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STRATEGY AND NUCLEAR-CONVENTIONAL INTEGRATION

FOR THE UNITED STRATES NAVY

by

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This study sits at the nexus of a central challenge facing the United States Navy in the 21st century: what roles do sea-based conventional and/or nuclear weapons have in a multi-domain war against nuclear-armed adversaries? This study addresses these questions by drawing upon the security studies and international relations literature that addresses the issues of deterrence, conflict escalation, coercive political strategies, and arms races. The research team uses this literature as a baseline to analyze the Navy's problem set in posturing itself across the domain.

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SECTION I: INTRODUCTION

The Navy today confronts a new era of potential war on the high seas against two-nuclear armed adversaries: Russia and the People's Republic of China. Russia is threatening to use nuclear weapons in its war against Ukraine—one of the theaters of which includes the Black Sea. The war in Ukraine also has focused attention on potential war in additional maritime domains such as the Baltic, North Sea, and the Atlantic Ocean. For its part, China has been engaged in a series of operations across the Indo-Pacific maritime domain, with a particular focus on Taiwan, designed to create a coercive political environment favorable to the PRC. The People's Liberation Army-Navy has been at the forefront of these operations. Both states have theories of victory in war that includes the use of nuclear weapons below the level of a full strategic exchange.[1] It is unclear that the United States is prepared for such a scenario.[2] As noted by Greg Giles: "Limited nuclear use in a regional conflict could look attractive to an adversary, in part, because the U.S. military has left itself vulnerable to it."[3]

The Navy thus confronts the prospect of maritime conflict in these and other theaters that could include nuclear weapons.[4] It must therefore urgently address how and under what circumstances it will integrate conventional and nuclear weapons across the full spectrum of conflict, ranging from non-kinetic, gray zone–type encounters all the way up the escalatory chain to a strategic nuclear exchange. While the surface fleet no longer carries nuclear weapons, it must still remain prepared to operate in a nuclear environment in which its conventional weapons will be used. It still remains convenient for the Navy (and the other services) conceptualize warfare in discrete areas: conventional, chemical, biological, cyber, and nuclear – although much work is underway across the Joint Staff and the Military Departments to develop operational concepts surrounding the idea of multi-domain war. What role(s) will the Navy play in the multi-domain war? This project addresses the Navy's challenges in developing a coherent conceptual framework that recognizes the linkages between all these domains of warfare, with particular emphasis on nuclear and conventional weapons.

Traditional operational, tactical, and intellectual divisions between different domains of warfare have been all but eliminated in the modern era. It is increasingly apparent that war has been and is being waged in many different domains simultaneously: kinetic conventional operations on land and sea and in the air, information operations across communications domains, cyber operations (both defensive and offensive) that affect military and non-military targets, and space

[1] As observed by Brad Roberts, Transcript of "Nuclear Weapons in the 21st Century," Remarks delivered on June 28, 2016, Carnegie Endowment for International Peace. For more on Russian nuclear doctrine see Michael Kofman, Anya Fink, Jeffrey Edmonds, *Russian Strategy for Escalation Management* (Alexandria, VA: Center for Naval Analyses, April 2020)

[2] As argued by Al Mauroni, "Tearing Down the Nuclear Firewall," *War on the Rocks*, October 15, 2019.

[3] Gregory Giles, "Conventional-Nuclear Integration: Avoiding Misconceptions and Mistakes," *War on the Rocks*, August 10, 2021.

[4] For example, the Marine Corps has started training with Sweden to assist in the protection of uninhabited islands in the Baltic. See Helene Cooper, "Back in the Fight," *New York Times*, October 4, 2022.

operations that reach across all domains. Nuclear weapons are certainly part of this framework, acting as the ultimate "guarantor" of escalation dominance to states with these weapons. Within these domains, however, there has always been a kind of "firewall" between using nuclear and conventional weapons in war, with nuclear weapons thought of as discrete weapons with discrete (and strategic) capabilities that would only be employed in the most serious of all circumstances.

That said, this "firewall" between nuclear and conventional weapons conceptually and operationally always has remained somewhat tenuous – particularly (as previously noted) as adversaries clearly have adopted limited nuclear use doctrines. Moreover, as conventional weapons have become ever-more accurate over increased ranges, many observers have pointed to the reality that conventional weapons can today function in a strategic context by holding at risk certain targets that in the past were reserved for nuclear weapons. In the modern era the increased types and numbers weapons at the disposal political and military leaders across all warfare domains has further diminished the distinctions between strategic and non-strategic targets. For example, in the ongoing war in Ukraine, Russia has embarked upon a conventional standoff targeting campaign against Ukraine's infrastructure, using cruise missiles and drones to strike power plants and water supplies.

In an earlier era nuclear weapons consciously were seen as having tactical, battlefield relevance on land and at sea (discussed in more detail in section 3). During the Cold War, the Western alliance envisioned nuclear weapons as part of an "escalation ladder" that would deter the Soviet Union from invading Western Europe and, in the event of war, would allow the West to prevail using nuclear weapons at all warfare levels if necessary. As part of this approach, in the 1960s, 1970s, and 1980s, the United States deployed a family of tactical nuclear weapons to Europe, which included nuclear artillery shells, mines, mortar rounds, short- and intermediate-range missiles, as well as aerial-delivered bombs. These weapons were buttressed in the mid-1980s with medium-range ballistic- and cruise missiles based in Europe. The United States implicitly guaranteed that its strategic nuclear arsenal formed an instrumental part of the range of nuclear capabilities to deter Soviet aggression. The modern-day emphasis on "integrated deterrence" certainly draws this earlier conceptual framework (covered in Section III).

The Navy's role in this history is of central importance and can be drawn upon to glean insights to the multi-domain war of the modern era. During the Cold War, it routinely deployed thousands of nuclear weapons at sea, ranging from tactical to strategic weapons (in the case of submarine-launched ballistic missiles). Like the other services, the Navy participated in the fielding and deployment of these weapons to its operational components – aircraft carriers and other ships. However, these practices and the corresponding weapons were gradually retired at the end of the Cold War when President Bush ordered the Navy's nuclear weapons returned to shore-based installations. With the removal of these weapons from the deployed fleet, the Navy's main contribution to the nations' nuclear posture rested (and continues to rest with) with the Submarine Launched Ballistic Missile force deployed on Ohio-class submarines, which, of course, have

tremendous strategic implications and are not only effective but also extremely destructive.

The global strategic landscape has changed since the end of the Cold War, and the Navy's conception of the role played by nuclear and conventional weapons and the multi-domain must be rethought. US adversaries have integrated nuclear weapons into their regional and theater warfighting strategies. The Navy must be prepared to confront adversaries like North Korea, China, and Russia, which have developed nuclear arsenals that can be used across the tactical, operational, and strategic levels of war. New operating concepts must be developed and, if necessary, new weapons must be sent back to sea to confront adversaries that boast arsenals with advanced conventional and nuclear capabilities.

This study sits at the nexus of a central challenge facing the United States Navy in the 21st century: what roles do sea-based conventional and/or nuclear weapons have in a multi-domain war against nuclear-armed adversaries? The Navy N3/N5 organization requires answers to the following important questions that are addressed in this report:

1. How can the Navy best posture itself to integrate nuclear and conventional weapons across the different domains of war?
2. Does the Navy need a different mix of nuclear and conventional weapons to preserve and strengthen integrated deterrence?
3. What kinds of operating concepts does the Navy need to develop appropriate relationship between conventional and nuclear weapons in the as it operationalizes integrated deterrence in its current and future force structure?

This study addresses these questions by drawing upon the security studies and international relations literature that addresses the issues of deterrence, conflict escalation, coercive political strategies, and arms races. The research team uses this literature as a baseline to analyze the Navy's problem set in posturing itself across the domain. It then makes recommendations about steps that the Navy should take to address the strategic environment with respect to the integration of conventional and nuclear weapons.

A central conclusion of this analysis is that the Navy needs to relearn some of the lessons from the Cold War, when it integrated conventional and nuclear weapons into its operational planning and linked its force structure with ideas of wartime escalation management and nuclear deterrence. This study confirms that the Navy needs to re-acquaint itself with Cold War–era approaches such as:

(1) the appropriate mix of nuclear and conventional weapons carried aboard its current and future platforms;

(2) developing plans to integrate its systems for cross-domain operations that reflect the requirements of the "all domain" war that links conventional and nuclear weapons.

The literature on deterrence and nuclear weapons and their role in national security strategy provides a good starting point for the Navy to develop a conceptual framework to apply naval power in this complex strategic environment. education of the mid- and senior-level leaders facing these challenges. This conceptual framework can form the basis for exercises and experiments to explore the ideas as applied in different regional scenarios.

SECTION II: LITERATURE REVIEW

Introduction

Regrettably (but not surprisingly), nuclear weapons remain a prominent feature of the international system 77 years after the United States used these weapons against Japan at the close of World War II. Following Russia's invasion of Ukraine in February 2022, Russian leader Vladimir Putin has repeatedly threatened to use nuclear weapons at various points of the war. Putin is not alone in his assessment that nuclear weapons have political and military utility in war and the political circumstances that surround it. While not explicitly endorsing the idea of tactical battlefield use, the Biden Administration strongly believes that nuclear weapons underpin international security and, further, that these weapons are inextricably intertwined with conventional weapons in structure of deterrence.[5] As noted in the Biden Administration's *2022 Nuclear Posture Review*:

> "U.S. nuclear weapons deter aggression, assure allies and partners, and allow us to achieve Presidential objectives if deterrence fails. In a dynamic security environment, a safe, secure, and effective nuclear deterrent is foundational to broader U.S. defense strategy and the extended deterrence commitments we have made to allies and partners. Security architectures in the Euro- Atlantic and Indo-Pacific regions are a critical U.S. strategic advantage over those governments that challenge the rules-based international order. These regional security architectures are a key pillar of the NDS; this NPR underscores the linkage between the conventional and nuclear elements of collective deterrence and defense."[6]

Importantly, however, it's not just that the United States continues to believe in the value of its nuclear and conventional arsenals. It also remains committed to the idea that these weapons have political utility by creating a political framework of deterrence affecting both friends and enemies alike. What is deterrence, exactly? In their landmark book *Deterrence in American Foreign Policy: Theory and Practice*, Alexander George and Richard Smoke offered up the general proposition that remains valid: "In its most general form, deterrence is simply the persuasion of one's opponent that the costs and/or risks of a given course of action he might take outweigh the benefits." [7] Hence, the objective of deterrence is to shape the decision making of a particular state to reduce the incentives for that state to act, and/or use force to achieve political objectives. The end result of deterrence is that no or very limited actions are taken—most particularly the use of force.

The concept of deterrence has been a centerpiece of U.S. strategy and defense policy in the post-World War II era that gathered momentum with the advent and spread of nuclear weapons.[8] As an intellectual construct, the intuitive appeal of deterrence was and remains obvious, particularly as the nuclear states operationalized the capacity to

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[5] Kris Osborn, "Pentagon's Integrated Deterrence Draws Upon Conventional and Nuclear Strategies," *The National Interest*, October 26, 2021

[6] *2022 Nuclear Posture Review* (The White House, Washington, DC 2022) p.1.

[7] Alexander L. George and Richard Smoke, *Deterrence in American Foreign Policy: Theory and Practice* (New York: Columbia University Press, 1974) p. 1.

[8] As chronicled in Bernard Brodie, *Strategy in the Missile Age* (Princeton, NJ, Princeton University Press, 1959).

build and field thermonuclear fusion weapons—the use of which would have ensured destruction on scale that could scarcely be imagined. After all, what state would seek to start such a war, the costs of which could entail the destruction of significant portions of humanity, including the state that initiated the war?

As noted by George and Smoke, navies have historically played a strong role in deterrent strategies in which the deployment of naval forces to trouble spots became a ritualized response to a crisis in which the size of the squadron/force deployed to the trouble spot became regarded as an index of the commitment of the deploying power.[9] Thus, naval deployments became instrumental in the political signaling process upon which deterrence also rests, since the actors involved in the deterrence bargaining framework must also perceive that the threat to act is credible.[10]

Scholars subsequently modified these basic concepts of deterrence, segregating deterrence strategies into two approaches: (1) deterrence by denial; (2) deterrence by punishment. Deterrence by denial seeks to make it extremely difficult if not impossible for a foe to achieve their objectives through the use of force. The foe, in this case, would thus perceive that the costs of action would be too high to justify the use of force. Deterrence by punishment threatens a foe with a series of potential consequences across a wide spectrum of military and political actions that can include escalation to nuclear weapons, political steps such as sanctions, and other political steps to raise the costs of action to a foe contemplating using force.[11]

Other strands of the deterrence literature address adversary calculations in circumstances short of nuclear war. Indeed, there is rich literature on conventional deterrence,[12] which is a closely related companion to the nuclear deterrence literature. In the post-Cold-War era, scholars created yet another strand of this literature called cross domain deterrence that applied deterrence concepts to changed strategic and military circumstances. In the modern era, advanced militaries conceptualize military operations across various domains: land, space, cyber, maritime surface and subsurface, and in the skies. These operations, it is thought, potentially blur the Cold War-era distinctions between the levels of war: strategic, operational, and tactical that once were defined at the strategic level by nuclear weapons.[13] Added to this mix must be digitized and proliferating weapons technologies that have increased accuracy and destructive power

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[9] George and Smoke, *Deterrence in American Foreign Policy*.

[10] Ibid.

[11] Summaries drawn from Michael Mazar, "Understanding Deterrence," *Perspective Series* (Rand Corp: Santa Monica, CA: 2018). Also see Glenn H. Snyder, *Deterrence by Denial and Punishment* (Princeton, NJ, Center of International Studies, January 1959)

[12] John Mearsheimer, *Conventional Deterrence* (Ithaca, NY: Cornell University Press, 1983). Also see James J. Wirtz, "How Does Nuclear Deterrence Differ from Conventional Deterrence," *Strategic Studies Quarterly* 12, no. 4 (Winter 2018): 58–75, http://hdl.handle.net/10945/60757.

[13] As observed by

that can be delivered at ever greater distances. A fundamental idea in this literature is that it is possible to affect adversary behavior by threatening action in one domain to deter potential use by an adversary in another domain.[14]

A perusal of speeches by senior officials as well as recent documents released by the Biden Administration emphasizes that deterrence is back as a United States (and U.S. Navy) strategic priority – referred to in the current form as something called "integrated deterrence." According to U.S. Defense Secretary Lloyd Austin: "…integrated deterrence means using every military and non-military tool in our toolbox, in lock-step with our allies and partners. Integrated deterrence is about using existing capabilities, and building new ones, and deploying them all in new and networked ways… all tailored to a region's security landscape, and in growing partnership with our friends."[15] In separate remarks, Undersecretary of Defense (Policy) Colin Kahl, has emphasized the following additional elements of the integrated deterrence concept: (1) the integration of military and non-military instruments across governments; (2) making critical infrastructures more resilient in the face of disruptive attacks – attacks meant to slow coming to the aid of US allies; (3) deny the enemy the ability to realize short, fait accompli type scenario attacks on key allies.[16]

In April 2021, Austin emphasized that "the cornerstone of America's defense is still deterrence, ensuring that our adversaries understand the folly of outright conflict."[17] Austin called for "the right mix of operational concepts and capabilities—all woven together and networked in a way that is so credible, flexible, and formidable that it will give any adversary pause."[18] This integration, as noted by Austin, must occur across the domains of conflict: land, sea, air, cyber, and space—knocking down barriers to organizational cooperation along the way. Austin emphasized that integrated deterrence also must be based on four additional elements:

- Must exist across platforms and systems that are not stove-piped; and which do not depend on a single service.
- Ensuring that capabilities like the global positioning system can continue even if it is attacked with missiles, cyber tools, or space-based weapons.

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[14] See literature review in Tim Sweijs and Samuel Zilinzik, "The Essence of Cross Domain Deterrence," in Frans Osinga and Tim Sweijs, eds., Deterrence *in the 21st Century Insights from Theory and Practice* (The Hague and Berlin, Springer and Asser, 2020)

[15] Secretary of Defense Remarks at the 40th International Institute for Strategic Studies Fullerton Lecture (As Prepared), July 27, 2021, Singapore. Further reinforced in the Biden Administration's *National Security Strategy* (The White House, Washington, DC, 2022), p. 22.

[16] Jim Garamone, "Concept of Integrated Deterrence Will Be Key to National Defense Strategy, DOD Official Says," *DOD News*, December 8, 2021.

[17] "Secretary of Defense Remarks for the INDOPACOM Change of Command," Department of Defense, April 30, 2021, https://www.defense.gov/News/Speeches/Speech/Article/2592093/secretary-of-defense-remarks-for-the-us-indopacom-change-of-command/.

[18] Department of Defense, "Secretary of Defense Remarks."

- Employing cyber effects in one location to respond to a maritime security incident hundreds of miles away.[19]
- Integrating networks with U.S. allies and partner nations.[20]

The idea of deterrence in the modern era came into being with the appearance of nuclear weapons. The appearance of these weapons generated a literature that sought to determine the impact of these weapons on the conduct war and, in parallel, the impact of these weapons on political decision making on the use, or, alternatively, the non-use of force.[21] National security and strategies in pursuit thereof changed dramatically on August 6, 1945, when the United States dropped the atomic bomb on the Japanese city of Hiroshima. This statement is obviously not meant to suggest that every foreign policy event remains driven by nuclear dynamics, but it is meant to suggest that the underlying structure of especially major- and mid-powers' significant international relations and the underlying structure of major national security incidents are clearly influenced by strategic dynamics. Not surprisingly, theories and doctrines concerning nuclear weaponry evolved over the decades. This evolution is germane to the Navy's attempt to ensure that today's force structure and associated weapons are properly integrated across the conventional and nuclear spectrum.

This literature review will focused on significant changes that have occurred in strategic doctrine and theories over the decades. It will also address the role of the Military Revolutions (MTRs) on nuclear policies. All MTR s have clearly been motivated by technology that are then operationalized by states and their associated political systems. Scholars such as Clausewitz[22] and Sun Tzu[23] did not discuss technology or view it as a significant contributor to questions of future war and its nature. Both theorists viewed technology as static and not part of the political calculus of war. Not everyone shares these views. Fissell (2022) represents comparative revisionist studies of the military technical revolution that nests the phenomenon of technology and its applications across historic continuums that allow the unpacking MTRs. His book *The Military Revolution and Revolutions in Military Affairs* updates two central debates in military history--the one surrounding the concept of military revolution, and the one on military affairs--whilst advancing original research in both fields.[24]

1950-1970s: Some Early Strategic Propositions and "Theories" and their Evolution

[19] Department of Defense, "Secretary of Defense Remarks."
[20] Department of Defense, "Secretary of Defense Remarks."
[21] One of the early foundational works: Bernard Brodie, *Strategy in the Missile Age* (Princeton: Princeton University Press, 1969)

[22] Clausewitz, Carl von, Howard, Michael; Paret, Peter (eds.). On War (trans. ed.). (Princeton: Princeton University Press 1984, 1976).
[23] Sun Tzu, *The Art of War*, Thomas Cleary ed. *The Art of War* Trans ed., (Oxford University Press, 2005).
[24] Mark Charles Fissell, *The Military Revolution and Revolutions in Military Affairs*, (De Gruyter Oldenbourg: 2022).

During the late 1940s, both US and Soviet policymakers and scholars began developing theories and models suggested by the wider implications of nuclear weapons. Davis and Stan (1984) in their *Concepts and Models of Escalation* present an excellent overview of strategic escalation models that were of particular interest in the capitals of the United States, Soviet Union, and China and were relatively late in being formulated following the fielding of their nuclear forces.[25] The term "escalation" did not appear in scholarly policy discussions until the late 1950s as suggested by Freedman in his *The Evolution of Nuclear Strategy*.[26] As this conceptual work gathered momentum, scholars quickly started to formulate assumptions, concepts, decision rules, and models of nuclear escalation.

Initial and major concepts and findings of escalation as well as its relevant decision rules, according to Davis and Stan, included:

- Escalation decision rules are and will be extremely contextual;
- "Mirror imaging" Russian and US rules and behaviors is wrong and problematic;
- Soviet escalatory behaviors consistent with their doctrine of an "ideal war" "Western Imperialists" attack Warsaw Pact countries; this implied that
    - Significant differences exist in the US, Soviet/Russia, and China relative to perceptions and views of escalation;
    - Soviets will try to avoid unnecessary nuclear conflicts, unless they are relatively sure they know the end-results;
    - If Soviets believe they are explicitly threatened in an existential war, they will move and move quickly;
    - Much of NATO and US have strategic policies and nuclear options have traditionally been viewed in deterrence terms;
    - If the Soviets/Russians believe a European War is inevitable they will move quickly; on the other hand, US action could be delayed because of US domestic issues;
    - Up to the early 1980s, too little attention by policymakers and scholars was devoted on differences between strategic nuclear doctrine and theater nuclear forces;
    - US much more interested in "arms control" as compared to the Soviets.

Escalation as a concept was a forerunner of the idea of "compellance" by Thomas Schelling in his important and seminal books such as *Arms and Influence* and *The Strategy of Conflict*.[27] Schelling argued that in addition to stopping actions, nuclear weapons could also shape actor behavior in a bargaining framework thus giving these weapons a political utility that could influence policy outcomes. Schelling also introduced the important concept of "entanglement" and how it impacts on escalation

[25] Paul K. and Peter Stan, *Concepts and Models of Escalation*, (Santa Monica, CA: RAND Corporation, 1984. https://www.rand.org/pubs/reports/R3235.html.
[26] Lawrence Freedman, *The Evolution of Nuclear Strategy*, (New York: St. Martin's Press, 1981), pg. 210.
[27] Thomas C. Schelling, *Arms and Influence*, (Yale University Press, 1966), pg. 70.

pressures. Many of his initial provocative ideas from the era of the 1950s and 1960s have returned to vogue in last few decades due to myriad pressures on the blurred lines between conventional and nuclear weapons. Other than the Marine Corps, all the military services now have explicit strategic, nuclear perspectives and responsibilities.

Schelling and others' theories assumed rational actor models that explicitly weighed costs and benefits in the bargaining framework that would underpin any consideration of nuclear use. Schelling argued that the presence of nuclear weapons in a bargaining framework limited the chances for escalation due to the threat of unacceptably high destruction. He also argued that risks are inherently asymmetrical in bargaining framework where structural uncertainties are always part of the situation.[28] "? In his equally influential book *The Strategy of Conflict* mentioned above, Schelling also argues that when one studies the strategy of conflict, one must consider that "most conflict situations are essentially *bargaining* situations."[29] Schelling drew heavily on game theory to tease out the impact of nuclear weapons in relations between states.

A counter to Schelling's argument perhaps was best embodied in Robert Jervis's famous work on perceptions, in which he argued that actors do not necessarily share assumptions governing rationality in the bargaining framework. Jervis convincingly argued that actor assumptions were a function of actor perceptions, which created a difficult asymmetry in any bargaining framework rendering communications extremely in the conveying of intent that underpins the bargaining.[30] As noted by Jervis, cultural and historical differences between antagonists could shape actor perceptions and rationality in profound ways, distorting the cost-benefit considerations in the bargaining framework. This debate aside, one of the major questions that must be addressed today is the impact that strategic weapons held by the nuclear states has impacted on "rational decision-making

Albert Wohlstetter in his important monograph *The Delicate Balance of Terror* argued that requirements for deterrence are stringent.[31] Wohlstetter analyzed the vulnerability of strategic systems, arguing that any vulnerabilities could weight the cost-benefit analysis of an adversary in favor of pre-emptive strike – thereby undermining the balance of terror. He theorized that America's Strategic Air Command bases were potentially vulnerable, providing the Soviet Union with the prospect of a debilitating first strike on the United States. Wohlstetter also argued against the idea of mutual vulnerability of civilian populations, arguing that governments had a duty to protect its citizens from mass incineration. His arguments paved the way missile defense systems many years later. Wohlstetter's pathbreaking work eventually led to a more generalized approach to deterrence that relied on a "seamless web" of tactical and strategic nuclear weapons in an escalation chain that would discourage any enemy from attacking first. The so-called balance of terror subsequently became stabilized at the both the United

[28] Shelling, Ibid.
[29] Schelling, Ibid., pg. 5.
[30] Robert Jervis, *Perception and Misperception in International Politics*, Revised Edition (Princeton: Princeton University Press, 2017)
[31] Wohlstetter, Albert J., *The Delicate Balance of Terror,* (Rand Corp, 1958).

States and the Soviet Union placed strategic nuclear weapons on board submarines that could not be detected and were hence invulnerable to a pre-emptive strike.

1980-1990s

It is important to note that the prominence of a nuclear "stalemate" existed to a certain extent as the superpowers greatly improved and increased their strategic capabilities with the advent of thermonuclear weapons. A nuclear "stalemate" and the receding probability of a nuclear war may strike the reader as something of an exaggeration. Is deterrence a necessary for both sides having a nuclear delivery capability, and all-out war nearly obsolete? History so far seems to suggest this is the case. For decades the doctrine of mutual assured destruction (MAD) pointed to the scary position that mutual extinction was probably the only outcome of a general strategic war between superpowers. Nevertheless, as previously noted, there have been historical doubts over the stability of deterrence.

Patrick M. Morgan suggests that in recent decades there has been relevantly renewed interest in deterrence.[32] Morgan argues that this renewed interest has been a function of the lack of security and stability of international affairs as well as the relatively new threats of terrorism, intrastate ethnic, religious, and political fighting, insurgencies, and civil wars. These wars have proven extremely difficult to successfully prosecute for the nuclear-armed states in the post-World War II era. The second half of the 20th century and the first two decades of the 21st are littered with the failures of large conventional militaries to subdue localized national wars of liberation. In one instance where the United States believed it had achieved a decisive result in Operation Desert Storm, the subsequent "victory" parade in Washington DC proved to be chimera as military operations continued around Iraq for the next decade.

Morgan further suggests reasons for the proposition presented above, when he suggests, "there is serious disarray in the East-West deterrence relationship once again, after a brief Cold War hiatus, with disturbing possibilities of outright conflict now being openly discussed among analysts and observers. Part of the reason that deterrence is so challenged today is that the very concept of deterrence—including cross-domain deterrence—has become seriously overstretched to apply to far more than it reasonably can or should."[33]

In recent decades (and as highlighted in this report's introduction) we have also recently calls for a concept known as "integrated deterrence," which is a way of trying to suggest that the multi-domain war can somehow be linked in a different kind of "seamless web" a variation of the Flexible Response strategy of the 1960s in which conventional and nuclear forces were directly linked in an escalation chain. The relevance of Flexible Response will be addressed in section four of this report. It is not at clear today how the possibility of multi-domain wars – air, sea and undersea, land, space, cyber, information, etc. within earlier theories of earlier concepts/ theories of multi-

[32] Patrick M. Morgan, Deterrence: A Conceptual Analysis, (Sage Publishers, Second Edition, 1983).
[33] Morgan, Ibid., p. 50.

domain war fits within 21st century conceptions/theories of war: attritional vs. limited, vs. boutique; grey zone. Do states still or can believe in utility of attritional war?

Military Technical Revolutions

There have been several what can be referred to a military-technical revolutions (MTRs) in military affairs -- especially when considered as a determinant of the nature of future war. Throughout the 1980s and into the 1990s, a broad range of literature assessed the processes to technical evolution as well as the weapons and systems were associated and discussed in light of MTR's implementation. This was especially the case during the decades of the 1980s and 1990s. Some would also argue this "revolution" is still a main driver of military change.[34] The popularization of the MTR of the 1980s and early 1990s originated in Soviet writings authored by Marshal Nikolai V. Ogarkov, then chief of the Soviet General Staff; and Colonel-General Makhmount Gareyev, then First Deputy of the Soviet General Staff. Ogarkov, hypothesizing about the nature of future war, became increasingly concerned with the pace and depth of technical activities and thinking.[35]

> According to Marshal Ogarkov, a profound, and in full sense revolutionary turn is taking place in military affairs in our time in connection with the development of nuclear weapons, rapid advancements in electronics, development of nuclear weapons based on new principles of physics, as well as in connection with extensive qualitative improvements of conventional weapons.[36]

In his 1982 book (*Always Prepared to Defend the Fatherland*), Ogarkov popularized the concept of the MTR as an event that was fundamentally transforming the nature and scope of warfare through technical change. Ogarkov believed that technological change had significantly impacted on warfare at critical historical epochs when technological developments produced revolutionary change in warfare.[37] To demonstrate the relevance of the concept of the MTR, in the 1980-1990s the MTR focused considerably on reconnaissance-strike complexes of autonomous non-line-of sight engagement of mobile targets with high lethality weapons at increased ranges. These weapons are now prominent throughout the arsenals of developed states and have indeed transformed the conventional battlefield. Consider the role that drones have taken on. In the 1980s and early 1990s, the Soviets/Russians recognized that space-based systems would become more important (as they have), as would weapons based on "other

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[34] Elliot A. Cohen, "A Change and Transformation in Military Affairs," *Journal of Strategic Studies* 27, No. 3, 2010. Also see Cohen, A Revolution in Warfare, *Foreign Affairs* (March/April 1996).
[35] Ogarkov, N. V., Vesgad v Gotovnosti k Zashchite, (Always Prepared to Defend the Fatherland, Translated by David Isby, 193), (Moscow: Voyenizdat 1982).
[36] Hinds, John, Phillip Peterson, and Notra Trulock, "Soviet Military Theory from 1945-2000," The Washington Quarterly, Fall 1986, pgs. 117-137, pg. 128).
[37] Ogarkov, Chapter 2 generally, especially pgs. 31-33.

physical principles" including those that could employ nuclear-style effectiveness without the associated political limitations of nuclear weapon news[38]

The New York Times recently raised similar issues in the context of the Russian invasion of Ukraine:

> In destructive power, the behemoths of the Cold War dwarfed the American atomic bomb that destroyed Hiroshima. Washington's biggest test blast was 1,000 times as large. Moscow's was 3,000 times. On both sides, the idea was to deter strikes with threats of vast retaliation — with mutual assured destruction, or MAD. The psychological bar was so high that nuclear strikes came to be seen as unthinkable.
>
> Today, both Russia and the United States have nuclear arms that are much less destructive — their power just fractions of the Hiroshima bomb's force, their use perhaps less frightening and more thinkable.
>
> Concern about these smaller arms has soared as Vladimir V. Putin, in the Ukraine war, has warned of his nuclear might, has put his atomic forces on alert and has had his military carry out risky attacks on nuclear power plants. The fear is that if Mr. Putin feels cornered in the conflict, he might choose to detonate one of his lesser nuclear arms — breaking the taboo set 76 years ago after Hiroshima and Nagasaki.[39]

Echevarria and Shaw suggest that weapons and systems using technologies associated with the MTR have and will continue the trend of replacing systems on less than a one-for-one basis. Stockpiles will probably be smaller but more effective as we can presently observe. The size of the force is less important than its composition and quality; we will continue to see more specialization and it is quite probable that we will also see these dynamics outside of the superpowers.[40]

Desmond Ball in his provocative "Nuclear War at Sea" (1985-1986), begins by stating that "the subject of nuclear warfare at sea, and the difficulties of controlling escalation of conflict at sea, has so far drawn very little attention from the strategic community."[41] While this report directly assesses the role of the Navy and its role in

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[38] The battlefield implications of similar thinking can be found in: Reznichenko, et. al., *Taktika* (Tactics) (Moscow: 1987, especially Chapters 1 and 2).

[39] William J. Broad "The Smaller Bombs That Could Turn Ukraine Into a Nuclear War Zone," *New York Times,* March 21, 2022.

[40] Echevarria, Antulio and John Shaw, "The New Military Revolution: Post Industrial Change," *Parameters*, v. 22, n. 4, Winter 1992-93, pp. 70-79.

[41] Ball, Desmond, "Nuclear War at Sea'" *International Security*, Winter, 1985-1986, Vol. 10, No. 3, pp. 3-31 Published by: The MIT Press Stable URL: https://www.jstor.org/stable/2538940 JSTOR, p. 3.

nuclear activities, Ball's article represents an early attempt to address this issue and, thus, requires our attention especially considering at the time of the article's publication because "that more than a third of the nuclear weapons of the U.S. and the Soviet Union are deployed on sea-based platforms; the control of these weapons by central national authorities is physically loosest; and the doctrines and operational procedures associated with sea-based nuclear weapons are subject to less well-defined thresholds and, in some cases, are quite provocative."[42] Thus, he argues that nuclear weapons at sea are extremely difficult to control and the first use of such weapons could be from sea platforms.

His specific research foci and he assess each of the following:

- "Accidents at sea.
- the attractiveness of ships as nuclear targets.
- The launch autonomy of naval commanders.
- Problems raised by dual-capable systems and platforms.
- Anti-submarine warfare (ASW) strategy.
- The vulnerability of the ASW and command, control, communications, and intelligence (C3I) support structures and the incentives for preemption that derive from this.
- The U.S. Navy's doctrine for the conduct of offensive operations in forward areas.
- U.S. Navy doctrine for the employment of tactical nuclear weapons.
- Soviet doctrine for war at sea.
- The lack of U.S. contingency planning concerning the escalation dynamics of naval conflict, and the U.S. Navy's resistance to such planning."[43]

Ball believed that the possibly of nuclear warfare starting at sea was at least as likely as warfare in other theaters or military spaces. Ball concluded by stating "It is clear that much more attention needs to be accorded general questions concerning the utility of nuclear weapons at sea, Soviet naval nuclear weapons capabilities and doctrine, and the implications of nuclear war at sea for escalation control. The resolution of these questions would enable the development of concepts and the promulgation of doctrine that should serve to enhance the strategic maritime position of the West while contributing to the fundamental objective of maintaining deterrence with respect to all possible levels of conflict".[44]

2000s- and "Great Power" Competition

In a provocative article by David C. Logan entitled "Are they reading Schelling in Beijing"? The dimensions, drivers, and risks of nuclear conventional

[42] Ibid.
[43] Ball, Ibid., p. 4.
[44] Ball, Ibid,, p. 31.

entanglement in China, he argues that there are inherent dangers in nuclear-conventional integration. Logan develops an analytic framework based on Schelling's seminal works and applies it to China.[45] Logan argues that the fear of many of China's conventional and strategic weapons are not as integrated and the fear is unfounded. It is not based on strategy policy and any integration that is desired is a function of specific "parochial" organizations. He concludes his examination by suggesting that strategic communications amongst key players is critical and is the "key to controlling escalation risks stemming from nuclear-conventional entanglement in China."[46]

While some of the issues identified above in addition to escalation and compliance, the issue of nuclear-conventional integration, escalation, impact of weapons technology with the development of nuclear weapons, rapid advances in electronics, development of weapons based on new principles of physics, as well as in connection with extensive qualitative improvement of conventional weaponries often blurs the distinction between tactical and strategic weapons. As highlighted at the outset of this report, issues of nuclear conventional integration have become an important issue. Moreover, many strategists believe that many of the other issues or aspects of the issues identified above are still relevant in unpacking issues surrounding conventional-nuclear integration in the current era.

The current postures of the great powers – The United States, Russia, China – challenge many of the strategic theories and propositions that have long driven international relations among these countries. We can see some of this specifically by the quote presented above. Putin seems to have his own belief in the potential use of especially tactical nuclear weapons as he suggested during Russia's war in the Ukraine.

During the later 20th and early 21st centuries, strategic theories evolved as a reflection of changing global and regional situations. Importantly, however, a series of treaties amongst the great powers have largely removed the use of international and intermediate nuclear weaponry from the battlefield calculation. Treaties such as Intermediate-range Nuclear Forces (INF) treaty have basically removed Intermediate-range and ground-launched nuclear weapons from superpower conflicts, although there is widespread agreement that Moscow has violated the INF treaty.

To abide by INF and other treaties, the United States has pushed the integration of nuclear and conventional forces. Lt Col, USAFR Nathan J. List has published an extremely interesting thesis on integrating forces.[47] List addresses the dynamics necessary for achieving strategic stability in the present international environment. In assessing Russian hybrid warfare, he argues that the integration of nuclear and conventional weapons has had a positive effect on strategic stability because he assumes this will force the US to maintain its deterrence posture. He also suggests that "it will also

[45] David C. Logan, "Are they reading Schelling in Beijing? The dimensions, drivers, and risks of nuclear-conventional entanglement in China," *Journal of Strategic Studies*, DOI: 10.1080/01402390.2020.1844671
[46] Ibid., p. 1.
[47] List, Nathan J., "Conventional Nuclear Integration: Reinforcing Strategic Stability," Report for Air College, Maxwell, AFB, Alabama, 2020.

positively impact the relationships with allies and partners in Europe by providing them with a flexible, rapid response".[48] If this is the case with Russia is open for question. Nevertheless, "the threat posed by Russian strategy and refined hybrid warfare tactics, will require the full spectrum of military power to defeat."[49] (List, 2020:17). As suggested earlier, we have already witnessed this through both Russia and our policies with Ukraine since their invasion of the country.

The *Air Force Doctrine Publication 3-72 : Nuclear Operations*[50] argues that nuclear options remain a key component for the success of joint all-domain operations and will be "critical to this current era of great power competition, especially as it pertains to deterrence." While there was considerable optimism when the Soviet Union collapsed and had on the US view of nuclear options. The employment of nuclear weapons is normally considered a form of strategic attack. Strategic attack is "offensive action specifically selected to achieve national strategic objectives." These attacks seek to weaken the adversary's ability or will as indicated in *Air Force Doctrine Publication (AFDP) 3-72*.

Recent scholars as well as policy makers believe it is possible to engage in or even escalate conflict to achieve strategic objectives without necessarily having to achieve operational objectives as a precondition as posited in AFDP 3- 72. Hence, strategic attack can accomplish national, multinational, or theater strategic-level objectives without necessarily engaging an enemy's fielded military forces. However, this does not preclude operations to destroy the enemy's fielded forces if required to accomplish strategic national objectives.

Michael Krepon,[51] takes a similar position, when he begins his assessment the AFDP 3-72 by quoting the leader of the U.S. Strategic Command, Admiral Richard statement that "the U.S. military must shift its principal assumption from 'nuclear employment is not possible' to 'nuclear employment is a very real possibility,' and act to meet and deter that reality."[52] He states that he understands why the Defense Department "has delved" back to "conventional-nuclear integration." He also argues that Strategic planners are again tasked to think about the unthinkable. Competitors comingling "missiles that carry conventional and nuclear ordnance. "Entanglement" is a serious problem. The chain of command could break down in a severe crisis between nuclear-armed rivals. First use is unlikely to be a U.S. decision, but an adversary seeking to avoid defeat could well make this decision."[53]

[48] Ibid, p. 16.
[49] Ibid, p. 17.
[50] US Air Force, Nuclear Operations, Air Force Doctrine Publication 3-72.
[51] Michael Krepon, Misguided Military Doctrine, *Arms Control Work*, February 23, 2021, https://www.armscontrolwonk.com/archive/1211003/misguided-military-doctrine/.
[52] Ibid, p. 1.
[53] Ibid.

John K. Warden, in an important publication,[54] also examines conventional-nuclear integration by presenting arguments concerning how:

- U.S. defense and nuclear policies give precedence to deterring limited adversary aggression that is backed by threats of escalation, including across the nuclear threshold.

- Deliberate combatant command plans are designed to achieve U.S. objectives while minimizing the risk of nuclear escalation.

- Combatant commands have adaptive planning capabilities and procedures to develop courses of action that will achieve U.S. objectives should the adversary employ nuclear weapons.

- The Joint Force is prepared to conduct operations under threat of adversary nuclear employment, and if necessary, in a nuclear environment.

- The best mix of U.S. nuclear, non-nuclear, and dual-use capabilities are fielded to deter conflict and escalation.

Futter[55] is another scholar that suggests that we are presently living in an era of significant transition. He focuses specifically on uncertainty in the global nuclear order where nuclear security and nuclear risks are obviously changing, and the ways, ends, and means devised to manage the nuclear condition are under pressure. This is the result, in part, on technological, geopolitical, and normative change and transformation across the nuclear ecosystem. Taken together, these developments are questioning the way that the US and other superpowers manage nuclear threats, and particularly, how they think about strategic stability, deterrence, and arms control. While we have obviously been witnessing been a period of unsettling, rapid, and potentially revolutionary change in the global nuclear order in the past, today appears to be different because the phenomenon is so wide-spread and multifaceted, and because the challenges go right to the heart of how we think about and conceptualize the nuclear weapons. The aim of this talk is to unpack and explain these developments and begin to outline the way forward.[56]

Recently Anderson and McCue[57] in an article entitled, "Deterring, Countering, and Defeating Conventional-Nuclear Integration," argue that nuclear powers have integrated their strategic and nuclear weapons, as we have seen,

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[54] John K. Warden, Conventional-Nuclear Integration in the Next National Defense Strategy, October 26, 2020, https://www.cnas.org/publications/commentary/conventional-nuclear-integration-in-the-next-national-defense-strategy.

[55] Andrew Futter, Hacking the Bomb: Cyber Threats and Nuclear Weapons, (Georgetown University Press, 2018);
Andrew Futter, *The Politics of Nuclear Weapons*, (Palgrave Macmillan; 2nd ed. 2021 edition).

[56] Ibid.

[57] Justin Anderson and Lt Col James McCue, USAF, "Deterring, Countering, and Defeating Conventional-Nuclear Integration*," Strategic Studies Quarterly, Spring*, 2021.

specifically to fight regional conflicts. In other words, "they have organized, trained, and equipped nuclear capable forces for theater war fighting.[58] They suggest that it is nearly inevitable that regional conflicts become nuclear.

"The challenge posed by this conventional-nuclear integration (CNI) cuts across strategic, operational, and tactical levels of warfare. While CNI is not a new phenomenon, its growth and evolution in recent years is placing increasing pressure on US regional deterrence and defense strategies"[59] Anderson and McCue also argued that the US is attempting that such an integration could be very well counter-productive, according to the US could because insufficient "advantages within a future regional conflict to overcome either the latter's potential vulnerabilities or the risks attendant with attempting to leverage nuclear escalation."[60] The article concludes by suggesting deterring and countering such conventional-nuclear, US Policy makers need to clearly and unambiguously suggests that US forces will challenge such integration.[61]

As indicated in this literature view, scholarship and research continues to address the thorny questions surrounding the integration of nuclear and chemical weapons. Perhaps unsurprisingly and as highlighted in this literature review, many believe that chances of regional and/or limited nuclear wars have increased in recent years.

[58] Ibid., p. 28.
[59] Ibid.
[60] Ibid.
[61] Ibid., p. 52.

Section III: Conceptualizing Links Between Nuclear and Conventional Weapons

While the Navy needs to look forward in posturing itself to confront an era where adversaries contemplate nuclear and conventional operations, it can also look back at its history to draw lessons from an earlier era to develop conceptual building blocks to the 21st century strategic environment. The suggestion in this report is that there is a relationship between what senior U.S. officials today call "integrated deterrence" with Western strategy from an earlier era known as Flexible Response developed by NATO in 1967 to address the military threat posed by the Soviet Union and Warsaw Treaty Organization to Western Europe. It seems intuitively obvious that indeed there is a distinctive intellectual genealogy between these terms, which require strategists and policy makers to examine the implications for 21st century maritime strategy and naval power.[62]

To be sure, the Navy has largely (and understandably) forgotten this earlier era – rooted in the Cold War. The Navy thus faces a number of challenges as it seeks to reacquaint itself with concepts like deterrence, escalation dominance, and the complex relationship between weapons across warfare domains. Although these concepts and relationships were used extensively to guide strategy during the last century, today they must be applied to new challenges, new technologies, and wholly different political settings than the ones that animated peer competition during the Cold War. As a starting point, the Navy needs an intellectual and technical revolution as much as it needs different planning mechanisms, war fighting concepts, new weapons, and different platforms as it searches for ways to address the multifaceted challenges of deterrence and warfighting across the global commons. To move forward, the Navy should examine its experiences from 60-odd years ago to help the institution build momentum for an intellectual revolution to address current challenges.

Flexible Response and the Navy

What does all this have to do with the Navy and Flexible Response? Historically, the Navy is no stranger to deterrence. During the Cold War, the U.S. Navy provided a vital part of the nation's nuclear deterrent through the eventual deployment of ballistic missiles in the Polaris class nuclear-powered submarines. These platforms were invulnerable to attack, thereby preserving the nation's second-strike capability and

[62] Also see Michael Clarke, "Back to the Future: Is 'Integrated Deterrence' the New 'Flexible Response'?, The *National Interest*, October 23, 2021; Michael O'Hanlon,

stabilizing the nuclear balance of terror.[63] In addition, the U.S. Navy played an instrumental role in operationalizing the doctrine of Flexible Response on the high seas. If required, the Navy could draw upon nuclear bombs, shells fired from large caliber guns, depth charges, anti-submarine torpedoes and rockets, surface to air missiles, and sea-launched cruise missiles to preserve escalation dominance over its Soviet foe. During the Cold War, approximately 20 percent of America's nuclear arsenal was at sea on an annual basis.[64] The Navy deployed its nuclear arsenal in the Atlantic, Pacific, and Mediterranean until President George H. Bush ordered these weapons removed from Navy ships in 1991.

Currently, there are no plans to return nuclear weapons to surface ships. Most recently in October 2022, the Biden Administration canceled a program to develop a new, low-yield, sea-launched cruise missile, or SLCM-N. The cruise missile was to have deployed on board Virginia-class attack submarines. These submarines were reported to have deployed a 10-kiloton version of the W76 warhead on the earlier generation of sea-launched cruise missiles as late as 2019.[65]

The absence of nuclear weapons on surface ships or nuclear-powered attack submarines, however, does not mean that the Navy shouldn't remain concerned about issues surrounding the integration of conventional and nuclear weapons. In the event of a nuclear contingency, the Navy would be expected to play a role short of an all-out nuclear exchange. As suggested in this report, the Navy would do well to consider its previous involvement in Flexible Response, which posited a direct relationship between nuclear and conventional weapons knitted together as a "seamless web." Today's joint force is simply another version that seamless web. During the 1960s, that seamless web consisted of conventional weapons, short range tactical nuclear weapons (first deployed to Europe in 1953) all the way up to and including strategic nuclear missiles based in the United States and Europe. These weapons fit within an alliance framework that sought to build up and deploy conventional forces along the inter-German border to protect Europe from a Soviet invasion. In 1956, the alliance agreed on massive retaliation as its strategy in NATO military document MC 14/2,[66] thereby linking the conventional and nuclear

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[63] Herman Kahn, *The Nature and Feasibility of War and Deterrence*, P-1888-RC, 2nd printing (Santa Monica, CA: Rand Corporation, 1960), https://www.rand.org/content/dam/rand/pubs/papers/2005/P1888.pdf; Albert Wohlstetter, *The Delicate Balance of Terror*, P-1472 (Santa Monica, CA: Rand Corporation, 1958), https://doi.org/10.7249/P1472.

[64] Robert S. Norris and Hans M. Kristensen, "Declassified: U.S. Nuclear Weapons at Sea During the Cold War," *Bulletin of Atomic Scientists* 72, no. 1 (2016): 58–61, https://doi.org/10.1080/00963402.2016.1124664.

[65] Background covered in "Nuclear Armed Sea-Launched Cruise Missile," *In Focus*, Congressional Research Service, August 25, 2022.

[66] History drawn from J. Michael Legge, *Theater Nuclear Weapons and the NATO Strategy of Flexible Response*, R2964FF (Santi Monica, CA: Rand Corporation, 1983); Gregory W. Pedlow, ed., *NATO*

components in an integrated allied military strategy built on the deterrent value of nuclear weapons. The initial idea was to hold the Soviet advance long enough and as far forward as possible until nuclear retaliation, becoming known as the "tripwire" strategy. Flexible response evolved out of these circumstances and a robust debate at the time about limited war, reflecting a general unease with reliance on massive retaliation and the prospect of armed confrontations in places where it was unclear what role, if any, could be played by nuclear weapons.

In the early 1980s and under the leadership of Navy Secretary John Lehman, the Navy asserted its direct warfighting role against the Soviet Union with the *Maritime Strategy* that focused on defending alliance supply lines across the Atlantic Ocean, bottling up the Soviet northern fleet along the GIUK gap, and undertaking land- and sea-based operations against the Soviets on the Kola Peninsula. While NATO always remained lukewarm to these ideas, the maritime strategy became an important *raison d'etre* for the United States Navy in carving out a discrete and concrete Cold War-era war-fighting mission that had powerful nuclear and conventional components.[67]

In retrospect, the 1980s represented a high-water mark for the U.S. Navy in terms of connecting the service to a war that, at its height, could have included nuclear weapons launched from its ships, aircraft, and submarines across a spectrum of conflict. After the end of the Cold War, however, the Navy's connection to U.S. defense strategy languished as attention shifted to various regional crises across the Middle East and South Asia, which culminated in the land wars in Iraq and Afghanistan following the 9/11 attacks.

With the removal of a principal adversary on the high seas, navies have not been the primary weapon of developed states. Instead, the developed states turned their focus to policing or nation building operations on land in places like Iraq, Afghanistan, and the Sahel as well as coping with the disintegration of states like Libya, Syria, and Yemen. Global navies, including that of the United States, have continued to focus on areas outside of high-intensity wars with such activities as counterpiracy, disaster relief, disrupting the trade in illegal drugs, and rescuing refugees. While the U.S. Navy has participated in various strike operations in the Persian Gulf and Afghanistan, its tasks in or related to war on the high seas have become obscured simply because the high seas thankfully have been free of large-scale political violence. With this retreat from warfighting missions has also come a retreat from important strategic concepts such as deterrence.

Strategy Documents, *1949–1969* (Brussels: Supreme Headquarters Allied Powers Europe, 1997), https://www.nato.int/docu/stratdoc/eng/intro.pdf.

[67] As covered in George Baer, *One Hundred Years of Sea Power* (Palo Alto: Stanford University Press, 1994).

Yesterday, All My Troubles Seemed So Far Away…

The bygone era of Flexible Response is, well, bygone. From the Navy's perspective, what are the similarities and differences between integrated deterrence and flexible response? While both ideas appear in strikingly different strategic circumstances of near-peer competition, there are important strands of continuity between these ideas. Flexible Response appeared as a backlash to the Eisenhower administration's doctrine of Massive Retaliation. Some argued that this doctrine reduced America's flexibility in dealing with situations short of all out nuclear war.[68] The United States needed to address Soviet and/or communist adversaries short of this unlikely circumstance, as spelled out in Maxwell Taylor's book *The Uncertain Trumpet* (New York: Harper and Row, 1960). President Kennedy agreed with this perspective and emphasized war-fighting capabilities across the spectrum of combat.

Today's emphasis on integrated deterrence arises due to a perceived shortfall in the ability of the United States to address "grey zone" or so-called hybrid war in which adversaries are drawing upon military or paramilitary instruments in situations short of all-out war to achieve political objectives. China's "grey zone" tactics across the South China Sea is one example of this phenomenon, in which so-called Chinese fishing vessels and coast guard ships are being used as political instruments to push dubious territorial claims in places like the Scarborough Shoals and elsewhere.

A second important similarity between these approaches is their shared recognition that multi-domain operations are a characteristic of the battlefield and an object of deterrence strategy. Both approaches envision deterrence functioning across battlefield wartime domains. Flexible Response envisioned a "seamless web" of combat integration meant to present an imposing mix of capabilities to deter the opponent and, if necessary, control escalation in conflict by having the ability to trump the opponent's response at any level. Flexible Response clearly linked conventional and nuclear weapons, envisioning the use of nuclear weapons across a range of tactical scenarios. During the era, America's forces were equipped with a various types of tactical nuclear weapons that formed part of an escalation sequence that included intermediate- and intercontinental range nuclear missiles.[69] In the escalatory sequence, nuclear weapons served as the vital escalation firebreak in which there was a clear political and military difference between conventional and nuclear weapons on the escalation ladder.

Bearing these similarities in mind, there also are important differences between Flexible Response and integrated deterrence. At the top of the list must be the 21st century's changed geopolitics. Integrated deterrence clearly is directed at China and, to a

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[68] As emphasized by Michael O'Hanlon, "The Best Defense? An Alternative to All-Out War or Nothing," Brookings Blog, Order from Chaos, May 21, 2021, published online at https://www.brookings.edu/blog/order-from-chaos/2021/05/21/the-best-defense-an-alternative-to-all-out-war-or-nothing/

[69] Andrew Bacevich, *The Pentomic Era: The U.S. Army Between Korea and Vietnam* (Washington, DC: National Defense University Press, 1986); Brian Linn, *Elvis's Army: Cold War GI's and the Atomic Battlefield* (Cambridge, MA: Harvard University Press, 2016).

lesser extent, Russia, on the Eurasian land mass. Unlike the era of Flexible Response where NATO sought to protect its member state territories from invasion, the objectives of integrated deterrence are less well defined. All that really can be said is that the Indo-Pacific constitutes a vast maritime domain that make navies a principal feature of any deterrence framework. In addition, the political circumstances present in Europe that undergirded Flexible Response are absent in the Indo-Pacific. Other than the Indo-Pacific's loosely configured Quadrilateral Security Dialogue comprised of the United States, Australia, Japan, and India, there is no collective defense organization in existence. Persistent fractious regional relations prevent the development of a unified threat perception to drive collective planning to develop shared understandings of strategic problems.

There are other important differences. While both integrated deterrence and Flexible Response envisioned a seamless deterrent web, today's "web" is much more complex due to a wider number of weapons available for use. The nature of weapons today applied across domains for advanced militaries suggests that distinctions between escalation levels can be blurred and, in tandem, involve a more complex targeting environment available in the different warfare domains. Cyber and space operations, for example, offer up the possibility of decapitating military strikes to cripple critical command, control, communications, and intelligence nodes – thereby blinding an enemy – without kinetic physical destruction. Cyber weapons also can be used against critical civilian and military infrastructure. In some respects, this aspect of multi domain operations returns us to debates of the 1950s about mutual and myriad vulnerability points between adversaries in what was then called the balance of terror. During the 1950s, Albert Wohlstetter analyzed the vulnerability of the Strategic Air Command's 16 bases and its small number of nuclear weapons storage depots. He concluded that these vulnerable targets created incentives for pre-emptive strikes – incentives that inherently destabilized the balance of terror.[70] Such a calculus clearly remains relevant on today's battlefields in which multiple targeting vulnerabilities are as problematic today as they were when Wohlstetter grappled with these issues 60 years ago.

Changing weapons technologies constitute another source of escalation instability in cross-domain operations. The preceding discussion of cyber weapons illustrates a central point: 21st century non-nuclear weapons have the potential to be used individually and in combination in ways that can blur the distinctions between the strategic, operational, and tactical levels of war. Moreover, states like Russia also have fielded a new generation of lower yield tactical nuclear weapons that are intended for battlefield use.[71] These weapons importantly have helped further erode the distinction between conventional and nuclear weapons and the implied escalation ladder based on the destructive power of nuclear weapons.

[70] Outlines of the debate captured in Mark Trachtenberg, "Strategic Thought in America, 1952-1966," *American Political Science Review* Vol. 104, No. 2 (Summer 1989) 301:334.
[71] For example, see William J. Broad, "The Smaller Bombs That Could Turn Ukraine into a Nuclear Battlefield," *New York Times*, March 21, 2022.

Moreover, the accuracy, destructive power, and ever-increasing ranges of weapons give actors the ability to disable strategic level enemy targets. Hypersonic missiles boast the capability to hold a wide range of targets at risk with limited warning time that also pose great difficulties for missile defense systems. These weapons also raise difficulties for those on the receiving end of these weapons due to the possibilities that these weapons could carry a nuclear payload. Such a scenario raises the specter of launch on warning uncertainties for the state being attacked, presenting a profound escalation risk in war.

Last, the U.S. Navy must confront the wider impact that integrated deterrence and cross domain operations could have on wartime operations at sea.[72] Any form of deterrence depends on the credibility of the actor seeking to deter its adversary. As previously noted, actor credibility is a function not only of political commitment but of military capability. To preserve credibility, the Navy will need to equip and train itself for cross-domain operations that may render traditional ideas of a war at sea irrelevant. A 21st century war at sea almost certainly will look dramatically different than the kind of war envisioned during the Cold War and the force structure that evolved out of World War II.

During World War II and the Cold War, the Navy sought to control the oceans for the purpose of conducting strike operations ashore and, in combination, to move land forces to and from the war while keeping those forces re-supplied. The Navy postured itself to fight across the three distinct maritime domains: surface, subsurface, and in the air. The aircraft carrier served as the central platform for power projection, with its airplanes used for strike operations on land and at sea. Cold War-era battles at sea were envisaged as a variation on the Navy's experiences in the Pacific during World War II. Today, however, aircraft carriers and their supporting fleets have lost their unrestricted maneuver room off enemy shores and are out-ranged by a variety of accurate, shore-based missile systems as embodied in China's DF-series anti-ship missiles. It is unlikely that a 21st century naval war in the Indo-Pacific will involve a re-enactment of the Leyte Gulf – the largest naval battle of World War II.

Instead, 21st century cross domain operations may see the Navy become more of an enabler of operations and capabilities rather than the principal instrument responsible for prosecuting them. Sea control and power projection may look dramatically in a multi- and cross-domain war. Surface fleets will almost certainly need more autonomous systems drawing upon artificial intelligence to enable ongoing reloads of kinetically based weapons across various domains. Instead of delivering strike operations on land,

[72] Concepts emerged several years ago under the rubric of the Air Sea Battle. The next iteration was addressed in Michael E. Hutchens, William D. Dries, Jason C. Perdew, Vincent D. Bryant, and Kerry E. Moores, "Joint Concept for Access and Maneuver in the Global Commons: A New Joint Operational Concept," *Joint Forces Quarterly* 84 (1st Quarter 2017) 134:139; Kenneth J. Braithwaite, Secretary of the Navy, *Advantage at Sea: Prevailing with Integrated All Domain Naval Power* (Department of Navy, Washington, DC: December 2020).

carrier air wings may be used to provide route security for autonomous systems delivering long-range payloads on a wide-ranging maritime battlefield.

This section concludes that Flexible Response provides a sound point of departure for the Navy to think through the implications of integrated deterrence and the multi-domain concept of operations that operationalizes integrated deterrence. Flexible Response envisaged a seamless web of conventional and nuclear capabilities knitted together by an escalation ladder that sought to convince the opponent against acting. Integrated deterrence presents a variation on the basic premises of Flexible Response, but adds multiple layers of complexity across different warfare domains with newer weapons technologies that address the 21st century's changed political and strategic circumstances.

The Navy faces significant challenges in adjusting to integrated deterrence. The Navy today is the least joint of all the US military services, yet the requirements of integrated deterrence require a greater degree of "jointness" than ever before. Moreover, integrated deterrence also calls for changes in the way the service organizes, equips, and trains itself to support a multi-domain war. Yet here again, the lessons from the era of Flexible Response could prove instructive. The 1960s saw the Navy introduce new families of weapons aboard ships and submarines and integrated itself into national-level command plans for nuclear operations. The Navy took these dramatic steps in the 1960s and could do so again today.

In an earlier era, the Navy embraced the requirements of Flexible Response – equipping and training the fleet with new weapons for a wide range of wartime scenarios. We are just at the beginning of fleshing out concepts like integrated deterrence and determining what it may mean for force structure and operations. The suggestion in this essay is that it calls for nothing less than an intellectual revolution to conceptualize integrated deterrence and, in tandem, operationalize the ideas with plans, policies and programs. That revolution must start – the sooner the better.

CONCLUSIONS AND RECOMMENDATIONS

1. The list of issues needing clarification and further analysis surrounding the whole concept of nuclear-conventional integration for the Navy is a long one. At the top of this list:
    a. It is unclear what the concept of "conventional-nuclear integration" means for the Navy.
    b. The Navy's role in nuclear conflict short of a strategic nuclear exchange involving its Ohio-class submarine-launched ballistic missiles is not clearly defined.
    c. It remains unclear how the Navy's conventional weapons from either surface or aerial platforms would be used in different scenarios that involved limited nuclear use.
    d. The Navy needs to clarify expectations, missions, and command relationships envisioned by the regional Combatant Commands as well as the Strategic Command associated with the possibility of limited nuclear use on land and in the maritime domain.
    e. The Navy will need to develop operating concepts to support training and operations in a nuclear environment. A starting point for this analysis could be the 1960s-era approach applied throughout the fleet under the rubric of Flexible Response.
    f. Recommendation: The Navy should mount a coordinated study and analysis effort drawing upon expertise at institutions such as the Naval Postgraduate School and the Naval War College that is focused on all the above questions and issues.
2. There is a knowledge deficit in the Navy today about the relationship between nuclear and conventional weapons and the impact of these weapons on strategy, policy, and adversarial bargaining/interaction. This knowledge deficit hinder the Navy as it grapples with the complex demands on its forces that are envisioned by multi-domain war.
    a. Curriculums like that which is offered under NPS NSA 688 Strategic Studies should be made more widely available throughout the fleet to generalize the lessons and insights covered in the literature review in Section II.
    b. Recommendation: The Navy should prioritize human capital development to build institutional knowledge and understanding about the complex issues associated with nuclear-conventional integration through continuing education programs generalized for the fleet.
3. The Navy must come up with its own concepts for nuclear-conventional integration and the associated mix of platforms and weapons that will be needed to operationalize these concepts. As previously noted, these concepts cannot be developed in the absence of the intellectual spadework called for in numbers one and two on this page.

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