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## Breaking the Silo

### EXAMINING INTERNATIONAL SECURITY AT THE NUCLEAR NEXUS

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Traditionally, U.S. nuclear policy has enjoyed a largely siloed existence—an elite community of expertise both within and outside of government; focused government organizational structures including a combatant command devoted to U.S. nuclear capabilities, plans, and personnel; and, at least for the last four administrations, an independent and fairly insulated national policy review process referred to as the Nuclear Posture Review.

This relative autonomy has allowed nuclear policy—including nuclear force posture, declaratory policy, launch authority, and arms control—to develop largely outside of the give and take of other major policy development processes. Today, however, current and emerging challenges related to nuclear weapons cut across a range of strategic issues from cyberspace to outer space. Concurrently, under a growing nuclear shadow, perceived firewalls between capabilities, plans, and organizations for conventional war and those dedicated to nuclear deterrence are eroding, leaving policymakers to grapple with the concept of conventional-nuclear integration.

More than ever, many of the most significant and vexing strategic national security challenges lie at the nexus of these complex issues, domains, and risks—defying traditional analytical and organizational stovepipes and forcing experts in each of these respective areas to move beyond their comfort zones. The *International Security at the Nuclear Nexus* article series was created to galvanize cross-pollination between the study of nuclear issues and other international security subject areas by exploring these points of intersection.

Understanding international security issues at the “nuclear nexus” is critical for managing a contemporary security environment characterized by rapid technological innovation, increased strategic competition, and a looming nuclear shadow. For example:

- Space is becoming increasingly congested and contested,<sup>1</sup> and space-based assets are at once central to effectively prosecuting a conventional war while serving as the backbone of U.S. nuclear command, control, and communications (NC3). In fact, the United States relies on many of the same space-based systems to obtain important situational awareness (SA) and reconnaissance capability as it does for early missile warning and for tracking strategic forces.<sup>2</sup>
- Artificial intelligence capabilities combined with advanced sensors and improved big data management have dramatically enhanced the speed, precision, and persistence of surveillance, monitoring, and detection capabilities—posing new and potentially escalatory risks in crises involving nuclear-armed states.<sup>3</sup>
- Gray zone capabilities (cyber, counter space, disinformation) can threaten strategic interests even as the attacks themselves are technically sub-conventional, presenting new risks of rapid and unpredictable escalation. The increasing use of hybrid warfare tactics—efforts to achieve strategic objectives without using significant force—may reflect a belief by Russia and China that they can threaten strategic U.S. interests through cyber, counter-space, and influence operations, with a lower risk of provoking an escalatory response.<sup>4</sup>
- Conventional arms are also more capable of playing a strategic role and accomplishing missions once reserved solely for nuclear weapons—namely, targeting nuclear weapons, especially when paired with

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Banner Image: A common hypersonic glide body (C-HGB) launches from Pacific Missile Range Facility during a Defense Department flight experiment, Kauai, Hawaii, March 19, 2020. Credit: Oscar Sosa, U.S. Navy.

<sup>1</sup> Todd Harrison et al., “The Evolution of Space as a Contested Domain,” *Space News*, October 9, 2017, [https://aerospace.csis.org/wp-content/uploads/2018/01/Harrison\\_SpaceNews.pdf](https://aerospace.csis.org/wp-content/uploads/2018/01/Harrison_SpaceNews.pdf).

<sup>2</sup> James M. Acton, “Escalation through Entanglement: How the Vulnerability of Command-and-Control Systems Raises the Risks of an Inadvertent Nuclear War,” *International Security* 43, no. 1 (August 2018): 56–99, [https://doi.org/10.1162/isec\\_a\\_00320](https://doi.org/10.1162/isec_a_00320).

<sup>3</sup> Rebecca Hersman et al., *Under the Nuclear Shadow: Situational Awareness Technology and Crisis Decisionmaking* (Washington DC/Lanham, MD: CSIS and Rowman & Littlefield, 2020), <https://www.csis.org/analysis/under-nuclear-shadow-situational-awareness-technology-and-crisis-decisionmaking>.

<sup>4</sup> Jim Garamone, “Military Must Be Ready to Confront Hybrid Threats, Intel Official Says,” U.S. Department of Defense, September 4, 2019, <https://www.defense.gov/Explore/News/Article/Article/1952023/military-must-be-ready-to-confront-hybrid-threats-intelligence-official-says/>; Rebecca Hersman, “Wormhole Escalation in the New Nuclear Age,” *Texas National Security Review* 3, no. 3 (July 2020), <https://tnsr.org/2020/07/wormhole-escalation-in-the-new-nuclear-age/>.

increasingly precise targeting capabilities.<sup>5</sup> Hypersonic missiles and programs such as the U.S. Conventional Prompt Global Strike will further compress decision-making timelines in a crisis, and as the line between strategic and conventional forces blurs, the implications for deterrence and stability are unclear.<sup>6</sup>

- Divisions between geographic combatant commanders tasked with prosecuting a conventional conflict and U.S. Strategic Command, which would have the lead for any nuclear operations, raise questions about how crises between nuclear armed adversaries can and should be managed. In a security environment where strategic challenges involving space, cyber, artificial intelligence, or influence operations intersect with nuclear issues, organizational stovepipes may be intensifying risks for shared missions.
- The nuclear enterprise's current cycle of modernization will require the defense acquisition system—which is undergoing its own transformation—to exercise discipline in executing its requirements and to deliver new nuclear capabilities reliably, on budget, and on time.<sup>7</sup>
- Civil-military relations in the United States also appear to be changing.<sup>8</sup> In the throes of exacerbated tensions, questions of civilian control of nuclear weapons and launch authority may merit revisiting.<sup>9</sup>

To date, the siloed nature of the nuclear community has limited examination of these crosscutting issues and prevented the cross-pollination of expertise across communities. Today, the greatest risk of nuclear escalation



Gen. John E. Hyten, left, former commander of U.S. Strategic Command and Air Force Chief Master Sgt. Patrick F. McMahon speak at the Air Force Association's Air, Space and Cyber Command on multidomain operations in 2018.

Source: U.S. Air Force

comes not through a bolt from the blue barrage of inbound nuclear-tipped ICBMs tracked on a series of globally, connected radar-based nuclear warning systems, but rather from unmanaged or miscalculated escalation resulting from conventional, or even sub-conventional, conflict between nuclear powers. In this environment, the failure to plan, exercise, and train across nuclear and conventional capabilities in an integrated way may introduce more escalatory risks than de-escalatory firewalls.

Thus, it is increasingly important to reevaluate if the institutional structures and divisions of the past are still valuable today and to work toward greater engagement between the nuclear and non-nuclear

<sup>5</sup> Christopher P. Twomey, "Asia's Complex Strategic Environment: Nuclear Multipolarity and Other Dangers," *Asia Policy* 11, no. 1 (2011): 51–78, <https://doi.org/10.1353/asp.2011.0006>.

<sup>6</sup> "Conventional Prompt Global Strike and Long-Range Ballistic Missiles: Background and Issues" (Washington DC: Congressional Research Service, February 14, 2020), <https://fas.org/sgp/crs/nuke/R41464.pdf>.

<sup>7</sup> Andrew Hunter, "The Cycles of Defense Acquisition Reform and What Comes Next," *Texas A&M Journal of Property Law*, Defense Symposium Edition 5, no. 1 (2018), <https://scholarship.law.tamu.edu/journal-of-property-law/vol5/iss1/3/>.

<sup>8</sup> Jim Golby, "Biden vs Trump: An Australian Guide to the Issues - United States Studies Centre," Biden vs Trump: An Australian guide to the issues - United States Studies Centre, August 12, 2020, <https://www.usssc.edu.au/analysis/biden-vs-trump-an-australian-guide-to-the-issues>.

<sup>9</sup> Jeffrey Goldberg, "Trump: Americans Who Died in War Are 'Losers' and 'Suckers'," *The Atlantic* (Atlantic Media Company, September 3, 2020), <https://www.theatlantic.com/politics/archive/2020/09/trump-americans-who-died-at-war-are-losers-and-suckers/615997/>; Peter D. Feaver, "Command and Control in Emerging Nuclear Nations." *International Security* 17, No. 3 (Winter, 1992-1993): 160–187

communities. Pooling expertise in a collaborative approach is necessary to address current and future strategic security challenges in the international environment. For example:

- What approaches—between arms control and development of offensive and defensive capabilities—can the United States take to protect its nuclear-critical assets if a conflict begins in, or spills over into, space?
- How has the situational awareness ecosystem evolved, and what are the potential benefits and risks of new capabilities to effective escalation management under a nuclear shadow?
- How will the increasing vulnerability of strategic forces and forward-deployed systems, compressed decisionmaking timelines, and further blurring of strategic and conventional forces impact traditional thinking on deterrence and stability?
- How will the integration of artificial intelligence and machine learning into conventional and nuclear command, control, and communications impact crisis management and stability?
- As strategic interests continue to grow in cyber and outer space, how should the United States act to deter and defend against attacks in these areas while managing catastrophic escalation risks?
- As civil-military relations in the United States evolve, how do military responsibilities to plan and prosecute war across the spectrum of conflict interact with civilian control of nuclear weapons and sole presidential launch authority, especially in highly escalatory scenarios with significant strategic effects?<sup>10</sup>
- What are the likely implications of the current cycle of acquisition reform on nuclear modernization broadly, and on the nuclear command, control, and communications system in particular? To what extent can, or should, nuclear modernization programs function independently of other conventional programs and processes? How can the defense acquisition system balance speed-oriented approaches with the necessity to keep NC3 invulnerable to outside interference?

This article series aims to address these questions and others and to work toward greater engagement between the nuclear and non-nuclear defense policy communities. Doing so will enable engagement of nuclear issues by the broader defense and national security community, while also bringing valuable and diverse subject matter expertise into analysis of issues relevant to the nuclear community. Through this collaboration between nuclear and non-nuclear experts, the articles in this series offer fresh perspectives, novel insights, and policy recommendations.

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<sup>10</sup> Ibid.

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