance have real consequences by creating ample space for misperception, miscalculation, or misunderstanding. Lack of clarity over “red lines” and nuclear use thresholds in particular can drive inadvertent escalation. As outlined above, external perceptions of each State's nuclear escalation strategy attribute a more aggressive stance than is presented. In a best-case scenario, this could induce greater caution on all sides. Yet, projecting upon a competitor or adversary a wide range of circumstances in which they are willing to use nuclear weapons can also accelerate conflict spirals, fuelling “use it or lose it” dilemmas

⁵² Office of the Secretary of Defense, Annual Report to Congress: Military and Security Developments Involving the People's Republic of China, 2020, <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>, p. 113.

⁵³ R. Soofer, United States Deputy Assistant Secretary of Defense for Nuclear and Missile Defense Policy, Remarks at the Mitchell Institute Nuclear Deterrence Forum Series, 2 September 2020, <https://www.defense.gov/Newsroom/Transcripts/Transcript/Article/2337753/dasd-for-nuclear-and-missile-defense-policy-delivers-remarks-at-the-mitchell-in/>.

for the interpreting State in which perception influences its choices and may become “self-fulfilling prophecies.”⁵⁴

This section examines this possibility. It does this by linking the perceptions surrounding nuclear escalation strategies to dialogue around three specific capabilities: (a) non-strategic nuclear weapons, (b) missile defence systems, and (c) submarine forces, including nuclear-powered ballistic missile submarines (SSBNs). Certainly, these do not comprise an exhaustive list, but they do provide key and instructive examples of how the ‘great powers’ project intent (for instance, around lowered thresholds for nuclear use, or the establishment of escalation dominance) onto their competitors or adversaries. This section outlines the scepticism, tension, and, at times, hostility that has emerged among the United States, the Russian Federation, and China in conjunction with the development or deployment of each capability. The discussion also includes longer-term implications stemming from these projections of intent, which can effectuate crisis situations involving those States. It then presents a geopolitical context or theatre in which concerns about these capabilities have prominently featured, providing the space for potential hypothetical nuclear escalatory sequences.

3.1. NON-STRATEGIC NUCLEAR WEAPONS

3.1.1. Overview

The prominence of non-strategic nuclear weapons – also described as “tactical”, “theatre”, “battlefield”, or “short-range” nuclear weapons – in modernization plans and military strategies across the nuclear-armed States

has worrisome implications amid a backdrop of geopolitical strife.⁵⁵ These capabilities have not yet explicitly fallen within the scope of an arms control agreement, although some have been subject to certain limits and unilateral constraints – including through the 1987 Intermediate-range Nuclear Forces (INF) Treaty and the 1991 Presidential Nuclear Initiatives. Experts estimate the current global inventory of non-strategic nuclear weapons to be 2,500, with as many as 2,000 belonging to Russia; the United States stores an estimated 150 in Europe as part of NATO’s nuclear-sharing arrangement.⁵⁶ Notably, none of these weapons – Russian and US – are operationally deployed (or mated to their delivery systems) on a day-to-day basis in the European theatre. Still, their presence continues to drive tension. Concerns about the potential use of these capabilities feature prominently in the context of both Russia–United States and China–United States relations. Expressed attitudes towards non-strategic nuclear weapons on all sides embody fundamental scepticism about the stated nature of deterrence objectives and are inextricably linked to perceptions of expanded escalation strategies.

For the United States, the disparity in numbers in Europe heightens suspicion about Russia’s willingness for limited nuclear use, in line with perceptions of an “escalate to de-escalate” strategy.⁵⁷ The US Nuclear Posture Review hypothesizes that this emboldened stance exists because “Moscow apparently believes that the United States is unwilling to respond to Russian employment of tactical nuclear weapons with strategic nuclear weapons”.⁵⁸ For its part, Russia has accused the United States of preparing its European allies to use its tactical nuclear stockpile against Russia;

⁵⁴ U. Kühn, Perceptions in the Euro-Atlantic, Nuclear Risk Reduction Policy Brief no. 3, UNIDIR, 2020, <https://doi.org/10.37559/WMD/20/NRR/04>, p. 2.

⁵⁵ For more on non-strategic nuclear weapons, including definitional issues, see P. Podvig and J. Serrat, Lock Them Up: Zero-Deployed Non-Strategic Nuclear Weapons in Europe, UNIDIR, 2017, <https://unidir.org/publication/lock-them-zero-deployed-non-strategic-nuclear-weapons-europe>.

⁵⁶ H.M. Kristensen and M. Korda, “Tactical Nuclear Weapons, 2019”, Bulletin of the Atomic Scientists, vol. 75, no. 5, 2019, <https://doi.org/10.1080/00963402.2019.1654273>.

⁵⁷ Ibid.

⁵⁸ United States Department of Defense, Nuclear Posture Review 2018, February 2018, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEWFINAL-REPORT.PDF>, p. 7.

the Russian Foreign Minister, Sergey Lavrov, has argued that the arsenal is emblematic of an “outspokenly aggressive stance” that suggests a lowered nuclear use threshold.⁵⁹ Concerns about consideration of their use – linked to concepts like the United States’ “tailored deterrence” – will only intensify as non-strategic nuclear weapons grow in numbers and types. This pertains to China as well, which considers its entire arsenal to be strategic by virtue of its no-first-use policy and minimum deterrence. Yet US scepticism about those policies, exacerbated by general opacity about Chinese capabilities, have clear implications, as military planning already operates with the view that China has weapons “with ranges and missions that could be considered nonstrategic”.⁶⁰ While for China such nuclear forces factor into its deterrent relationship with India, US suspicions about China’s non-strategic nuclear weapons feature especially in potential regional crises.⁶¹

3.1.2. Illustrative context

As suggested, the presence of non-strategic nuclear weapons contributes to a tense geopolitical and security environment on the European continent. The Russian Deputy Defence Minister, Anatoly Antonov, observed in 2013 that Russia’s larger stockpiles did not endanger the US mainland; as such, he claimed that NATO’s arsenal of non-strategic nuclear weapons posed an imbalanced threat.⁶² Setting the merits of this rhetoric aside, these NATO capabilities appear to contribute to Russia’s perceived vulnerability,

already heightened because of the alliance’s eastward expansion – with the Baltic States, Estonia, Latvia, and Lithuania, becoming members in 2004. For the Russian Federation, NATO’s presence closer to its borders than at any time during the Cold War constitutes its pre-eminent security threat. The United States in 2017 introduced its Patriot anti-aircraft missile systems for the first time to one of the Baltic States as part of NATO war games; in 2018, the US Navy re-established its Second Fleet for the North Atlantic.⁶³ An Aegis Ashore missile defence site that is planned for Poland has been referred to by the Russian Deputy Foreign Minister, Sergey Ryabkov, as causing “perhaps, our greatest alarm”.⁶⁴ For the Russian Federation, these movements might appear as prelude to expansive NATO deployments, perhaps – and this is relevant in the context of accusations about a lowered nuclear use threshold – even a pre-emptive strike.

For the West, meanwhile, Russian manoeuvres took on new meaning following the 2014 Ukrainian crisis. The Commanding General of US troops in Europe observed that Russian incursions into Crimea in 2014 and Georgia in 2008 had taken place “against the backdrop of an exercise”.⁶⁵ The presence of non-strategic nuclear weapons adds a complicating factor, especially in the light of the established US belief that the Russian Federation is willing to escalate to nuclear use to terminate a regional conflict. Moscow also reportedly warned the US Secretary of Defense in 2017 that it “would

⁵⁹ “Lavrov Accuses US of Psyching up EU Armies for Use of Nukes against Russia”, TASS Russian News Agency, 28 February 2018, <https://tass.com/politics/991923>.

⁶⁰ A.F. Woolf, Nonstrategic Nuclear Weapons, Congressional Research Service (CRS) Report RL32572, 4 May 2020, <https://crsreports.congress.gov/product/pdf/RL/RL32572/40>.

⁶¹ M. Kurita, “China-India Relationship and Nuclear Deterrence”, NIDS Security Studies, vol. 19, no. 2, 2017, https://www.nids.mod.go.jp/english/publication/kiyo/pdf/2018/bulletin_e2018_4.pdf.

⁶² “U.S. Tactical Nuclear Weapons Must Be Withdrawn from Europe – Russian Defense Ministry”, Russia Beyond, 14 August 2013, https://www.rbth.com/news/2013/08/14/us_tactical_nuclear_weapons_must_be_withdrawn_from_europe_-_russian_defe_28898.html.

⁶³ “U.S. Deploys Advanced Anti-Aircraft Missiles in Baltics for First Time”, Reuters, 10 July 2017, <https://www.reuters.com/article/us-usa-baltics-patriot-idUSKBN19V28A>; “Baltic States Push US on Patriot Missile Defense Deployment”, Defense News, 26 May 2017, <https://www.defensenews.com/land/2017/05/26/baltic-states-push-us-on-patriot-missile-defense-deployment/>; and “US Navy Resurrects Second Fleet in Atlantic to Counter Russia”, BBC News, 5 May 2018, <https://www.bbc.com/news/world-us-canada-44014761>.

⁶⁴ “Russia Slams US Aegis Ashore Missile Deployment in Europe as Direct Breach of INF Treaty”, TASS Russian News Agency, 26 November 2018, <https://tass.com/politics/1032585>.

⁶⁵ A. Sytas, “U.S. Concerned about Baltic Incidents in Forthcoming Russian War Games”, Reuters, 16 June 2017, <https://www.reuters.com/article/nato-russia-idUSL8N1JD3NF>.

not hesitate to use tactical nuclear weapons” in case of war in the Baltic region.⁶⁶ The disparity in stockpile numbers in favour of the Russian Federation is a factor here; the Baltic States, for instance, have pushed for the permanent deployment of the Patriot system.⁶⁷ Given this context, the Article 5 mutual-defence clause in NATO’s foundational treaty adds to the possibility of escalation. Already the manoeuvring of the Russian Federation and the West in close proximity in the Baltic region has driven a series of close military encounters in recent years (some evidently deliberate).⁶⁸ The characteristics of non-strategic nuclear weapons – such as being seen as more “useable” due to their accuracy and lower yields, and causing confusion about the nature of their payload – heightens escalation risks.⁶⁹



US MISSILE DEFENCE AGENCY

The possibility of confrontation in the Baltic region is “dangerously high”.⁷⁰

3.2. MISSILE DEFENCE SYSTEMS

3.2.1. Overview

Missile defence capabilities are a critical point of contention in the strategic relations between the United States, the Russian Federation, and China. The tension dates from the withdrawal by the United States from the bilateral Russian-US Anti-Ballistic Missile Treaty in 2002. The primary source of tension between the ‘great powers’ on these capabilities is the US missile defence system, and the United States’ continued investments in and deployments of the system, with clear implications for the potential escalation to nuclear use. As suggested, both the Russian Federation and China point to US missile defence to justify investments in their new offensive capabilities. They have also taken steps to improve their own missile defence systems. Russia’s system exists as part of a wide-ranging air-space defence concept, defined by one expert as “a multilayered and multipurpose system for protection of Russia and its closest allies” from conventional offensive and limited nuclear strikes through a wide range of capabilities.⁷¹ Notably, several US assessments suggest that Russian air and missile defence systems include non-strategic nuclear weapons.⁷² China, meanwhile, has identified its air and missile defence capabilities as an area for further development; its enhanced cooperation with the Russian Federation reflects increased attention and

⁶⁶ B. Woodward, *Fear: Trump in the White House*, 2018, p. 132.

⁶⁷ A. Sytas, “Lithuania Wants More NATO Anti-Aircraft Missiles to Deter Russia”, Reuters, 20 April 2018, <https://www.reuters.com/article/us-lithuania-defence-idUSKBN1HR2C0>.

⁶⁸ T. Frear, “Lessons Learned? Success and Failure in Managing Russia–West Incidents 2014–2018”, Euro-Atlantic Security Policy Brief, European Leadership Network, April 2018, <https://www.europeanleadershipnetwork.org/policy-brief/lessons-learned-success-and-failure-in-managing-russia-west-military-incidents-2014-2018/>.

⁶⁹ See A. Weber and C. Parthemore, “Cruise Control: The Logical Next Step in Nuclear Arms Control?”, *Journal for Peace and Nuclear Disarmament*, vol. 2, no. 2, 2019, <https://doi.org/10.1080/25751654.2019.1681886>.

⁷⁰ U. Kühn, *Preventing Escalation in the Baltics: A NATO Playbook*, Carnegie Endowment for International Peace, 2018, <https://carnegieendowment.org/2018/03/28/preventing-escalation-in-baltics-nato-playbook-pub-75878>, p. 1.

⁷¹ A. Arbatov, “The Vicissitudes of Russian Missile Defense”, *Bulletin of the Atomic Scientists*, vol. 74, no. 4, 2018, pp. 227–237, <https://doi.org/10.1080/00963402.2018.1486595>.

⁷² H.M. Kristensen and M. Korda, “Russian nuclear weapons, 2021”, *Bulletin of the Atomic Scientists*, vol. 77, no. 2, 2021, pp. 90–108, <https://doi.org/10.1080/00963402.2021.1885869>; and C.W. Hsiung, “Missile Defense and Early Warning Missile Attack System Cooperation: Enhancing the Sino-Russian Defense Partnership”, IFS Insights, Norwegian Institute for Defence Studies, 2020, <https://fhs.brage.unit.no/fhs-xmlui/handle/11250/2675322>.

investment in relevant technologies.⁷³

The United States presents its missile defence system (and related offensive options) as means for “damage limitation”; the 2019 US Missile Defense Review cited the system’s role “for regional missile threats and for rogue state [intercontinental ballistic missile (ICBM)] threats to the U.S. homeland”.⁷⁴ Yet for its competitors, the utility of missile defence does not appear limited to situations in which a regional adversary has introduced nuclear weapons into conflict. Alarming, US missile defence is seen by the Russian Federation and China as posing a direct threat to their nuclear retaliatory capabilities.⁷⁵ This was further fuelled by a statement from President Trump that the goal of the system was to “detect and destroy any missile launched against the United States – anywhere, anytime, anyplace”.⁷⁶ President Putin has noted the range of the system, accompanying cruisers and destroyers, and development and use of missiles (“target missiles”) that have “offensive combat use”.⁷⁷ Similarly, the Chinese Foreign Minister, Wang Yi, has argued that the US THAAD system, and specifically its X-Band radar monitoring scope, “goes far beyond the defense need of the Korean Peninsula”.⁷⁸ The offensive intention assigned to the United States suggests fear about a decapitating first

strike. Putin has indicated that the Russian Federation would target missile defence sites that posed a threat to its national security, and also threatened to respond against “decision-making centres” for the pertinent systems.⁷⁹ The longer-term technology and arms racing dynamics feed into the heightened risk of crisis. All these factors feed into potential escalatory scenarios.

3.2.2. Illustrative context

The perception gap regarding the purpose of US missile defence is especially pronounced in the China–United States relationship, with the deployment of ballistic missile defence systems to US allies in East Asia long a point of contention for Beijing. This is in part due to China’s nuclear no-first-use policy and limited nuclear forces, with US advancements in both homeland and theatre missile defence clearly seen as presenting a potential threat to its retaliatory capability.⁸⁰ This applies not only in the context of Chinese strategic forces but also with China’s conventional deterrent – the centrepiece of which lies in its land-based missile forces.⁸¹ Notably, the increased integration of US homeland and theatre missile defence systems, and increased interoperability across theatre missile defence components (including between the THAAD and the Patriot Advanced Capability-3

- ⁷³ State Council Information Office of the People’s Republic of China, “China’s National Defense in the New Era”, July 2019, http://www.xinhuanet.com/english/2019-07/24/c_138253389.htm.
- ⁷⁴ US Department of Defense, 2019 Missile Defense Review, January 2019, <https://media.defense.gov/2019/Jan/17/2002080666/-1/-1/1/2019-MISSILE-DEFENSE-REVIEW.pdf>, p. VII. See also United States Department of Defense, Nuclear Posture Review 2018, February 2018, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEWFINAL-REPORT.PDF>, p. 32.
- ⁷⁵ The successful destruction of an ICBM in 2020 by the United States’ Standard-Missile 3 Block IIA interceptor could be a milestone in that regard, representing the potential “qualitative breakthrough that may seriously upend [Russia’s and China’s] confidence in their nuclear delivery capabilities”. See A. Panda, “A New U.S. Missile Defense Test May Have Increased the Risk of Nuclear War”, Commentary, Carnegie Endowment for International Peace, 19 November 2020, <https://carnegieendowment.org/2020/11/19/new-u.s.-missile-defense-test-may-have-increased-risk-of-nuclear-war-pub-83273>.
- ⁷⁶ P. Stewart, “Trump Missile Defence Review Calls North Korea ‘Extraordinary Threat’”, Reuters, 17 January 2019, <https://www.reuters.com/article/uk-usa-defense-missiles-idUKKCNIPBOHS>.
- ⁷⁷ V. Putin, “Presidential Address to Federal Assembly”, 20 February 2019, <http://en.kremlin.ru/events/president/transcripts/messages/59863>. See also V. Putin, “Presidential Address to the Federal Assembly”, 1 March 2018, <http://en.kremlin.ru/events/president/news/56957>.
- ⁷⁸ Ministry of Foreign Affairs of the People’s Republic of China, “Wang Yi Talks about US’s Plan to Deploy THAAD Missile Defense System in ROK”, 12 February 2016, <https://www.fmprc.gov.cn/ce/cgla/eng/topnews/t1340525.htm>.
- ⁷⁹ V. Putin, “Presidential Address to Federal Assembly”, 20 February 2019, <http://en.kremlin.ru/events/president/transcripts/messages/59863>. See also A. Panda, “On ‘Great Power Competition’”, Nuclear Risk Reduction Policy Brief no. 1, UNIDIR, 2020, <https://doi.org/10.37559/WMD/20/NRR/02>; and V. Putin, “Transcript of Annual Big Press Conference”, 14 February 2008, <http://en.kremlin.ru/events/president/transcripts/24835>.
- ⁸⁰ P. Meyer, Ballistic Missile Defence and Outer Space Security: A Strategic Interdependence, Space Dossier File no. 6, UNIDIR, 2020, <https://unidir.org/publication/space-dossier-file-6-ballistic-missile-defence-and-outer-space-security-strategic>.
- ⁸¹ Ibid., p. 24.

systems), could “enhance the U.S. ability to degrade China’s strategic deterrent”.⁸² The cross-cutting impact of missile defence and the blurring of the conventional-nuclear line also create additional sources of operational ambiguity, enhancing the possibility for nuclear escalation – including inadvertent. Compounding the issue in a potential crisis situation is the commingling of some aspects of China’s nuclear and conventional missile forces (including command and control).⁸³

The possibility of China-United States entangled interaction linked to missile defence cannot be ignored. As noted, the 2018 US Nuclear Posture Review cites “attacks on U.S. or allied nuclear forces, their command and control, or warning and attack assessment capabilities” as a reason for consideration of nuclear employment.⁸⁴ The idea that China could target US overhead persistent infrared (OPIR) capabilities – which support missile detection and warning – during a conventional conflict has been raised by experts, especially given China’s perceptions of US theatre missile defence systems. Furthermore, given aggressive manoeuvring of the powers in the East and South China Seas, outbreak of conventional conflict is a distinct possibility.⁸⁵

Indeed, confrontation between China and Taiwan – seen by China as an internal matter – has long been cited as one scenario that could plausibly spark a nuclear conflict between China and the United States.⁸⁶ As highlighted, the United States does not discount the possibility that China would engage in “nuclear activities” to end conflict there.⁸⁷ Notably, US nuclear threats against China characterized the first Taiwan Strait Crisis of 1954–1958, which kickstarted the Chinese nuclear weapon programme in some narratives.⁸⁸ And during the third Taiwan Strait Crisis, in 1996, the United States took notice when the Chinese military used the nuclear-capable M-9 ballistic missile in a military exercise that simulated an invasion of the island.⁸⁹ Recent movement involving US aircraft carriers and Chinese bombers in the Taiwan Strait underscores the potential for confrontation and nuclear escalation there.⁹⁰

3.3. SUBMARINE FORCES

3.3.1. Overview

Rapid advances in submarine technology – in particular in the range and accuracy of submarine-launched ballistic missiles (SLBMs) – are altering the nature of the undersea nuclear

- 82 A. Panda, “US Conducts First Successful THAAD-Patriot Communications Test”, *The Diplomat*, 7 April 2018, <https://thediplomat.com/2018/04/us-conducts-first-successful-thaad-patriot-communications-test/>.
- 83 J. Borrie, Strategic Technologies, Nuclear Risk Reduction Policy Brief no. 2, UNIDIR, 2020, <https://doi.org/10.37559/WMD/20/NRR/03>.
- 84 United States Department of Defense, Nuclear Posture Review 2018, February 2018, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/2018-NUCLEAR-POSTURE-REVIEWFINAL-REPORT.PDF>, p. 21.
- 85 B. MacDonald, “Conventional Missiles, Missile Defense, and Strategic Stability: U.S. Perspective”, in P.M. Kim (ed.), *Enhancing U.S.-China Strategic Stability in an Era of Strategic Competition: U.S. and Chinese Perspectives*, United States Institute of Peace, no. 172, April 2021, <https://www.usip.org/publications/2021/04/enhancing-us-china-strategic-stability-era-strategic-competition>.
- 86 While there is no formal military alliance between the United States and Taiwan, the Taiwan Relations Act of 1979 (Public Law 96-8, 22 U.S.C. 3301 et seq.) specifies the maintenance of US capacity “to resist any resort to force or other forms of coercion that would jeopardize the security . . . of the people on Taiwan”. Also see F.S. Cunningham and M.T. Fravel, “Dangerous Confidence? Chinese Views on Nuclear Escalation”, *International Security*, vol. 44, no. 2, fall 2019, https://doi.org/10.1162/ISEC_a_00359; and C.L. Glaser and S. Fetter, “Should the United States Reject MAD? Damage Limitation and U.S. Nuclear Strategy toward China”, *International Security*, vol. 41, no. 1, summer 2016, https://doi.org/10.1162/ISEC_a_00248.
- 87 Office of the Secretary of Defense, Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China, 2020, <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>, p. 113.
- 88 G. Kulacki, “Nuclear Weapons in the Taiwan Strait Part I”, *Journal for Peace and Nuclear Disarmament*, vol. 3, no. 2, 2020, <https://doi.org/10.1080/25751654.2020.1834963>; and G.H. Chang, “To the Nuclear Brink: Eisenhower, Dulles, and the Quemoy-Matsu Crisis”, *International Security*, vol. 12, no. 4, 1988, <https://doi.org/10.2307/2538996>.
- 89 B. Gellman, “U.S. and China Nearly Came to Blows in ‘96”, *Washington Post*, 21 June 1998, <https://www.washingtonpost.com/archive/politics/1998/06/21/us-and-china-nearly-came-to-blows-in-96/926d105f-1fd8-404c-9995-90984f86a613/>.
- 90 K. Everington, “US Destroyer Steams through Taiwan Strait for 1st Time under Biden”, *Taiwan News*, 4 February 2021, <https://www.taiwannews.com.tw/en/news/4120015>; and R. Pickrell, “Chinese Bombers Simulated an Attack on a US Navy Aircraft Carrier in the South China Sea”, *Business Insider*, 30 January 2021, <https://www.businessinsider.com/chinese-planes-conducted-simulated-attack-on-us-navy-aircraft-carrier-2021-1?r=US&IR=T>.

deterrent, as well as the manner in which it is being perceived. The accuracy, speed, mobility, and stealth of nuclear-powered ballistic missile submarines has prompted heavy investment among the ‘great powers’ in what is considered the most survivable leg of the triad. The United States is due to begin construction of a Columbia-class SSBN that will be quieter and more resilient (a product of its electric-drive propulsion train and its physical placement).⁹¹ The Russian Federation in 2020 entered into force its Borei-class SSBNs, which have been redesigned for noise minimalization and reduced visibility.⁹² China meanwhile is developing its Type 096 SSBNs while recently putting into service upgraded Jin-class (Type 094 and Type 094A) SSBNs with improved radar, sonar, and torpedoes – with the Type 094As having the capacity to fire a SLBM with a range of 10,000 kilometres, according to some military analysts;⁹³ it has also reportedly expanded the building capacity of its existing shipyards.⁹⁴ The effects of these investments are yet to be determined. For instance, stronger and more credible sea-based deterrents could remove incentives for China to further increase its nuclear forces while also underlining the presence of mutual vulnerability for the United States – potentially stemming aggressive behaviours.⁹⁵ This, however, is just one possibility, and indeed perceptions of submarine capabilities

exist in a broader context. Some raise the notion that SSBN and SLBM developments have “transformed retaliatory weapons into potential first strike ones”.⁹⁶

The deployment in 2020 by the United States of the W76-2 SLBM, a “survivable low-yield strategic weapon”, has underlined concerns about the possibility of nuclear use at sea. In claiming the prompt response option was developed for use “in the event of Russian or Chinese theater nuclear use”, the United States implicitly rejected its competitors’ nuclear doctrines.⁹⁷ For its part, the Russian Ministry of Foreign Affairs has accused the United States of lowering its nuclear use threshold, and noted “any attack involving a U.S. [SLBM], regardless of its weapon specifications, would be perceived as a nuclear aggression”.⁹⁸ Such stances can have direct implications for escalatory scenarios. In addition to SSBNs and SLBMs, the possibility of nuclear use at sea is compounded by developments with cruise missile submarines (SSGNs), anti-submarine warfare, and their countermeasures. The Russian Federation has commissioned submarines to be equipped with nuclear-powered UUVs and plans to deploy a hypersonic cruise missile on existing submarines; autonomous systems – like the Poseidon UUV – also raise particular concerns about the possibility of accidental

91 H.M. Kristensen and M. Korda, “United States Nuclear Weapons, 2021”, *Bulletin of the Atomic Scientists*, vol. 77, no. 1, 2021, <https://doi.org/10.1080/00963402.2020.1859865>.

92 M. Starchak, “The Borei-A SSBN: How Effective is Russia’s New Nuclear Submarine?”, *Eurasia Daily Monitor*, vol. 17, no. 86, 16 June 2020, <https://jamestown.org/program/the-borei-a-ssbn-how-effective-is-russias-new-nuclear-submarine/>.

93 M. Chan, “China’s New Nuclear Submarine Missiles Expand Range in US: Analysts”, *South China Morning Post*, 2 May 2021, <https://www.scmp.com/news/china/military/article/3131873/chinas-new-nuclear-submarine-missiles-expand-range-us-analysts>.

94 H.I. Sutton, “Chinese Navy Steps Closer to New Generation of Nuclear Submarines”, *Forbes*, 19 June 2020, <https://www.forbes.com/sites/hisutton/2020/06/19/chinese-navy-gets-closer-to-new-generation-of-nuclear-submarines/?sh=1af57b4a229e>.

95 T. Zhao, *Tides of Change: China’s Nuclear Ballistic Missile Submarines and Strategic Stability*, Carnegie Endowment for International Peace, 2018, <https://carnegietsinghua.org/2018/10/24/tides-of-change-china-s-nuclear-ballistic-missile-submarines-and-strategic-stability-pub-77490>.

96 H.M. Kristensen and M. Korda, “Arms Control and Sea-Launched Nuclear Weapons”, in R. Medcalf et al. (eds.), *The Future of the Undersea Deterrent*, National Security College, 2020, <https://nsc.crawford.anu.edu.au/publication/16145/future-undersea-deterrent-global-survey>, p. 12.

97 Office of the United States Under Secretary of State for Arms Control and International Security, “Strengthening Deterrence and Reducing Nuclear Risks: The Supplemental Low-Yield U.S. Submarine-Launched Warhead”, *Arms Control and International Security Papers*, vol. 1, no. 4, April 2020, <https://2017-2021.state.gov/wp-content/uploads/2020/08/T-Paper-Series-W76-Final-508.pdf>, p. 3.

98 V. Isachenkov, “Russia Slams US Arguments for Low-Yield Nukes”, *AP News*, 29 April 2020, <https://apnews.com/article/e62b5976451bb42a47c1f15ba536484d>.

or unauthorized use.⁹⁹ Again, perceptions about the adversary's strategic intentions and willingness to use nuclear weapons at sea could create self-fulfilling prophecies. For instance, a 2017 Russian Navy document states that demonstrating its readiness to use non-strategic nuclear weapons could help contain further escalation of armed conflict.¹⁰⁰ Some in the United States already fear that China's naval modernization efforts, conventional capabilities, and island-building campaign have given it escalation dominance in the South China Sea.¹⁰¹

3.3.2. Illustrative context

In 1992 and 1993, US attack submarines that were reportedly engaged in surveillance and intelligence-monitoring operations in the Arctic Ocean collided with Russian SSBNs off the port of Murmansk, the largest base of Russia's Northern Fleet, which includes SSBNs and SSGNs.¹⁰² The two accidents took place during a period of improved bilateral relations, when the Russian Federation had decreased the number of submarines on patrol, and both sides had agreed to remove nuclear-tipped cruise missiles from their naval vessels. This was relevant as the US Sierra-class attack submarine involved in 1992 was capable of carrying them.¹⁰³ Should a similar incident take place today, the far more fraught geopolitical

context would add cause for concern. Indeed, the Arctic overall is an increasingly tense and militarized region, identified as "an arena for geopolitical competition".¹⁰⁴ Its strategic importance has risen as melting ice caps open the possibility for expanded shipping routes and access to valuable natural resources. China in 2018 released a white paper on its Arctic policy that specified the importance of the region to its economic development; it has since engaged in a range of diplomatic, economic, and research activities there.¹⁰⁵ Yet the importance of the Arctic to both the economic and military security of the Russian Federation is unmatched.

Russia's Northern Fleet protects its considerable assets in the Western Arctic – home to some of its most advanced defensive capabilities.¹⁰⁶ Technological developments, including the aforementioned UUV and other sophisticated weapon systems, are regularly tested in the area; their deployment appears to both aid Russian access to the North Atlantic and help restrict US and NATO movement there.¹⁰⁷ This has not gone unnoticed. The US Department of Defense is exploring potential sites for establishing strategic Arctic ports.¹⁰⁸ In 2020, the US Air Force deployed B-1 bombers to Norway for the first time, and US Navy destroyers patrolled the Barents Sea for

- 99 V. Putin, "Presidential Address to Federal Assembly", 20 February 2019, <http://en.kremlin.ru/events/president/transcripts/messages/59863>; T. Nilsen, "Norway's Intelligence Fears More Accidents with Russia's Reactor-Powered Weapons Systems", Barents Observer, 11 February 2020, <https://thebarentsobserver.com/en/security/2020/02/norways-intelligence-chief-fears-more-accidents-russias-reactor-powered-weapons>; and "Russia's 'Doomsday Drone' Prepares for Testing", Moscow Times, 26 May 2020, <https://www.themoscowtimes.com/2020/05/26/russias-doomsday-drone-prepares-for-testing-a70386>.
- 100 A. Pavlov, "Nuclear Weapons in the Russian Military Strategy", in A. Pavlov and L. Deriglazova (eds.), *Nuclear Russia: International and Domestic Agendas*, Tomsk University Press, 2020.
- 101 J. Power, "Has China Outsmarted the US in the South China Sea?", Inkstone News, 27 January 2020, <https://www.inkstonenews.com/politics/south-china-sea-has-china-gained-upper-hand-over-america/article/3047315>.
- 102 J.H. Cushman, "Two Subs Collide off Russian Port", New York Times, 19 February 1992, <https://www.nytimes.com/1992/02/19/world/two-subs-collide-off-russian-port.html>; and M.R. Gordon, "U.S. and Russian Subs in Collision in Arctic Ocean near Murmansk", 23 March 1993, <https://www.nytimes.com/1993/03/23/world/us-and-russian-subs-in-collision-in-arctic-ocean-near-murmansk.html>.
- 103 Ibid.
- 104 R. O'Rourke et al., *Changes in the Arctic: Background and Issues for Congress*, Congressional Research Service (CRS) Report R41153, 1 February 2021, <https://crsreports.congress.gov/product/pdf/R/R41153/177>.
- 105 State Council Information Office of the People's Republic of China, "China's Arctic Policy", January 2018, http://www.xinhuanet.com/english/2018-01/26/c_136926498.htm, p. 14.
- 106 D.B. Larter, "The US Navy Returns to an Increasingly Militarized Arctic", Defense News, 12 May 2020, <https://www.defensenews.com/naval/2020/05/11/the-us-navy-returns-to-an-increasingly-militarized-arctic/>.
- 107 S.T. Wezeman, "Military Capabilities in the Arctic: A New Cold War in the High North?", SIPRI Background Paper, October 2016, <https://sipri.org/publications/2016/sipri-background-papers/military-capabilities-arctic>.
- 108 M. Schrieber, "New U.S. Senate Defense Bill Requires Arctic Strategic Ports, Attention on Russia and China", Arctic Today, 2 July 2019, <https://www.arctictoday.com/new-u-s-senate-defense-bill-requires-arctic-strategic-ports-attention-on-russia-and-china/>.

the first time since the Cold War – drawing a response from the Russian Northern Fleet in the form of live-fire drills.¹⁰⁹ As in the Baltic region, a number of provocative incidents have taken place across the North Pacific and the Arctic, involving a record number of aircraft intercepts and disputes over military exercises in exclusive economic zones.¹¹⁰ The United States also continues to enhance its anti-submarine warfare capabilities, building a force whose main role is to “hold the adversary’s strategic assets at risk from the undersea”.¹¹¹ In the context of SSBN and SLBM developments, these activities could be seen as posing an acute threat to the Russian deterrent. The peculiarities of communications with submarines and the increased role of UUVs in anti-submarine operations create additional points of vulnerability that could have an impact on crisis scenarios.¹¹²

109 “America and Britain Play Cold-War Games with Russia in the Arctic”, *The Economist*, 10 May 2020, <https://www.economist.com/europe/2020/05/10/america-and-britain-play-cold-war-games-with-russia-in-the-arctic>.

110 M. Baker, “‘Are We Getting Invaded?’ U.S. Boats Faced Russian Aggression Near Alaska”, *New York Times*, 12 November 2020, <https://www.nytimes.com/2020/11/12/us/russia-military-alaska-arctic-fishing.html>.

111 Commander, United States Submarine Forces, “Commander’s Intent for the United States Submarine Force and Supporting Organizations”, March 2018, <https://www.csp.navy.mil/Portals/2/documents/about/Commanders-Intent-201803.pdf>, p. 10.

112 B. Unal and P. Lewis, *Cybersecurity of Nuclear Weapons Systems: Threats, Vulnerabilities and Consequences*, Chatham House, 11 January 2018, <https://www.chathamhouse.org/2018/01/cybersecurity-nuclear-weapons-systems>; and J.M. Acton (ed.), *Entanglement: Russian and Chinese Perspectives on Non-Nuclear Weapons and Nuclear Risks*, Carnegie Endowment for International Peace, 2017, https://carnegieendowment.org/files/Entanglement_interior_FNL.pdf.



4. RECOMMENDATIONS

Fundamental mistrust between the United States, the Russian Federation, and China concerning their respective nuclear doctrines and escalation strategies has spillover effects in different issue areas. Each State has projected aggressive intentions upon its competitors or adversaries, with developments in a number of technological capabilities seen as an ominous foreshadowing of their potential – even likely – use in the context of scenarios such as a decapitating first strike or limited nuclear use. The spectre of escalation has exacerbated tensions in already fraught geopolitical situations across Europe and the Asia-Pacific. Moreover, mistrust has propelled longer-term action–reaction and arms racing dynamics that contribute to the possibility of future onset of crisis. The risk of nuclear use linked to the perceptions, projections, and dissonance surrounding nuclear escalation strategies should not be underestimated.

This section offers policy recommendations to reduce that risk. It begins with the root of the issue: the lens through which the ‘great powers’ filter capabilities of concerns – including those cited. In taking action at the highest order, in bridging the perception gap and in reducing dissonance across their nuclear doctrines and escalation strategies,

States could help prevent potentially volatile situations from arising in the first place.

4.1. BRIDGE THE PERCEPTION GAP

The prospects of the United States, the Russian Federation, and China improving their broader relational dynamics rests in large part on the presence of regular strategic engagement. Dialogues in those settings, involving pertinent actors from the diplomatic and military spheres, can allow parties to have frank exchange and identify areas of concern. There have been positive indicators on these fronts under the Biden Administration. The extension of the 2010 New START agreement between the United States and the Russian Federation was significant not only of itself but as a potential first step; the Russian Deputy Foreign Minister, Sergey Ryabkov, has called for a renewal of bilateral dialogue with a comprehensive approach that “take[s] into account all factors significant for strategic stability”.¹¹³ Such talks shape the contours for future agreements, as in the case of the long-gestated Soviet–United States Strategic Arms Limitation Talks (SALT) and Strategic Arms Reduction Talks (START) during the Cold War. In the meantime, they can “acquire

¹¹³ Ministry of Foreign Affairs of the Russian Federation, “Deputy Foreign Minister Sergey Ryabkov’s Opening Remarks at a Briefing at the Rossiya Segodnya International Information Agency on Arms Control and Strategic Stability”, 11 February 2021, https://www.mid.ru/en/foreign_policy/news/-/asset_publisher/ckNonkJE02Bw/content/id/4570219.

an institutional mass” that helps States to understand one another better.¹¹⁴ At their high-level strategic dialogue in March 2021, for instance, China drew a clear red line for the United States: the unharmed governing status of the Chinese Communist Party and the security of its Socialist system.¹¹⁵ Further discussion can clarify aspects of the terms of escalation that are not deliberately ambiguous.

In addition to bilateral dialogue, there is a need for trilateral and plurilateral processes involving the ‘great powers’. Trilateral talks are not out of the realm of possibility; Chinese experts have suggested that a broad approach encompassing strategic stability issues could gain traction in Beijing (versus a focus on trilateral arms control negotiations).¹¹⁶ The United States, the Russian Federation, and China do engage under the banner of the P5, and it is welcome news that the group plans to extend its work on nuclear doctrines and strategic risk reduction after the next NPT Review Conference.¹¹⁷ There may be scope to expand that process substantively and through increased technical-level participation – for instance, with military officials to brief on large-scale exercises or working-level contacts to explore modernization plans. To address specific theatres, the three States could turn to multilateral venues that incorporate the views of relevant allies and partners. This includes in the Euro-Atlantic the resumption of the NATO–Russia Council, a formal mechanism for consultation among nuclear experts that last met in 2019; the venue also serves valuable conflict-prevention functions. The Association of Southeast Asian Nations (ASEAN) Regional Forum could play a similar role in East Asia.

While the Arctic Council has generally steered clear of security issues to date, Russia is likely to introduce them on the agenda as Council chair from 2021 to 2023.¹¹⁸

Still, ebbs and flows in strategic dialogues past and present underscore that engagement, while contributing to trust and confidence, also reflects their presence or absence. A complementary means to improve the foundation for trust and confidence might then lie elsewhere – and centres on improving understanding around the capabilities to which the three States cast a wary eye. If the United States, the Russian Federation, and China point to the development and deployment of particular capabilities as “true” indicators of the aggressive intent of their competitors or adversaries, as contributors to a lower threshold for nuclear use, or as means of securing escalation dominance, then addressing the scepticism, tension, and hostility around specific capabilities could dramatically shift those perceptions in a more constructive direction, breaking the cycle of mistrust.

4.2. CLARIFY OR RESTRICT CAPABILITIES

This report has highlighted non-strategic nuclear weapons, missile defence, and submarine forces, and explored the contexts and theatres in which they feature. As Section 3 underlines, these are not the only capabilities that constitute friction points in ‘great power’ relations, and any hypothetical escalation sequence would be likely to feature interactive dynamics between these and other

¹¹⁴ On the SALT talks, “The process was the product [and] acquired an institutional mass that some political innovators might have considered dead weight but that served as a kind of deepwater anchor in Soviet–American relations.” S. Talbott, *Endgame: The Inside Story of SALT II*, 1979, p. 21.

¹¹⁵ “China, U.S. Hold Timely, Helpful High-Level Strategic Dialogue”, Xinhua, 20 March 2021, http://www.xinhuanet.com/english/2021-03/20/c_139823702.htm.

¹¹⁶ J. Fan, “Trilateral Negotiations on Arms Control? Not Time Yet”, *China–US Focus*, 13 September 2019, <https://www.chinausfocus.com/peace-security/trilateral-negotiations-on-arms-control-not-time-yet>; and T. Zhao, “Opportunities for Nuclear Arms Control Engagement with China”, *Arms Control Today*, January 2020, <https://www.armscontrol.org/act/2020-01/features/opportunities-nuclear-arms-control-engagement-china>.

¹¹⁷ A. Liddle, “Disarmament Blog: The P5 Meet in London”, *British Foreign, Commonwealth and Development Office*, 21 February 2020, <https://blogs.fcdo.gov.uk/aidanliddle/2020/02/21/disarmament-blog-the-p5-meet-in-london/>.

¹¹⁸ A. Staalesen, “Moscow Signals It Will Make National Security a Priority in Arctic Council”, *Barents Observer*, 14 October 2020, <https://thebarentsobserver.com/en/security/2020/10/moscow-signals-it-will-make-security-situation-priority-arctic-council>.

capabilities or systems of concern. Indeed some have suggested generalizable risk-reduction activities pertaining to strategic technologies, including a three-step approach to (a) enhance understanding about their implications; (b) restrict or clarify behaviours linked to these capabilities, and (c) restrict the capabilities themselves.¹¹⁹ To focus this report, this subsection highlights measures centred on the featured capabilities in which dissonance has very clearly manifested.

The fact that China frames its nuclear forces as strategic provides an enormous challenge to efforts to address non-strategic nuclear weapons in the China-United States relationship.¹²⁰ China is believed to assign a number of its warheads to medium- and intermediate-range ballistic missiles with regional missions; risks associated with these are compounded by China's commingling of aspects of its conventional and nuclear forces.¹²¹ While most of the Chinese stockpile of warheads is thought to be in central storage, some are kept at smaller regional storage facilities – and experts surmise that these may be sometimes mated to missiles for training purposes.¹²² A shift to a launch-on-warning posture, as the US Department of Defense fears could be taking place, could drive inadvertent escalation scenarios.¹²³ It seems unlikely in the near term that the United States and China can directly address non-strategic

nuclear weapons in a constructive fashion. Risk-reduction efforts may be better-suited to tackling the broader issue of transparency around the Chinese stockpile – perhaps in exchange for assuaging Chinese concerns about US theatre missile defence. A sustained strategic dialogue, as discussed above, could bolster this process and lessen the likelihood of any shifts in Chinese doctrine and posture.

The task of addressing non-strategic nuclear weapons in the Euro-Atlantic is no less daunting. Yet the extension of New START offers hope, especially as negotiations at one point reportedly included the serious consideration of a one-year freeze on existing arsenals that would include, for the first time, non-strategic nuclear weapons.¹²⁴ Yet any progress may require some form of concession from the West, as the US stockpile stationed in the European theatre is seen by Russia as “de facto strategic”.¹²⁵ This could take the form of stockpile reductions or withdrawal from deployment in the theatre, including to central storage.¹²⁶ This is not implausible: some within NATO have questioned the military utility of non-strategic nuclear weapons, and the NATO Strategic Concept no longer refers to the “vital” nature of their presence in Europe as it once did, instead citing a desire to “create the conditions for further reductions in the future”.¹²⁷ Still, the disparity of numbers complicates matters, and work will have to

¹¹⁹ J. Borrie, “Nuclear Risk and the Technological Domain: A Three-Step Approach”, in W. Wan (ed.), *Nuclear Risk Reduction: Closing Pathways to Use*, UNIDIR, 2020, <https://doi.org/10.37559/WMD/20/NRR/01>.

¹²⁰ H.M. Kristensen and M. Korda, “Tactical Nuclear Weapons, 2019”, *Bulletin of the Atomic Scientists*, vol. 75, no. 5, 2019, <https://doi.org/10.1080/00963402.2019.1654273>.

¹²¹ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019*, https://media.defense.gov/2019/May/02/2002127082/-1/-1/1/2019_CHINA_MILITARY_POWER_REPORT.pdf.

¹²² H.M. Kristensen and M. Korda, “Chinese Nuclear Forces, 2020”, *Bulletin of the Atomic Scientists*, vol. 76, no. 6, 2020, <https://doi.org/10.1080/00963402.2020.1846432>; and M.A. Stokes, *China's Nuclear Warhead Storage and Handling System*, Project 2049 Institute, 2010, <https://project2049.net/2010/03/12/chinas-nuclear-warhead-storage-and-handling-system/>.

¹²³ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China, 2020*, <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>.

¹²⁴ A.F. Woolf, *Nonstrategic Nuclear Weapons*, Congressional Research Service (CRS) Report RL32572, 4 May 2020, <https://crsreports.congress.gov/product/pdf/RL/RL32572/40>.

¹²⁵ A. Bodrov, “Reducing the U.S. and Russian Nuclear Arsenals: Yesterday, Today, Tomorrow”, in A. Pavlov and L. Deriglazova (eds.), *Nuclear Russia: International and Domestic Agendas*, Tomsk University Press, 2020.

¹²⁶ P. Podvig and J. Serrat, *Lock Them Up: Zero-Deployed Non-Strategic Nuclear Weapons in Europe*, UNIDIR, 2017, <https://unidir.org/publication/lock-them-zero-deployed-non-strategic-nuclear-weapons-europe>.

¹²⁷ NATO, “The Alliance's Strategic Concept”, Approved 24 April 1999, https://www.nato.int/cps/en/natolive/official_texts_27433.htm, para. 63; and NATO, “Active Engagement, Modern Defence, Strategic Concept for the Defence and Security of the Members of the North Atlantic Treaty Organization”, 29 November 2010, <http://www.nato.int/lisbon2010/strategic-concept-2010-eng.pdf>, pp. 4–5.

be done to reassure NATO's easternmost members. Tackling non-strategic nuclear weapons in Europe may require trade-offs elsewhere.

Addressing capabilities central to the deterrent of the trio of nuclear weapon States poses immense challenges. One possible path ahead is to clarify where the boundaries lie. This could include expert-level collaboration between the United States and China, as some suggest, to explore whether there could be technical or operational distinctions made between theatre and strategic-level missile defence systems.¹²⁸ Elsewhere, the US deployment of the W76-2 warhead contributes to deliberate ambiguity with potentially disastrous consequences. Both US President Biden and Vice President Kamala Harris have expressed concerns about the low-yield warhead in the past: as a candidate, the former called it a “bad idea”; as a Senator, the latter pushed for a deployment ban.¹²⁹ A US policy reversal could have positive reverberations and would slow maritime arms racing dynamics. It would also present an opportunity to reformulate the strategic-tactical divide, which is relevant in the light of developments among “strategic conventional weapons” that further blur the conventional-nuclear gap.

In the meantime, confidence- and security-building measures centred on specific capabilities could help to end worst-case scenario planning around them. Information-exchange around SSBN and SSGN capabilities

could help to reduce misperception, miscalculation, and misunderstanding.¹³⁰ The three States could also look to develop operational norms around submerged operations – for instance, regarding the proximity of deployed submarines to the coastlines of others, or limiting following or “harassing” manoeuvres that increase the risk of collision. With respect to missile defence capabilities, States could consider limiting their deployment within certain geographic boundaries or refraining from loading offensive capabilities into launchers. Transparency measures around missile defence installations – such as observations, deployment notification, and use of national technical means – could serve as reassurance.¹³¹ The defunct 1997 Confidence-Building Measures Agreement on theatre missile defences (signed as part of a package during negotiations of START II) provides a basis for further development in this area.¹³² Unilateral limits on missile defence systems could present the aforementioned trade-off for movement on non-nuclear strategic weapons, a possibility raised by some experts.¹³³ More collaborative action – including the establishment of the joint warning centres in Europe once proposed by Putin,¹³⁴ or a revitalization of the ABM Treaty – appears unlikely at this time, although any steps could help address an issue that appears as one of the biggest impediments to trust in both Russia-United States and China-United States relations.

Addressing dissonance at both the broader

128 T. Zhao, *Narrowing the US-China Gap on Missile Defense: How to Help Forestall a Nuclear Arms Race*, Carnegie Endowment for International Peace, 29 June 2020, <https://carnegietsinghua.org/2020/06/29/narrowing-u.s.-china-gap-on-missile-defense-how-to-help-forestall-nuclear-arms-race-pub-82120>.

129 J. Trevithick, “New Low-Yield Nuclear Warheads That Biden Calls a ‘Bad Idea’ Have All Been Delivered”, *The Drive*, 29 December 2020, <https://www.thedrive.com/the-war-zone/38469/production-of-new-low-yield-nuclear-warheads-that-biden-calls-a-bad-idea-is-complete>.

130 H.M. Kristensen and M. Korda, “Arms Control and Sea-Launched Nuclear Weapons”, in R. Medcalf et al. (eds.), *The Future of the Undersea Deterrent*, National Security College, 2020, <https://nsc.crawford.anu.edu.au/publication/16145/future-undersea-deterrent-global-survey>.

131 J.M. Acton, T. MacDonald and P. Vaddi, *Revamping Nuclear Arms Control: Five Near-Term Proposals*, Carnegie Endowment for International Peace, 2020, <https://carnegieendowment.org/2020/12/14/revamping-nuclear-arms-control-five-near-term-proposals-pub-83429>.

132 Agreement on Confidence-Building Measures Related to Systems to Counter Ballistic Missiles Other than Strategic Ballistic Missiles, 26 September 1997, https://fas.org/nuke/control/abmt/text/abm_cbm.htm.

133 S. Pifer, “Reviving Nuclear Arms Control Under Biden”, *Brookings Institution*, 1 December 2020, <https://www.brookings.edu/blog/order-from-chaos/2020/12/01/reviving-nuclear-arms-control-under-biden>.

134 A. Bodrov, “Reducing the U.S. and Russian Nuclear Arsenals: Yesterday, Today, Tomorrow”, in A. Pavlov and L. Deriglazova (eds.), *Nuclear Russia: International and Domestic Agendas*, Tomsk University Press, 2020.



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strategic level and in the context of specific capabilities would constitute a watershed in reducing escalation risks. It is also through such processes that States may come to revisit their nuclear postures, having an impact both on how they formulate their own nuclear escalation strategies and also on how they come to perceive those of others. In the meantime, States would be wise to take immediate action to reduce risk at the operational level. The discussion of illustrative escalatory contexts in Section 3 drew from past incidents featuring the United States, the Russian Federation, and China. None have heretofore escalated to the level of nuclear use, although in several instances the possibility of nuclear war has been invoked by one side or another. The presence of these past crises, while admittedly of varying scales and characters, does present a structure for identifying practical risk-reduction activities in each case. If enacted by States, these can help facilitate movement towards the de-escalation of potentially volatile situations that could otherwise drive risk of use.

4.3. REDUCE OPERATIONAL RISK

4.3.1. Strengthen conflict-prevention and -management tools

The backdrop of ‘great power competition’ has focused attention on military behaviours and incidents that could be perceived as provocative, potentially instigating crises and driving escalation. The possibility is not new: the United States and the Soviet Union constructed a Cold War-era toolkit to guard against it. This centred on several bilateral agreements – the establishment in 1963 of a direct communications link (the Moscow–Washington hotline), the 1972 Agreement on the Prevention of Incidents On and Over the High Seas (the INCSEA accord), and the 1989 Prevention of Dangerous Military Activities Agreement (DMA) – along with some relevant provisions in the Vienna Document 2011 on Confidence- and Security-Building Measures under the Organization for Security and Co-operation in Europe (OSCE). The China–United States relationship lags behind in comparison, although the two sides established a direct hotline in 2007, signed a memorandum of understanding (MOU) in 2014 on the rules of behaviour concerning air and maritime encounters, and in 2017 agreed on a joint

strategic dialogue mechanism to improve military communication. All three ‘great powers’ are also members of the multilateral 2014 Code for Unplanned Encounters at Sea (CUES).

There are ways for all sides to bolster their conflict-prevention and -management approaches. In the Baltic Sea, military-civilian encounters have been an area of focus. A group of States – including the Russian Federation – negotiated safer flight paths and shared flight plan data (involving military cargo) to avoid inadvertent airspace violations; some made public their principles of due regard, while NATO established a unified framework policy on the expected behaviours of State aircraft. The Baltic Sea Project Team and later the Expert Group on Baltic Sea Air Safety engaged in awareness-raising that included the publication of best practices.¹³⁵ The United States, the Russian Federation, and China could consider the viability of such activities in other contexts, for instance around the Taiwan Strait. States could also increase transparency around their maritime operations. In particular, a greater awareness of military activities and procedures in and around the Arctic, where commercial development is expanding, may lessen the kind of encounters with civilian cargo and fishing vessels that raise general tensions and could turn deadly.

There is space for expanding the toolkit for military-to-military encounters. Russian and US military leaders, for instance, regularly exchanged information on intended military operations during the Syrian war through

a “de-conflicting” line to reduce the risk of unintended direct conflict.¹³⁶ There is a lack of such tools especially in the China-United States relationship. Both the multilateral CUES and the bilateral MOU are voluntary and non-binding; the former does not specify in which maritime zones it operates and – true to its name – is limited to “unplanned” encounters.¹³⁷ The China-United States MOU lacks mention of operations involving submarines and non-naval maritime law-enforcement ships as well as surveillance and intelligence activities – their absence is conspicuous given the nature of activity in the East and South China Seas. It also lacks a dedicated dispute-resolution mechanism. Notably, Article IV of the memorandum calls for an annual generalized assessment under the 1998 Military Maritime Consultative Agreement, which opens the door for potential revision. Still, a subsequently agreed annex to the MOU underscores its non-binding nature, for instance with safety rules for air-to-air encounters to be utilized only “to the extent practicable when compatible with mission requirements”.¹³⁸ Accordingly, there may be scope for the United States and China to draw on Article IV, or consider INCSEA- and DMA-like accords that formalize commitments around air and maritime operations, involve law-enforcement agencies and civilian proxies, and incorporate a Syria-like “rapid response” communication channel at the operational level.¹³⁹

Increased military activities and altered capabilities also call for a re-examination of existing agreements – to potentially expand the list of provocative actions to be avoided,

¹³⁵ T. Frear, “Lessons Learned? Success and Failure in Managing Russia-West Incidents 2014–2018”, Euro-Atlantic Security Policy Brief, European Leadership Network, April 2018, <https://www.europeanleadershipnetwork.org/policy-brief/lessons-learned-success-and-failure-in-managing-russia-west-military-incidents-2014-2018/>.

¹³⁶ H. Elbahtimy, “Understanding Risks of Nuclear Use in the Middle East”, in W. Wan (ed.), *Nuclear Risk Reduction: Closing Pathways to Use*, UNIDIR, 2020, <https://doi.org/10.37559/WMD/20/NRR/01>.

¹³⁷ A.D. Ton, “Code for Unplanned Encounters at Sea and its Practical Limitations in the East and South China Seas”, *Australian Journal of Maritime and Ocean Affairs*, vol. 9, no. 4, 2017, <https://doi.org/10.1080/18366503.2017.1326075>.

¹³⁸ Supplement to the Memorandum of Understanding on Rules of Behavior for Safety of Air and Maritime Encounters Between the Department of Defense of the United States of America and the Ministry of National Defense of the People’s Republic of China, signed 15 and 18 September 2015, https://china.usc.edu/sites/default/files/article/attachments/US-CHINA_AIR_ENCOUNTERS_ANNEX_SEP_2015.pdf.

¹³⁹ For different perspectives on this possibility, see W. Chai (Comm.), *Application of INCSEA Principles to the Taiwan Strait*, Cooperative Monitoring Center (CMC) Occasional Paper no. 30, June 2003, <https://doi.org/10.2172/915150>; and R. Pedrozo, “The U.S.–China Incidents at Sea Agreement: A Recipe for Disaster”, *Journal of National Security Law and Policy*, vol. 6, no. 1, 2012, <https://jnslp.com/2012/08/29/the-u-s-china-incidents-at-sea-agreement-a-recipe-for-disaster/>.

specify safe separation distances, revisit contact points, and consider emergency rights and provisions.¹⁴⁰ For instance, in 2017 the United Kingdom and the Russian Federation added a draft protocol to their INCSEA agreement that incorporates a ban on lasers and adds regulations on aircraft approaches; some experts have called for it to also include encounters involving submerged submarines and aircraft.¹⁴¹ The Russia–United States DMA is “relatively underused”, with infrequent meetings of its review commission and no designation of Special Caution Areas.¹⁴² Where feasible, States should convene more joint military exercises that put the agreed rules into practice. They can also bolster the norm around those rules: through political statements that reiterate existing commitments, training courses (including at the national level) for political or military leadership, or joint tabletop exercises that simulate relevant scenarios. In the Euro-Atlantic region, the United States and the Russian Federation should consider the feasibility of a common multilateral framework for managing incidents (e.g. under OSCE auspices) and look to address the absence of bilateral agreements between the Russian Federation and its immediately neighbouring States. All of these activities could get to the heart of the misperception, miscalculation, and misunderstanding that feature in the concept of strategic risk reduction as espoused by the nuclear weapon States.

4.3.2. Expand notification of military activities

The possibility of dangerous interactions linked to the military activities of the ‘great powers’ is growing partly as a function of the increased frequency of those activities. INCSEA- and DMA-like agreements establish rules to govern potential encounters, but they do not address the inciting impact of military activities themselves; indeed the China–United States MOU establishes rules of safety explicitly “without prejudice to either Side’s policy perspective on military activities in the Exclusive Economic Zone”.¹⁴³ A different approach that will blunt potential fallout from military activities therefore involves increasing transparency around them. Again, a framework is already in place. This includes the 1992 Treaty on Open Skies, which is centred on the mutual aerial observation among its currently 34 States parties in Europe and North America. However, the US withdrawal in 2020 and the Russian intention to follow suit constitute blows for the regime.¹⁴⁴ OSCE participating States committed in the Vienna Document to notify each other of military activities of a certain size or type, with some subject to external observation. Meanwhile, the United States and China have a 2014 MOU on the notification of major military activities.¹⁴⁵

The United States, the Russian Federation, and China could bolster notification procedures in the service of de-escalation in many ways.

¹⁴⁰ B.S. Glaser, “Obama–Xi Summit Produces Landmark Deal to Reduce Dangerous Military Encounters”, The Interpreter, Lowly Institute, 29 September 2015, <https://www.lowlyinstitute.org/the-interpreter/obama-xi-summit-produces-landmark-deal-reduce-dangerous-military-encounters>.

¹⁴¹ “Russia, UK to Update Agreement on Prevention of Incidents at Sea”, TASS Russian News Agency, 14 August 2017, <https://tass.com/politics/960250>; and S. Lain and A. Korunov, “Defining Dialogue: How to Manage Russia–UK Security Relations”, Royal United Services Institute–Russian International Affairs Council Russia–United Kingdom Track II Bilateral Report, March 2017, <https://rusi.org/publication/conference-reports/defining-dialogue-how-manage-russia-uk-security-relations>.

¹⁴² L. Kulesa, T. Frear and D. Raynova, “Managing Hazardous Incidents in the Euro-Atlantic Area: A New Plan of Action”, Policy brief, European Leadership Network, November 2016, <https://www.europeanleadershipnetwork.org/policy-brief/managing-hazardous-incidents-in-the-euro-atlantic-area-a-new-plan-of-action/>.

¹⁴³ Memorandum of Understanding Between the Department of Defense of the United States of America and the Ministry of National Defense of the People’s Republic of China Regarding the Rules of Behavior for Safety of Air and Maritime Encounters, signed 9 and 10 November 2014, https://archive.defense.gov/pubs/141112_MemorandumOfUnderstandingRegardingRules.pdf, Section V.

¹⁴⁴ V. Isachenkov, “Russia Follows US in Withdrawal from Open Skies Treaty”, AP News, 15 January 2021, <https://apnews.com/article/russia-leaves-open-skies-treaty-e58019b80ae95e12007265aedfac229b>.

¹⁴⁵ Memorandum of Understanding Between the United States of America Department of Defense and the People’s Republic of China Ministry of National Defense on Notification of Major Military Activities Confidence-Building Measures Mechanism, signed 31 October and 4 November 2014, https://dod.defense.gov/Portals/1/Documents/pubs/141112_MemorandumOfUnderstandingOnNotification.pdf

For the United States and the Russian Federation, this would include a return to the Open Skies Treaty. Flights over Ukraine (at its invitation) in 2014 provided information about military activities on the Russian-Ukrainian border, providing valuable transparency towards de-escalation in the eyes of some.¹⁴⁶ Elsewhere, some OSCE participating States have accused the Russian Federation of “selective implementation” of the Vienna Document.¹⁴⁷ Arguably, the larger issue is that the Document could be revisited and amended to reflect operational changes over the past decade. This would include solidifying its Section 3 on Risk Reduction, which encompasses a rarely invoked mechanism for consultation and voluntary hosting of visits to dispel concerns. In addition, the Document’s notification procedures do not cover tests of combat readiness in which troops themselves are not provided with advance notice (“snap” exercises), or smaller-scale parallel deployments under separate commands that may be part of a broader encompassing exercise.¹⁴⁸ States may also want to lowering the thresholds for notification (currently for activities involving at least 9,000 troops) given the expanding number of smaller exercises, or increase the modest obligation of three inspections a year within the zone of application.¹⁴⁹ They may also look to reassess other substantive aspects of notification and to expand reporting or inspection around

exercises that take place in sensitive areas, that involve nuclear-capable equipment, or that include live fire.¹⁵⁰

For the China-United States relationship, the tune is familiar: the two sides could look to build on their foundation of MOUs and explore the viability of politically or legally binding agreements in the area of notification. The MOU on major military exercises already calls for annual consultation on improvements, providing a venue to discuss further institutionalization. Yet the document itself is focused on the notification of national security-related policy and strategy developments, rather than of exercises themselves, and the mechanism for observation of military exercises outlined in Annex II is entirely voluntary. It does cite as one of its goals to “Gradually expand and increase over time the quality and quantity of reciprocal observation of military exercises”.¹⁵¹ Accordingly, some in China have posited that a logical next step could be to outline precise notification procedures pertaining to major military exercises as well as weaponry tests of certain kinds.¹⁵² Improving military-to-military contacts through this and other venues could present feasible steps forward given China’s expressed reluctance to engage in formal arms control negotiations with the United States and the Russian Federation.¹⁵³

- 146 A. Rowberry, “The Vienna Document, the Open Skies Treaty and the Ukraine Crisis”, Brookings Institution, 10 April 2014, <https://www.brookings.edu/blog/up-front/2014/04/10/the-vienna-document-the-open-skies-treaty-and-the-ukraine-crisis/>.
- 147 E. Kraleva, Permanent Representative of Bulgaria, “Joint Statement on Euro-Atlantic Security”, 26th OSCE Ministerial Council, Closing Plenary Session, 6 December 2019, <https://osce.usmission.gov/joint-statement-on-euro-atlantic-security/>.
- 148 J. Engvall, OSCE and Military Confidence-Building in Conflicts: Lessons from Georgia and Ukraine, Swedish Defense Research Agency (FOI), March 2019, <https://www.foi.se/rest-api/report/FOI-R--4750--SE>.
- 149 Vienna Document 2011 on Confidence- and Security-Building Measures, Organization for Security and Co-operation in Europe, FSC.DOC/1/11, 30 November 2011, <https://www.osce.org/files/f/documents/a/4/86597.pdf>.
- 150 For more on revisiting the Vienna Document, see L. Kulesa, “Towards a New Equilibrium: Minimising the Risks of NATO and Russia’s New Military Postures”, Policy brief, European Leadership Network, February 2016, <https://www.europeanleadershipnetwork.org/wp-content/uploads/2017/10/Towards-a-New-Equilibrium-2016.pdf>; and S. Charap et al., A New Approach to Conventional Arms Control in Europe: Addressing the Security Challenges of the 21st Century, RAND Corporation, 2020, https://www.rand.org/pubs/research_reports/RR4346.html.
- 151 Memorandum of Understanding Between the United States of America Department of Defense and the People’s Republic of China Ministry of National Defense on Notification of Major Military Activities Confidence-Building Measures Mechanism, signed 31 October and 4 November 2014, https://dod.defense.gov/Portals/1/Documents/pubs/141112_MemorandumOfUnderstandingOnNotification.pdf, Annex II, Section III(i).
- 152 Y. Yao, “Building a New Type of U.S.-China Military-to-Military Relationship”, National Bureau of Asian Research, 18 September 2015, <https://www.nbr.org/publication/building-a-new-type-of-u-s-china-military-to-military-relationship/>.
- 153 Ministry of Foreign Affairs of the People’s Republic of China, “Geng Shuang: Asking China to Participate in the ‘Trilateral Arms Control Negotiation’ is Unfair, Unreasonable, and Infeasible”, 12 October 2020, https://www.fmprc.gov.cn/mfa_eng/wjb_663304/zwjg_665342/zwbdt_665378/t1823444.shtml.

4.3.3. Enhance exchange around launches

In addition to general notification on military exercises, frameworks specifically on the pre-notification of launch activity exist. The United States and the Russian Federation have a bilateral agreement on ballistic missile launch notification; they also have an extension notification system and exchange telemetric data on up to five launches each under New START. Both the United States and Russia have also subscribed to the Hague Code of Conduct against Ballistic Missile Proliferation (HCOG), which includes a pre-launch notification mechanism. Meanwhile, the 2020 extension by China and the Russian Federation of their 2009 agreement on launch notification of ballistic missiles and space rockets presents another foundation for follow-on action.

States may want to expand the scope of existing notification agreements by extending pre-launch notification times, increasing the ranges of missiles encompassed by the regime, or removing allowances. For instance, the China-Russian Federation agreement extends only to missiles with ranges of more than 2,000 km and permits withholding of ballistic missile launch information in up to two “exceptional cases” a year.¹⁵⁴ The New START system – covering ranges of more than 500 km, with notification of basing locations, missile status changes, and strategic exercises – could provide a means of expansion. In addition, States may also explore the possibility of including non-ballistic missile launches under their purview. Cruise missile launches and deployments fall outside the scope of existing agreements; this is problematic given the challenges that they pose to decision makers

by virtue of their ambiguous nature, shorter flight times, and more frequent use.¹⁵⁵ Some have suggested an increase in information exchanged about flights of hypersonic glide vehicles as well given their destabilizing effects.¹⁵⁶

For the United States and the Russian Federation, additional information exchange could pivot on their Nuclear Risk Reduction Centers or revitalize development of the long-proposed Joint Data Exchange Center. Chinese domestic structures involved in the 2009 agreement with the Russian Federation could also be linked to the US National and Nuclear Risk Reduction Center. Others have called for a multilateral missile test pre-notification regime that harmonizes and builds on existing bilateral agreements, including the one between India and Pakistan, or formalizes political commitments, as with pre-notifications in the HCOG (notably, China is not among its subscribing States).¹⁵⁷ While engagement with non-NPT nuclear-armed States presents a unique set of challenges, there could also be value in a trilateral regime between the United States, the Russian Federation, and China, including from a normative standpoint;¹⁵⁸ or a bilateral agreement between the United States and China. This is in part due to the use of ballistic missiles in Chinese military exercises in the East and South China Seas – an agreement would help both address the possibility of misinterpretation and bridge the gap in strategic perceptions.¹⁵⁹

Military activities in areas of strategic importance to the United States, the Russian Federation, and China – areas in which

¹⁵⁴ Translated in P. Podvig, “Russia and China to Exchange Launch Notifications”, Russian Strategic Nuclear Forces, 21 October 2010, http://russianforces.org/blog/2010/10/russia_and_china_to_exchange_launch_notifications/.

¹⁵⁵ A. Weber and C. Parthemore, “Cruise Control: The Logical Next Step in Nuclear Arms Control?”, Journal for Peace and Nuclear Disarmament, vol. 2, no. 2, 2019, <https://doi.org/10.1080/25751654.2019.1681886>.

¹⁵⁶ J. Borrie, A. Dowler and P. Podvig, Hypersonic Weapons: A Challenge and Opportunity for Strategic Arms Control, United Nations Office for Disarmament Affairs and UNIDIR, <https://doi.org/10.37559/WMD/19/hypson1>.

¹⁵⁷ F. O'Donnell, “Managing Nuclear Multipolarity: A Multilateral Missile Test Pre-Notification Agreement”, Washington Quarterly, vol. 43, no. 3, 2020, <https://doi.org/10.1080/0163660X.2020.1810419>.

¹⁵⁸ J.M. Acton, T. MacDonald and P. Vaddi, Revamping Nuclear Arms Control: Five Near-Term Proposals, Carnegie Endowment for International Peace, 2020, <https://carnegieendowment.org/2020/12/14/revamping-nuclear-arms-control-five-near-term-proposals-pub-83429>.

¹⁵⁹ P. Vaddi, “How Biden can Advance Nuclear Arms Control and Stability with Russia and China”, Bulletin of the Atomic Scientists, vol. 77, no. 1, 2021, <https://doi.org/10.1080/00963402.2020.1859862>.

dissonance over escalation strategies could have disastrous consequences – constitute a critical target for risk-reduction activities. Collaborative action in these areas cannot only prevent crises from spiralling, but they can foster the trust and confidence necessary to drive movement in the longer-term. Indeed, just as risk drivers have interactive effects, so too do risk-reduction activities. Only by moving forward on multiple levels and in multiple spheres are the three States likely to reach the point of tackling capabilities of concern – whether in clarification, behavioural norms, or verifiable limitations and reductions. In this manner, the risk-reduction endeavour could constitute the building blocks of the revitalization of arms control and disarmament processes.¹⁶⁰ It might also represent the way in which States may fundamentally reconsider the role of nuclear weapons in their security strategies.

160 For more ideas to this end, see L.A. Dunn, *Reversing the Slide: Intensified Great Power Competition and the Breakdown of the Arms Control Endeavour*, UNIDIR, 2019, <https://www.unidir.org/files/publications/pdfs/reversing-the-slide-en-755.pdf>.

5. CONCLUSION

There is a striking lack of common understanding around nuclear escalation strategies among the United States, the Russian Federation, and China. There are myriad factors driving this dissonance. They include the ambiguity – deliberate or otherwise – in the text of nuclear doctrines themselves, as well as perceived inconsistencies between stated doctrines and postures. Broadly, they reflect the nature of geopolitical tensions: between the United States and the Russian Federation, and between the United States and China. The fact that each nuclear weapon State regards the other as a strategic competitor or adversary colours its interpretations of national security strategies and nuclear doctrines, and casts doubt as to the “true” intentions held by the other. These dynamics are in place and unlikely to change significantly in the short term, even if each State espouses a desire in the abstract to improve its relations with the other. In the meantime, the “friction points” between them – the behaviours and strategies of concern – that in effect represent escalatory use drivers, are unfortunately numerous.

One State’s fears about the willingness of another to use nuclear weapons in an intentionally escalatory manner and in a wide range of circumstance seeps into perceptions of the specific capabilities of the other. Each State regards individual systems with suspicion, casting aside the other’s proclamations of their intended and defensive deterrent roles. Instead, the continued development and deployment of these systems by the other only seems to

confirm its aggressive strategic manoeuvring, and in some cases seems to suggest a greater willingness to employ nuclear weapons in combat. The prominence of these systems in contexts with immense strategic value or a history of tension is especially concerning; the possibility for inadvertent escalation linked to these perceptions and projections of intent cannot be lightly held. In the longer term, these perceptions and projections threaten to perpetuate technology and arms racing dynamics that may inflame future crises.

To reduce the risk of nuclear weapon use and end this cycle, the three powers will have to take decisive action. Constructive strategic dialogue and engagement can help bridge the perception gap. Increasing transparency and limiting the range of behaviours pertaining to specific capabilities can chip away at concerns about their role. In the meantime, updating conflict-prevention and -management tools to fit contemporary realities in specific geographic contexts can help to release tension, especially during times of crisis. Similarly, bolstering notification procedures around military activities can create greater mutual awareness and understanding of them and lessen their impact. All this can help to foster more trust and confidence, including towards the service of arms control and disarmament. This is the blueprint for the United States, the Russian Federation, and China to narrow the terms of escalation in their doctrines and strategies and to ensure that nuclear escalation scenarios remain purely hypothetical.

NUCLEAR ESCALATION STRATEGIES AND PERCEPTIONS: THE UNITED STATES, THE RUSSIAN FEDERATION, AND CHINA

This study is the first in a series that profiles different “friction points” among nuclear-armed and nuclear-allied States, examining issues of contention in their relations that can spark potential conflict and nuclear escalation. It considers the multipolar dynamics between the United States, the Russian Federation, and China, and examines how fundamental mistrust among the three filters into their readings of each other’s nuclear strategies, with the potential to have an impact on escalatory risk scenarios. It then outlines a series of recommendations for the ‘great powers’ to bridge strategic perception gaps and reduce relevant risks. Part of UNIDIR’s ongoing research on nuclear risk reduction, this study is intended to feed into the dialogue on taking forward risk reduction – and on the development of practical and feasible baskets of measures that can close pathways to use of nuclear weapons.

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