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The Conventional Force Perspective

NUCLEAR INTEGRATION IN DOCTRINE, CONCEPTS, AND EXERCISES

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In February 2020, Secretary of Defense Mark Esper participated in a mini-exercise involving a limited nuclear exchange with Russia. In the scenario, Russia used a low-yield nuclear strike against a NATO target, and the United States responded with a limited nuclear response. The exercise, part of a regular schedule of wargames, was conducted to help senior defense and military officials become “familiar with the mechanical process of making these decisions and providing the orders back out to the fleet.”¹ However, the exercise had a notable limitation: it was conducted entirely out of U.S. Strategic Command (USSTRATCOM) headquarters in Omaha, Nebraska and not at European command, where the war would be fought. While certainly useful for senior decisionmakers, no brigade combat teams, joint operations, or other large-scale maneuvers were involved. If a similar limited nuclear strike

Banner Image: A B-2 Stealth Bomber leads an aerial flight formation during exercise Valiant Shield. Source: Jordan R. Beesley, U.S. Navy

¹ Marcus Weisgerber, “Esper Plays Nuclear War: Russia Nukes Europe, US Fires Back,” Defense One, February 21, 2020, <https://www.defenseone.com/politics/2020/02/esper-plays-nuclear-war-russia-nukes-europe-us-fires-back/163268/>; and Jon Harper, “U.S. Nukes Russia in Simulation Exercise,” National Defense, <https://www.nationaldefensemagazine.org/articles/2020/2/21/us-nukes-russia-in-simulation-exercise>.

were intended to work in tandem with the conventional force, there would need to be a significant effort to educate, train, and prepare conventional forces for potential nuclear conflict.

Since the end of the Cold War, the integration of nuclear weapons into conventional war planning has faded as nuclear warfighting has been largely siloed off to USSTRATCOM and separated from the rest of the U.S. military. Nuclear weapons have been chiefly considered at the very beginning of a conflict, for deterrence or first strike, or at the very final stages of conflict escalation.²

The Trump administration's recent 2018 Nuclear Posture Review (NPR) made it a priority to "strengthen the integration of nuclear and non-nuclear military planning."³ Conventional nuclear integration (CNI) has caused considerable discussion about whether this will lower or raise the nuclear escalation threshold.⁴ CNI could decrease the likelihood of nuclear use by being more clear about the role of nuclear weapons and focusing on how conventional operations may shape adversary decisions over nuclear use.⁵ On the other hand, CNI could also potentially make nuclear use more likely through inadvertent escalation. The circumstances and extent of CNI can also vary greatly. That said, conventional and nuclear integration may be useful for increasing understanding of the conventional and nuclear divide, outlining the roles and purposes of nuclear weapons and detailing how conventional forces would operate once any nuclear weapons were used.

While there should be continued debate of the normative merits or dangers of CNI, this article focuses on the issue from the perspective of the conventional force and highlights some important steps that would have to be taken if CNI is to work more fully with conventional forces. Specifically, nuclear planning would need to be more clearly present and detailed in high-level military doctrine, concepts, and large-scale exercises. This is no small undertaking, particularly for exercises, and poses many potential risks and trade-offs that merit careful consideration by decisionmakers.⁶ However, the risks of competition and conflict between nuclear armed adversaries are increasing and with that the importance of understanding the nature of conflict along the conventional nuclear interface. If the U.S. military is expected to operate on a nuclear battlefield—or under the threat of nuclear use—thinking in nuclear terms would need to be shared by the conventional force and not be the exclusive purview of USSTRATCOM and the nuclear policy community.

What would detailed conventional nuclear integration in doctrine, concepts, and large-scale exercises look like? Joint concepts inform high-level military doctrine, which in turn provides guidance on what the military should aim to achieve through planning and training in large-scale exercises. If the Department of Defense (DoD) desires to pursue CNI as a policy goal, then nuclear planning would be expected to make an appearance in the following ways:

² Robert Peters Justin Anderson, and Harrison Menke, "Deterrence in the 21st Century: Integrating Nuclear and Conventional Force," *Strategic Studies Quarterly* 12, no. 4 (Winter 2018): 15-43, https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-12_Issue-4/Menke.pdf.

³ Office of the Secretary of Defense, *Nuclear Posture Review* (Washington, DC: Department of Defense (DoD), February 2018), Executive Summary, 4, full report, 21, <https://dod.defense.gov/News/SpecialReports/2018NuclearPostureReview.aspx>.

⁴ Vincent A. Manzo and Aaron R. Miles, "The Logic of Integrating Conventional and Nuclear Planning," Arms Control Association, November 2016, <https://www.armscontrol.org/act/2016-10/features/logic-integrating-conventional-nuclear-planning>; and Al Mauroni, "Tearing Down the Nuclear Firewall," War on the Rocks, October 15, 2019, <https://warontherocks.com/2019/10/tearing-down-the-nuclear-firewall/>.

⁵ Robert Scher, "Statement of Robert Scher Assistant Secretary of Defense for Strategy, Plans, and Capabilities," Senate Armed Services Committee, Subcommittee on Strategic Forces, 114th Cong., 2nd sess., February 9, 2016, 3, https://www.armed-services.senate.gov/imo/media/doc/Scher_02-09-16.pdf.

⁶ Consider the Able Archer 83 exercise discussed later.

- **Doctrine:** Detailed nuclear planning would need to appear in the high-level Joint Chiefs of Staff Joint Publications (JP) 1 capstone and 1-0 through 6-0 keystone doctrine that is read and consumed by the entire force, and not just in subordinate specialty doctrine used chiefly by specialist communities.
- **Concepts:** Consideration of nuclear weapons would also need to appear in the higher-level joint concepts, specifically in those involving major operations and joint access, that inform both future doctrine and exercises, instead of only in supporting concepts.
- **Exercises:** Simulated nuclear operations would be present not only in exercises directed by USSTRATCOM or in narrower exercises focused on training tactics, techniques, and procedures but also in large-scale conventional exercises, often involving multiple services, in the geographic theater of operations.

Doctrine, Concepts, and Exercises

Doctrine, concepts, and exercises shape how military personnel come to understand the nature of conflict and how U.S. forces will fight. This is especially true for the middle level of the officer corps—the ranks of major to colonel—which writes the operational plans and develops military employment options. Doctrine, concepts, and exercises provide guidance and shape expectations for all U.S. forces, conventional and strategic.

This shaping occurs because **doctrine** lays out institutionally-approved lessons of history and prescribes appropriate actions. **Concepts** describe what future conflict might look like and how the U.S. military should prepare. When referring to doctrine and concepts, this article looks at how they are specifically manifested in joint publications doctrine and joint concepts developed by the Chairman of the Joint Chiefs of Staff. **Exercises** give military personnel a day-to-day, hour-to-hour experience of simulated conflict.⁷

The relationship between doctrine, concepts, and exercises is illustrated in Figure 1 below. At the most basic level, concepts propose new approaches to current or future military challenges and can inform more institutionalized and authoritative joint doctrine. Joint doctrine in turn provides the foundation for military education as well as joint training, exercises, and operations.

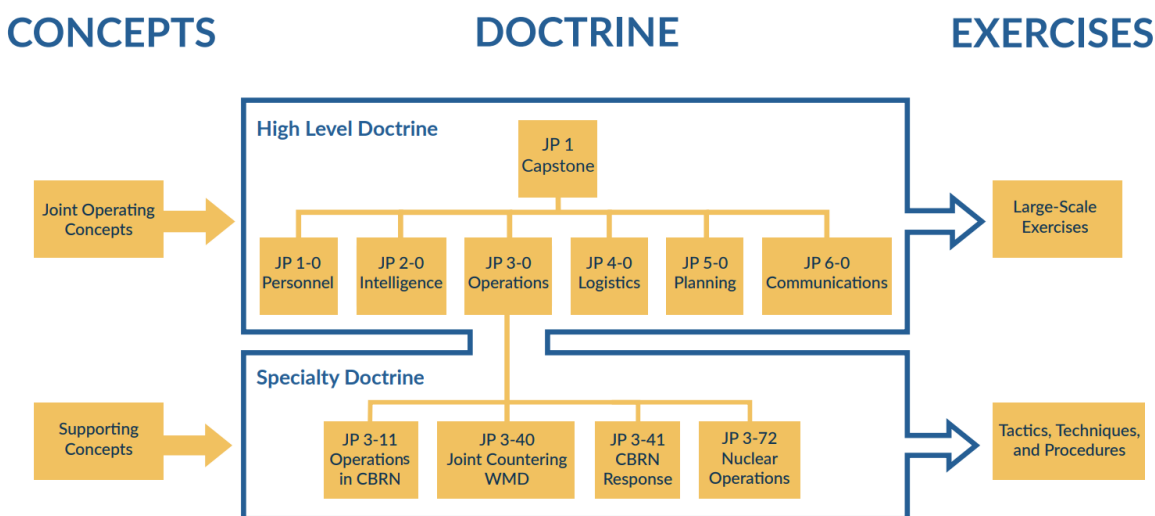


Figure 1: Relationship between doctrine, concepts, and exercises

⁷ For discussion of how a generation of regional conflicts has left the U.S. military poorly positioned to understand great power conflict, see Mark Cancian, *Coping with Surprise in Great Power Conflicts* (Washington, DC: CSIS, 2018), 7-9, <https://www.csis.org/analysis/coping-surprise-great-power-conflicts>.

Further, concepts, doctrine, and exercises can be loosely broken into two levels. At the higher level, joint operating concepts inform joint capstone and keystone doctrine that provides guidance for major combat operations that are further practiced in large-scale exercises. This higher level speaks to the entire military force and not just to one specialty unit or function. At the lower level are supporting concepts, subordinate doctrine, and smaller exercises focused on tactics, techniques, and procedures. These lower-level concepts are largely developed, consumed, and practiced by smaller specialist communities, one of which is strategic forces and the nuclear community.

In order for conventional nuclear integration to be a reality, the fundamentals of nuclear operations will need to be included in the higher-level concepts, doctrine, and exercises in order to be read and practiced by the broader conventional force. It is worthwhile, therefore, to examine more in-depth what doctrine, concepts, and exercises are and to assess the extent to which nuclear weapons have been integrated into the higher levels.



U.S. and South Korean soldiers conduct an after-action review following field artillery training during exercise Foal Eagle 2015 on Warrior Base, New Mexico Range, South Korea, March 15, 2015.

Source: U.S. Department of Defense

Point of Comparison: Missile Defense

To concretely illustrate how a major capability can be integrated into upper-level doctrine, concepts, and exercises, missile defense will be used as a guiding example. Missile defense is a helpful comparison for several reasons, including that it is similarly dominated by a specialist community, has its own Missile Defense Review and subordinate JP 3-01 *Countering Air and Missile Threats* doctrine, and in deployment often carries its own set of escalatory sensitivities.

Like nuclear weapons, missile defense was long considered a niche and strategic capability, but it has now emerged into the mainstream. Although there may be room for improvement, missile defense is well integrated with the conventional force. Geographic combatant commanders are highly familiar with the capability, as evidenced by

their numerous requests for Patriot, Aegis, and THAAD systems.⁸ There are many reasons for this, including a greater number of observations from wartime experience such as the Scud vs. Patriot match during the Gulf War and ongoing tests that provide invaluable experience.⁹ Despite this difference, missile defense can provide a salient example of what better integration looks like.

I. *Doctrine and the Joint Publications*

DoD defines military doctrine as “fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application.”¹⁰ By being “authoritative,” doctrine represents an official institutional perspective that individuals must follow.¹¹ Doctrine drives what the military education system teaches, so all military personnel become familiar with it.¹²

All military services and defense agencies have their own sets of doctrine. The broadest and most influential is joint doctrine, which covers activities that affect more than one service and describes in comprehensive terms how U.S. forces will fight. Several dozen joint publications lay out joint doctrine. Joint doctrine is organized hierarchically. At the top is Joint Publication 1 (JP 1), *Doctrine of the Armed Forces of the United States*, described as the capstone document that imparts a view of conflict in its broadest terms. Below that are six joint publications, described as keystone documents, that cover broad warfighting functions. For example, JP 3-0 *Joint Operations* covers military operations in general, and JP 5-0 *Joint Planning* covers the planning process. Below these broad doctrinal publications are subordinate publications that cover specialty topics. For example, below JP 3-0 *Joint Operations* are over 50 subordinate doctrinal publications such as JP 3-24 *Counterinsurgency*, JP 3-30 *Joint Air Operations*, and JP 3-34 *Joint Engineer Operations*.

The military services and the Joint Staff have elaborate processes for developing doctrine. For joint doctrine, the Joint Staff Directorate for Joint Force Development (J -7) coordinates the process. Ideas for changes or new doctrine arise from operational lessons learned, changes to national policies, or novel technologies. An elaborate staffing

⁸ Joanne Stocker, “US to deploy additional troops, Patriot batteries and THAAD system to Saudi Arabia,” *The Defense Post*, <https://www.thedefensepost.com/2019/10/11/us-troops-patriot-thaad-saudi-arabia/>; and Seth Frantzman, “US troops in Iraq finally get Patriot air defense,” *Jerusalem Post*, March 31, 2020, <https://www.jpost.com/israel-news/us-troops-in-israel-finally-get-patriot-air-defense-623026>; Aaron Mehta, “INDOPACOM head wants Aegis Ashore in Guam by 2026,” *Defense News*, July 22, 2020, <https://www.defensenews.com/global/asia-pacific/2020/07/22/indopacom-head-wants-aegis-ashore-in-guam-by-2026/>; and John Vandiver, “THAAD anti-missile system to deploy to Romania,” *Stars and Stripes*, April 11, 2019, <https://www.stripes.com/news/thaad-anti-missile-system-to-deploy-to-romania-1.576547>.

⁹ Missile Defense Project, “Patriot,” *Missile Threat*, CSIS, June 14, 2018, last modified November 4, 2019, <https://missilethreat.csis.org/system/patriot/>; Government Accountability Office (GAO), *Operation Desert Storm: Data Does Not Exist to Conclusively Say How Well Patriot Performed* (Washington DC: GAO, 1992), <http://gao.gov/assets/220/216867.pdf>; Missile Defense Project, “Aegis Ballistic Missile Defense,” *Missile Threat*, CSIS, June 14, 2018, last modified June 15, 2018, <https://missilethreat.csis.org/system/aegis/>.

¹⁰ DoD, *DOD Dictionary of Military and Associated Terms* (Washington, DC: June 2020), <https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/dictionary.pdf>.

¹¹ There has been a long-standing debate in the military about whether doctrine should be “prescriptive” or “descriptive,” that is, whether it should direct action or merely describe past lessons learned for adaptation in the present. The Army has traditionally leaned toward the former, whereas the Navy and Marine Corps have leaned toward the latter. The current phrasing represents a compromise.

¹² David A. Sawyer, “The Joint Doctrine Development System,” *Joint Forces Quarterly* 4 (Winter 1996-97): 36-39, https://jnsllp.com/wp-content/uploads/2010/08/12_Young.pdf.

process ensures that all stakeholders have their say and that the new or changed doctrine is consistent with other doctrinal elements.¹³

Nuclear Operations In Joint Publications

The divide between nuclear and conventional is notable in the joint publication series, where nuclear planning is largely absent from higher-level doctrine in the JP 1 capstone and JP 1-0 through JP 6-0 keystone documents.

The JP 1 *Doctrine for the Armed Forces of the United States* does not address nuclear weapons in any major depth. There is only a note that nuclear weapons are an exception to command and control, since they follow a distinct nuclear command and control (NC2) chain originating in the president and connected to the chairman of the Joint Chiefs of Staff and secretary of defense, before travelling down “to the nuclear CCDRs and nuclear execution forces.”¹⁴ Beyond this, there is little guidance on how nuclear forces should be considered within the levels of war or escalation, despite the purpose of JP 1 as providing “overarching guidance and fundamental principles for the employment of the Armed Forces of the United States.”¹⁵

In JP 3-0 *Joint Operations*, the largest of the keystone documents, nuclear weapons are only briefly referenced in the context of friendly deployment, stating that “when directed by the President and SecDef, CCDRs will plan for the employment of nuclear weapons by US forces in a manner consistent with national policy and strategic guidance” and that “USSTRATCOM’s capabilities to lead in the collaborative planning of all nuclear missions are available to support nuclear weapon employment.”¹⁶ Further discussion is included as part of weapons of mass destruction (WMD) and as part of chemical, biological, radiological, and nuclear weapons (CBRN), but the emphasis here is largely on force protection in the context of adversary deployment, and only the above is offered on potential U.S. nuclear use.

JP 5-0 *Joint Planning* does contain a specific note on planning nuclear strike options, specifically that “commanders must assess the military as well as the strategic impact a nuclear strike would have on conventional operations.” However, JP 5-0 similarly puts much of the onus for this planning on USSTRATCOM as the “lead organization for nuclear planning and coordination” that also ensures “optimal integration of US nuclear and conventional forces prior to, during, and after conflict.”¹⁷

In terms of high-level military doctrine used by the conventional forces to conduct operations, there is little direct guidance on nuclear weapons or how nuclear weapons might fundamentally alter traditional concepts of war. Indeed, the tone and orientation of these documents envisions entirely conventional military operations. In the few

¹³ Joint Staff, *Joint Doctrine Development Process*, CJCSM 5120.01A (Washington, DC: Department of Defense, December 2014), and “Joint Doctrine Development System,” Chairman of the Joint Chiefs of Staff, CJCSI 5120.02D, January 5, 2015, A-6, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/cjcsi5120_02d.pdf.

¹⁴ DoD, *JP 1 Doctrine for the Armed Forces of the United States* (Washington, DC: July 2017), IV 14, V-20, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp1_ch1.pdf.

¹⁵ *Ibid.*, I-1.

¹⁶ DoD, *JP 3-0: Joint Operations* (Washington, DC: October 2018), CH1, JP 3-0, VIII-23-24, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_0ch1.pdf?ver=2018-11-27-160457-910.

¹⁷ DoD, *JP 5-0: Joint Planning* (Washington, DC: June 2017), V-56-7, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp5_0_20171606.pdf.

passing mentions of nuclear weapons, the high-level documents are quick to relegate planning and consideration to USSTRATCOM.

While nuclear operational doctrine is delineated in the JP series, specifically in subordinate doctrines JP 3-11, JP 3-40, JP 3-41, and JP 3-72, these documents represent a small fraction of joint doctrine (as illustrated in Figure 2) and are used primarily by specialist communities rather than the conventional force writ large.

JP 3-11, 3-40, and 3-41 have doctrine on various aspects of nuclear weapons, again often as part of a broader group of WMD or CBRN. For example, JP 3-40 *Countering Weapons of Mass Destruction* describes in depth non-proliferation efforts and potential effects of CBRN.¹⁸ In turn, JP 3-41 *Chemical, Biological, Radiological, and Nuclear Response* provides extensive guidance on nuclear weapons but focuses mostly on responding to a CBRN attack, force protection, the role of civilian responders, and, in general, minimizing the effects of a CBRN incident.¹⁹ JP 3-11 *Operations in Chemical, Biological, Radiological, and Nuclear Environments* goes further and provides guidance on how U.S. forces should continue to operate and be effective in an environment where nuclear weapons are threatened or used.²⁰ However, the focus is more on how to continue operating in such an environment, rather than providing guidance on the use of nuclear weapons in coordination with conventional forces.²¹

JP 3-72 *Nuclear Operations* contains the most extensive guidance for integrating nuclear and conventional forces. JP 3-72 was publicly released in June 2019 for a week before being shifted to the more restricted Joint Electronic Library.²² It is unclear exactly why it was switched to official use only after a public release, although there is a note on the Joint Staff website that it is under maintenance. JP 3-72 is the latest in a history of JP publications on nuclear operations dating back to the beginning of the JP series in the early-1990s.²³ Steven Aftergood noted that while JP 3-72 clearly plans for warfighting, it provides a “mostly familiar overview of nuclear strategy, force structure, planning, targeting, command and control, and operations.”²⁴

For the purpose of CNI, while *Nuclear Operations* doctrine does elaborate on the integration of conventional and nuclear forces, the explanation is isolated in a subordinate, specialty doctrine and is not present in the keystone 3-0 or higher documents. This placement largely limits its regular consumption to nuclear specialist communities.

¹⁸ DoD, JP 3-40: *Countering Weapons of Mass Destruction* (Washington, DC: November 2019), I-7, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_40.pdf?ver=2020-04-09-140128-347.

¹⁹ DoD, JP 3-41: *Chemical, Biological, radiological, and Nuclear Response* (Washington, DC: September 2016), I-1, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_41.pdf.

²⁰ DoD, JP 3-11: *Operations in Chemical, Biological, Radiological, and Nuclear Environments* (Washington, DC: October 2018), I-2, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_11.pdf?ver=2018-12-07-091639-697.

²¹ *Ibid.*, II-14.

²² While copies of 3-72 remain available online, it is officially only available through the restricted Joint Electronic Library, where there is a note that it is in maintenance, “Joint Doctrine Hierarchy Chart,” <https://www.jcs.mil/Doctrine/Hierarchy-Chart/>; and “The Joint Chiefs of Staff published, then quickly deleted, its new nuclear doctrine,” Task and Purpose, June 21, 2019, <https://taskandpurpose.com/news/joint-chiefs-of-staff-published-then-deleted-new-nuclear-doctrine>.

²³ See JP 3-12: *Joint Nuclear Operations*, 2005; JP 3-12.1: *Joint Theater Nuclear Operations*, 1996; JP 3-12: *Joint Nuclear Operations*, 1995; and JP 3-12: *Joint Nuclear Operations*, 1993.

²⁴ Steven Aftergood, “DoD Doctrine on Nuclear Operations Published, Taken Offline,” Federation of American Scientists, June 19, 2019, <https://fas.org/blogs/secrecy/2019/06/nuclear-operations>; and Julian Borger, “Nuclear weapons: experts alarmed by new Pentagon ‘war-fighting’ doctrine,” *The Guardian*, June 19, 2019, <https://www.theguardian.com/world/2019/jun/19/nuclear-weapons-pentagon-us-military-doctrine>.

JP 3-72 delineates the responsibilities between geographic combatant commanders (CCDR) and USSTRATCOM, which is most relevant for CNI. Specifically, 3-72 calls for geographic combatant commands to integrate nuclear planning early in the planning process to provide the president with options, nominate targets



Figure 2: Hierarchy of Joint Publications

for nuclear weapons, and integrate them within the overall scheme of fires.²⁵ In the event of a battlefield with a nuclear element, 3-72 prescribes the geographic combatant commander's responsibility over conventional forces and some nonstrategic forces (such as dual-capable aircraft), while giving USSTRATCOM control over all strategic forces.²⁶ Finally, since geographic combatant commanders may not have the internal ability to nominate and plan for nuclear targets, JP 3-72 allows them to rely on other external agencies for assistance, including USSTRATCOM.²⁷ While JP 3-72 provides significant guidance on integrating nuclear and conventional forces, much of the emphasis remains on USSTRATCOM in both controlling nuclear forces and assisting with plans and targeting. JP 3-11, 3-40, 3-41, and 3-72 provide the core of U.S. nuclear doctrine for the joint force. However, they still represent a small fraction of doctrine publications that is not widely consumed outside their specialty community and have not migrated upwards into the high-level capstone and keystone doctrine that sets expectations for the broader conventional force.

Missile Defense in Joint Publications Doctrine

Missile defense serves as a helpful contrasting example for how a major class of weapons can be given more extensive treatment in higher-level doctrine.²⁸ The role of missile defense in the joint force has received extended consideration in the keystone doctrine, although discussion in the JP 1 capstone is limited.²⁹

For example, JP 3-0 has a dedicated section on "Integrating Air and Missile Defense" in the context of a discussion of fires and countering air and missile threats, maintaining that the threats of missiles and long-range aircraft "require integration of defensive capabilities from both within and beyond a GCC's [Geographic Combatant Command] AOR. The GCC integrates air and missile defense capabilities and activities within the theater."³⁰ JP 3-0 also notes that STRATCOM is the coordinating authority for global missile defense in coordination with other CDDRs and that the "intended result is integration of OCA [offensive counterair] attack operations, DCA [defensive counterair] operations, and other capabilities as required to create the JFC's desired effects."³¹

Also, under a broader section on force protection, JP 3-0 outlines the Joint Functional Commander (JFC) mission that includes missile defense and further provides an in-depth explanation for the distinctions between various forms of defensive counterair (DCA), including active and passive air and missile defense, as well as global missile defense. JP 3-0 highlights that the integration of these systems will allow defense-in-depth and that it is one of the factors that commanders should consider when assuming responsibility for an operational area.³² Although missile defense receives less treatment in JP 5-0 *Joint Planning*, it does use CENTCOM's deployment of theater missile defense in the Gulf War as an illustrating example of friendly force protection and further stipulates the role of USSTRATCOM and other CDDRs in developing global missile defense force requirements.³³

²⁵ DoD, *JP 3-72 Nuclear Operations* (Washington, DC: 2019), III-3, JP 3-72, V-3, https://fas.org/irp/doddir/dod/jp3_72.pdf.

²⁶ *Ibid.*, IV-3-4.

²⁷ This includes the United States Army Nuclear and Countering Weapons of Mass Destruction Agency's (USANCA's) nuclear employment augmentation teams (NEATs), the Defense Threat Reduction Agency (DTRA), and USSTRATCOM. *Ibid.*, V-1.

²⁸ For missile defense, this is JP 3-01 Countering Air and Missile Threats.

²⁹ JP 1, III-10.

³⁰ DoD, JP 3-0, III-33.

³¹ *Ibid.*, III-33.

³² *Ibid.*, III-42, IV-12.

³³ DoD, JP 5-0, E-4.

Unlike nuclear weapons, which were only lightly touched on in keystone doctrine, missile defense was given a clear priority with direction for geographic and functional commanders to integrate the system into a wider defensive architecture. Similarly, a more extensive discussion of nuclear operations in the higher-level JP keystone doctrine, particularly JP 3-0, would provide greater exposure of nuclear doctrine to the conventional force and enable closer integration.

II. Joint Concepts

Concepts are important because they describe how the military services are thinking about future conflict. As a result, they drive the development of future capabilities, including equipment and force structure, and signal where future doctrine may go. Joint publications describe concepts this way:

There is a close and complementary relationship between concepts and doctrine. Fundamentally, concepts support joint force development where development of capabilities is required to meet national strategic goals, whereas joint doctrine considers extant capabilities for joint force employment. Joint doctrine is authoritative, describes operations with extant capabilities, and is subject to policy, treaty, and legal constraints. By comparison, concepts are not authoritative, and are unproven ideas that should be rigorously tested. In general terms, a concept contains a notion or statement that expresses how something might be done.³⁴

In practice, concepts look a lot like doctrine. They are captured in formal documents and express an official view about the nature of conflict. In effect, they are draft doctrine awaiting more information before becoming official doctrine.³⁵

Currently, the Joint Staff has about 20 active concepts. Two key concepts are the *Joint Operational Access Concept*, which describes “how joint forces will operate in response to anti-access and area-denial security challenges,” and the *Major Combat Operations Joint Operating Concept*, which describes “how the future joint force intends to conduct combat operations in support of national military objectives.”³⁶

Concepts have a hierarchy just as doctrine does. At the top are “joint operating concepts” and below that are “supporting concepts.” The process for changing concepts or proposing new ones is similar to that for doctrine.

Nuclear Operations in Joint Concepts

Concepts of conventional and nuclear warfare have the same challenges as military doctrine. Within the hierarchy of concepts, concepts involving nuclear weapons use or response exist but are found among supporting concepts

³⁴ “Joint Doctrine Development System,” Chairman of the Joint Chiefs of Staff, CJCSI 5120.02D, January 5, 2015, A-6, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/cjcsi5120_02d.pdf.

³⁵ “Joint Concepts,” Joint Chiefs of Staff, <https://www.jcs.mil/Doctrine/Joint-Concepts/Joint-Concepts/>.

³⁶ DoD, *Joint Operational Access Concept* (Washington, DC: January 17, 2012), https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joac_2012.pdf?ver=2017-12-28-162010-227; and DoD, *Major Combat Operations Joint Operating Concept* (Washington, DC: December 2006), https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joc_combatops.pdf?ver=2017-12-28-162012-383_.

and not among the higher joint operating concepts that link strategic guidance with future military operations. In addition, the joint concepts have the additional problem that many of them have not been recently updated.

The two most relevant high-level joint concepts, *Major Combat Operations Joint Operating Concept* and *Joint Operational Access Concept*, lack extensive discussion of how nuclear weapons might be integrated into joint operations. Among the few references to nuclear weapons in *Major Combat Operations* (published in 2006), most focus on the importance of distinguishing the adversary's military from broader society to prevent the development of an insurgency or a potential escalation to the nuclear threshold.³⁷ Other references, such as using special forces to quickly track and remove nuclear weapons in conflict, envision a rogue state with few nuclear weapons, rather than a potential great power conflict with a nuclear state.³⁸

The *Joint Operational Access Concept* from 2012 contains even less guidance on nuclear weapons usage, only noting that national policy may restrict certain strikes on an adversary if they possess nuclear weapons.³⁹ Although nuclear weapons are naturally present in the 2006 *Deterrence Operations Joint Operating Concept*, including a call to improve “our capability to integrate nuclear and non-nuclear strike operations,” there is again little guidance on how nuclear strike would work in tandem with conventional forces.⁴⁰

The primary concept related to nuclear operations is the *Joint Integrating Concept for Combating Weapons of Mass Destruction*, a supporting concept released in 2007. The stated purpose of this doctrine was “future operations to combat WMD development, proliferation, acquisition and employment,” with much of its guidance on rogue behavior by states and non-state actors.⁴¹ While still relevant for some scenarios involving nuclear weapons, it does not emphasize the singular conditions associated with major power actors such as Russia or China.

If nuclear integration with conventional forces is desired, updated concepts will need to be developed on how adding a nuclear element changes the nature of conflict and how this may require U.S. forces to adapt their mode of operation.

Again, if nuclear integration with conventional forces is desired, updated concepts will need to be developed on how adding a nuclear element changes the nature of conflict and how this may require U.S. forces to adapt their mode of operations. For these concepts to reach the broader conventional force, they will also need to be present in the higher-level joint concepts and not only in supporting concepts.

Missile Defense in Joint Concepts

Again, missile defense provides a useful illustration of how a capability becomes manifest within the higher-level joint concepts. In the *Major Combat Operations Joint Concept*, missile defense is explicitly referenced in a broader

³⁷ Ibid., 12.

³⁸ Ibid., 48.

³⁹ DoD, *Joint Operational Access Concept*, 38.

⁴⁰ DoD, *Deterrence Operations Joint Operating Concept* (Washington DC: December 2006), 40, https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joc_deterrence.pdf?ver=2017-12-28-162015-337.

⁴¹ DoD, *Joint Integrating Concept for Combating Weapons of Mass Destruction* (Washington, DC: December 2007), 1, https://www.bits.de/NRANEU/docs/cwmd_jic_v1.pdf.

section on using global capabilities when operating in foreign territory, where the JFC plays a linking role between inter-theater and intra-theater force protection. In addition, the concept affirms that combatant commands provide “integrated missile defense” to support the JFC’s attempt to gain access and operate in a campaign.⁴² Other references within the concept outline missile defense as part of the improvement in force protection and include a detailed discussion of a joint missile defense grid as incorporated in a “multilayered defense architecture.”⁴³

Further, the *Joint Operational Access* concept explicitly discusses missile defense, noting its role under a broader discussion of force protection, and that “of growing concern to future joint forces will be missile defense and defense against sabotage.”⁴⁴

Although still dated by over a decade, the joint concepts contain significant discussion of missile defense as a major component of force protection and the role of geographic and functional commanders in incorporating the defensive system. This discussion provides a picture of what greater detail and guidance in higher-level joint concepts could potentially look like for future integration of nuclear and conventional forces.

III. *Large-scale Exercises*

DoD defines an exercise as “a military maneuver or simulated wartime operation involving planning, preparation, and execution that is carried out for the purpose of training and evaluation.”⁴⁵ Military units are always conducting training and exercises, from the lowest levels to the highest. Lower-level exercises typically focus on what the military terms tactics, techniques, and procedures—the narrow technical skills needed for a unit to do its assigned function. Large exercises, because they simulate so many warfighting functions, teach participants what to expect in future conflicts.

The largest exercises involve multiple services, allies, and partners and involve thousands of troops over several days of operations. The combatant commanders typically drive these large exercises. Because of the sizeable resources involved, a high-level and elaborate process led by the Joint Staff approves them often years in advance. The process begins with the identification of objectives to be accomplished. These objectives come from established joint mission lists. Some exercises require approval by the secretary of defense and, when involving allies and partners, the National Security Council. These multinational exercises are important, not just because of the size but also because they engage high-level staffs with hundreds of senior officers.⁴⁶

Senior service leaders drive large-scale service-specific exercises. These exercises, typically repeated many times per year, train large units for future combat operations. These exercises are important because cumulatively they engage so many personnel.

⁴² DoD, Major Combat Operations, 26.

⁴³ Ibid., 29, 58.

⁴⁴ DoD, Joint Access Concept, 26-27, 31.

⁴⁵ Department of Defense, *DOD Dictionary of Military and Associated Terms* (Washington, DC: June 2020), <https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/dictionary.pdf>.

⁴⁶ Chairman of the Joint Chiefs of Staff, *Joint Training Manual for the Armed Forces of the United States* (Washington, DC: April 2015), CJCSM 3500.03E, https://www.jcs.mil/Portals/36/Documents/Doctrine/training/cjcs3500_03e%20.pdf?ver=2017-12-29-171247-397_.

Nuclear and Conventional Large-scale Exercises

If nuclear and conventional integration is to be actualized, there will need to be greater integration into large-scale exercises, which are particularly important for training staffs and organizations, especially the mid-level officers from colonel to major, in exercising command and control at the operational level.⁴⁷ Ideally, these exercises would involve multiple services in the geographic theater of operations, as well as potentially allied and partner states.

While there have been a few large-scale exercises involving nuclear weapons in conjunction with conventional forces, these remain comparatively rare. When nuclear weapons are involved, they usually focus on tactics, techniques, and procedures rather than large-scale conventional combat operations.

For example, the United States leads an annual nuclear NATO exercise, “Steadfast Noon,” in Europe. This highly secretive

exercise involves various nuclear planning scenarios and recently included the transportation of non-strategic B-61 nuclear gravity bombs with allied aircraft that joined from the Netherlands and Germany.⁴⁸ While these exercises are useful in training units and strengthening NATO’s nuclear deterrent, they do not involve the larger conventional forces in maneuvers that would be relevant during a potential nuclear exchange. Practicing these maneuvers is critical for setting expectations for conventional staff and officers outside of strategic nuclear forces.

USSTRATCOM does have a few large-scale exercises to test its global capabilities, including nuclear responses. This includes the annual Global Thunder and Global Lightning exercises, which often involve other geographic combatant commands. For example, Global Lightning 2019 involved support for EUCOM through a battle staff and command and control exercise that was also linked with EUCOM’s Austere Challenge exercise and NORTHCOM’s



An F-35A Lightning II with the F-35 demonstration team takes a training flight near Hill Air Force Base, Utah, Jan. 7, 2020.

Source: Air Force Staff Sgt. Jarrod Vickers, U.S. Department of Defense

⁴⁷ Tom Greenwood and Owen Daniels, “The Pentagon Should Train for – And Not Just Talk About – Great-Power Competition,” *War on the Rocks*, May 8, 2020, <https://warontherocks.com/2020/05/the-pentagon-should-train-for-and-not-just-talk-about-great-power-competition/>; and Elisabeth Braw, “NATO Needs More Big Exercises, Too,” *Defense One*, June 14, 2018, <https://www.defenseone.com/ideas/2018/06/nato-needs-more-big-exercises-too/148980/>.

⁴⁸ Tom O’Connor, “U.S., Russia and Europe Hold Back-to-Back Nuclear War Games Across the Globe,” *Newsweek*, October 18, 2019, <https://www.newsweek.com/us-russia-europe-nuclear-war-games-1466380>; “NATO Nuclear Exercise Underway With Czech and Polish Participation,” *Federation of American Scientists*, October 17, 2017, <https://fas.org/blogs/security/2017/10/steadfast-noon-exercise/>; and Julian Barnes, “NATO Launches its Main Nuclear Drill, Showcasing Its Defenses,” *Wall Street Journal*, October 16, 2017, <https://www.wsj.com/articles/nato-launches-its-main-nuclear-drill-showcasing-its-defenses-1508155670>.

Vigilant Shield exercise.⁴⁹ These exercises may provide a model for greater integration between nuclear and conventional forces.

Outside of these, there are few examples of a nuclear component as part of the largest conventional exercises, exercises that often involve tens of thousands of troops such as Trident Juncture, Defender Europe, or the previous Foal Eagle and Key Resolve in Korea.⁵⁰ The involvement of a nuclear element in these exercises designed to replicate major combat operations would be the next step toward integration with conventional forces. In addition, exercises with a nuclear element initiated and directed by the respective geographic combatant CDRs, as opposed to those led by USSTRATCOM, would be an additional next step toward further integration.

Missile Defense and Large-scale Exercises

While there is likely room to improve missile defense integration with the joint force, they do make an appearance in more traditional large-scale conventional exercises. A significant example is one of the last annual Foal Eagle exercises in South Korea, which incorporated a THAAD anti-missile battery drill.⁵¹ Foal Eagle and Key Resolve were, until recently, some of the largest multinational joint service exercises the United States conducted on an annual basis in some form since the end of the Cold War.

There have also been a number of separate missile defense exercises in the European theater. For example, in Saber Guardian in 2019, several Patriots missiles were fired over the Black Sea, and several NATO Aegis destroyers participated in the air and missile defense biennial exercise Formidable Shield.⁵² In the Middle East, Juniper Cobra represents another significant missile defense exercise, with Patriot batteries participating in conjunction with Israeli conventional forces.⁵³

However, there are limits to comparing the presence of missile defense in exercises with nuclear weapons. More extensive integration of nuclear weapons in large conventional exercises can be diplomatically sensitive and present real risks of inadvertent escalation. The nearly disastrous Able Archer exercise in 1983, which almost

⁴⁹ Hans M. Kristensen and Matt Korda, "United States nuclear forces, 2020," *Bulletin of the Atomic Scientists* 76, no. 1 (2020): 50, <https://www.tandfonline.com/doi/pdf/10.1080/00963402.2019.1701286>.

⁵⁰ Tyler Rogoway, "U.S. Army To Execute Its Most Massive European Deployment Exercise In 25 Years," *The Drive*, October 7, 2019, <https://www.thedrive.com/the-war-zone/30211/u-s-army-to-execute-its-most-massive-european-deployment-exercise-in-25-years>; Megan Friedl, "U.S. Joins NATO's Trident Juncture Exercise," *Department of Defense*, October 18, 2019, <https://www.defense.gov/Explore/News/Article/Article/1666272/us-joins-natos-trident-juncture-exercise/>; Thomas Maresca, "U.S., South Korea begin joint military exercises as tensions thaw on Korean Peninsula," *USA Today*, April 1, 2018, <https://www.usatoday.com/story/news/world/2018/04/01/united-states-south-korea-joint-military-training-foal-eagle-key-resolve/476503002/>; and Franz-Stefan Gady, "Deterring Pyongyang: US, South Korea Conclude Military Exercise," *The Diplomat*, March 18, 2017, <https://thediplomat.com/2017/03/deterring-pyongyang-us-south-korea-conclude-military-exercise/>.

⁵¹ Gady, "Deterring Pyongyang"; Maresca, "U.S., South Korea begin joint military exercises as tensions thaw on Korean Peninsula"; and "U.S., South Korea Launch Annual Foal Eagle Exercise," *Department of Defense*, March 3, 2017, <https://www.defense.gov/Explore/News/Article/Article/1102331/us-south-korea-launch-annual-foal-eagle-exercise/>.

⁵² Martin Egnash, "US, Romania fire missiles over Black Sea in air defense exercise," *Stars and Stripes*, June 20, 2019, <https://www.stripes.com/news/europe/us-romania-fire-missiles-over-black-sea-in-air-defense-exercise-1.586836>; Daniella Candurra, "NATO Conducts Formidable Shield Air and Missile Defense Exercise," *Missile Threat*, CSIS, May 23, 2019, last modified May 23, 2019, <https://missilethreat.csis.org/nato-conducts-formidable-shield-air-and-missile-defense-exercise/>; and "Major air and missile defence exercise starts off Scotland," *NATO*, September 24, 2017, https://www.nato.int/cps/en/natohq/news_147113.htm.

⁵³ Judah Ari Gross, "IDF, US military launch Juniper Cobra air defense drill, despite virus fears," *Times of Israel*, March 3, 2020, <https://www.timesofisrael.com/idf-us-military-launch-juniper-cobra-air-defense-drill-despite-virus-fears/>

sparked a nuclear war with the Soviet Union, serves as a cautionary tale for future attempts to create more realism with large-scale exercises involving nuclear weapons.⁵⁴ Therefore, there will need to be some compromises to realism in large-scale exercises involving nuclear weapons.

Speaking to the Conventional Force: Concluding Lessons for Integration

What does successful integration look like from the perspective of the conventional force? From this review of doctrine, concepts, and exercises, four primary themes emerge regarding how a major capability such as nuclear weapons might be better integrated into the conventional force.

- **Detailed discussion in high-level joint publications doctrine.** What would nuclear operations look like? How would they change the nature of conflict? And how would they affect maneuvers, dispersion of forces, targeting, and integration into a system of fires? These considerations would need to be present in the high-level JP capstone and keystone doctrine. While the subordinate JP documents on nuclear operations remain important, their insights on how nuclear operations change an otherwise conventional conflict need to migrate up to the capstone- and keystone-level doctrine to be more widely consumed by the officer corps and organizational staff of nonstrategic forces.
- **Explicit mention in higher-level joint concepts describing major combat operations.** Similar to doctrine, a dedicated discussion for how nuclear weapons might alter the nature of conflict and operations would need to be included within the higher-level joint concepts to be envisioned by the broader conventional force.
- **Significant presence in large-scale exercises simulating major combat operations.** While it is helpful for USSTRATCOM to have nuclear wargames, further introduction to the wider force in the geographic combatant commands would help drive thinking in the officer corps. However, prioritizing greater conventional nuclear integration leads to trade-offs from other focus areas, which is important to consider when weighing the value of further integration. Nuclear weapons operations could also be incorporated in the major service training center exercises within the United States, and more tabletops and wargames with middle-level officers and organizational staff could also help familiarize conventional forces with nuclear operations.
- **Greater involvement of geographic combatant commands.** Geographic combatant commands would need to assume a greater role in planning and driving exercises that incorporate a nuclear element. Robert Peters, Justin Anderson, and Harrison Menke also emphasize this point, that there is a the need for geographic combatant and functional commanders to do more planning involving nuclear weapons, and not shift the bulk of the thinking over to USSTRATCOM.⁵⁵

This is not a complete view of all aspects of successful conventional nuclear integration. For example, this article does not touch on the role of professional military education, which represents another major opportunity for integrating nuclear thinking into the officer corps. Nor is this an argument in favor of greater integration in all its aspects. There are many reasons why the United States should be cautious about too closely integrating its

⁵⁴ "Exercise ABLE ARCHER 83: Information from SHAPE Historical Files," NATO, March 28, 2013,

<https://nsarchive2.gwu.edu/NSAEBB/NSAEBB427/docs/6.a.%20Exercise%20Able%20Archer%20SHAPE%20March%202013%20NATO.pdf>; and Benjamin Fischer, "A Cold War Conundrum: The 1983 Soviet War Scare," Central Intelligence Agency, <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/a-cold-war-conundrum/source.htm#HEADING1-13>.

⁵⁵ Peters, Anderson, and Menke, "Deterrence in the 21st Century," 34.

strategic and nonstrategic forces, as the Able Archer 83 exercise indicates. That said, it is useful to outline exactly what CNI would entail for the conventional force to help inform decisionmakers of its potential value or consequences beforehand.

Doctrine, concepts, and exercise can help clarify the roles and purposes of nuclear weapons and how the conventional force might operate alongside them. Clarifying these roles and purposes does not constitute a return to nuclear warfighting. Instead, it recognizes that a siloed approach, by failing to engage these processes along the conventional and nuclear divide, might bring more risk of inadvertent escalation than its firewalling prevents.

From the perspective of the conventional force, doctrine, concepts, and exercises play a major role in shaping expectations and training officers for future combat. If CNI is to remain a policy goal, nuclear operations and planning would need to be given significant presence in each of these three aspects of planning for U.S. forces to be expected to perform effectively on a battlefield with a nuclear element.

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