# DCH Card + Selected Ev from Previous Work

### Definition: “Nuclear Stockpile”—Includes Deployed Weapons / Hedge, Excludes Dismantled

#### The stockpile includes both deployed and stored weapons (the “hedge”), and is distinct from weapons awaiting dismantlement

Kristensen & Korda ’23 [Hans M. Kristensen, Director, Nuclear Information Project, Federation of American Scientists, and Matt Korda, Senior Research Associate, Nuclear Information Project, Federation of American Scientists, “Nuclear Notebook: United States nuclear weapons, 2023,” BULLETIN OF THE ATOMIC SCIENTISTS, 1—16—23, <https://thebulletin.org/premium/2023-01/nuclear-notebook-united-states-nuclear-weapons-2023>, accessed 6-2-23]

At the beginning of 2023, the US Department of Defense maintained an estimated stockpile of approximately 3,708 nuclear warheads for delivery by ballistic missiles and aircraft. Most of the warheads in the stockpile are not deployed but rather stored for potential upload onto missiles and aircraft as necessary. We estimate that approximately 1,770 warheads are currently deployed, of which roughly 1,370 strategic warheads are deployed on ballistic missiles and another 300 at strategic bomber bases in the United States. An additional 100 tactical bombs are deployed at air bases in Europe. The remaining warheads — approximately 1,938 — are in storage as a so-called hedge against technical or geopolitical surprises. Several hundred of those warheads are scheduled to be retired before 2030. (See Table 1.)

In addition to the warheads in the Department of Defense stockpile, approximately 1,536 retired — but still intact — warheads are stored under the custody of the Department of Energy and are awaiting dismantlement, giving a total US inventory of an estimated 5,244 warheads. Between 2010 and 2018, the US government publicly disclosed the size of the nuclear weapons stockpile; however, in 2019 and 2020, the Trump administration rejected requests from the Federation of American Scientists to declassify the latest stockpile numbers (Aftergood 2019; Kristensen 2019a, 2020d). In 2021, the Biden administration restored the United States’ previous transparency levels by declassifying both numbers for the entire history of the US nuclear arsenal until September 2020 — including the missing years of the Trump administration. This effort revealed that the United States’ nuclear stockpile consisted of 3,750 warheads in September 2020 — only 72 warheads fewer than the last number made available in September 2017 before the Trump administration reduced the US government’s transparency efforts (US State Department 2021a). We estimate that the stockpile will continue to decline over the next decade-and-a-half as modernization programs consolidate the remaining warheads.

#### Above

U.S. Department of State ’15 [Under Secretary for Arms Control and International Security, Bureau of International Security and Nonproliferation (ISN), Nuclear Nonproliferation Treaty, 2015 Review Conference, “Transparency in the U.S. Nuclear Weapons Stockpile,” 2015, <https://2009-2017.state.gov/t/isn/npt/statements/241165.htm>, accessed 6-2-23]

The United States is releasing newly declassified information on the U.S. nuclear weapons stockpile to update the information released in April 2014. Increasing the transparency of global nuclear stockpiles is important to nonproliferation efforts, including commitments under the Nuclear Non-Proliferation Treaty, and the pursuit of further reductions that cover all nuclear weapons: deployed and non-deployed, strategic and non-strategic.

Stockpile. As of September 2014, the U.S. stockpile of nuclear warheads consisted of 4,717 warheads. This number represents an 85 percent reduction in the stockpile from its maximum (31,255) at the end of fiscal year 1967, and a 78 percent reduction from its level (22,217) when the Berlin Wall fell in late 1989. The below figure shows the U.S. nuclear stockpile from 1945 through September 30, 2014.

Warhead Dismantlement. From fiscal years 1994 through 2014, the United States dismantled 10,251 nuclear warheads. Since September 30, 2013, the United States has dismantled 299 nuclear warheads. Approximately 2,500 additional nuclear warheads are currently retired and awaiting dismantlement.

Non-Strategic Nuclear Weapons. The number of U.S. non-strategic nuclear weapons has declined by more than 90 percent since September 30, 1991.

<<tables omitted>>

Definitions

The nuclear stockpile includes both active and inactive warheads. Active warheads include strategic and non-strategic weapons maintained in an operational, ready-for-use configuration, warheads that must be ready for possible deployment within a short timeframe, and logistics spares. They have tritium bottles and other Limited Life Components installed. Inactive warheads are maintained at a depot in a non-operational status, and have their tritium bottles removed. A retired warhead is removed from its delivery platform, is not functional, and is not considered part of the nuclear stockpile. Warheads awaiting dismantlement constitute a significant fraction of the total warhead population and will continue to grow as the New START Treaty is implemented and as unneeded warheads are retired. A dismantled warhead is a warhead reduced to its component parts.

#### “Stockpile” means warheads assigned to operational forces—“nuclear forces” includes the stockpile plus warheads awaiting dismantlemnet

Kristensen et al. ’23 [Hans . Kristensen, Director, Nuclear Information Project, Federation of American Scientists, “Status of World Nuclear Forces,” Federation of American Scientists, 3—31—23, <https://fas.org/initiative/status-world-nuclear-forces/>, accessed 6-2-23]

Who owns the world’s nuclear weapons?

Despite progress in reducing nuclear weapon arsenals since the Cold War, the world’s combined inventory of nuclear warheads remains at a very high level: nine countries possessed roughly 12,500 warheads as of early-2023.

Combined, the United States and Russia now possess approximately 89 percent of the world’s total inventory of nuclear weapons, and 86 percent of the stockpiled warheads available for use by the military. Currently, no other nuclear-armed state sees a need for more than a few hundred nuclear weapons for national security, although many of these states are increasing their nuclear stockpiles.

Globally, the overall inventory of nuclear weapons is declining, but the pace of reductions is slowing compared with the past 30 years. Moreover, these reductions are happening only because the United States and Russia are still dismantling previously retired warheads.

In contrast to the overall inventory of nuclear weapons, the number of warheads in global military stockpiles – which comprises warheads assigned to operational forces – is increasing once again. The United States is still reducing its nuclear stockpile slowly. France and Israel have relatively stable inventories. But China, India, North Korea, Pakistan and the United Kingdom, as well as possibly Russia, are all thought to be increasing their stockpiles (see map):

<<map omitted>>

Of the world’s approximate 12,500 nuclear warheads, roughly 9,576 are in the military stockpiles for use by missiles, aircraft, ships and submarines. The remaining warheads have been retired but are still relatively intact and are awaiting dismantlement). Of the 9,576 warheads in the military stockpiles, some 3,804 are deployed with operational forces (on missiles or bomber bases). Of those, approximately 2,000 US, Russian, British and French warheads are on high alert, ready for use on short notice (see table):

<<table omitted>>

The exact number of nuclear weapons in each country’s possession is a closely held national secret, so the estimates presented here come with significant uncertainty. Most nuclear-armed states provide essentially no information about the sizes of their nuclear stockpiles. Yet the degree of secrecy varies considerably from country to country. Between 2010 and 2018, the United States disclosed its total stockpile size, but in 2019 the Trump administration stopped that practice. In 2020, the Biden administration restored nuclear transparency – a brief victory for nuclear accountability in a democratic country – but then declined to declassify any US stockpile data for 2021 or 2022. Similarly, in 2021 the United Kingdom announced that it would no longer disclose public figures for its operational stockpile, deployed warhead or deployed missile numbers. Additionally, as of 2023 both the United States and Russia have elected to no longer exchange publicly-available data about their deployed strategic warheads and launchers as mandated by the New START Treaty.

### Definition: “Nuclear Force Structure”

#### Includes quality, quantity, and type of nukes and delivery platforms. Excludes doctrine and security apparatus

Gartzke et al 14 – Department of Political Science, University of California, San Diego

Erik Gartzke, Jeffrey M. Kaplow, and Rupal N. Mehta, “The Determinants of Nuclear Force Structure,” The Journal of Conflict Resolution, April 2014, Vol. 58, No. 3, Special Issue: Nuclear Posture, Nonproliferation Policy, and the Spread of Nuclear Weapons (April 2014), pp. 481-508, https://www.jstor.org/stable/24545649

States that have acquired nuclear weapons must confront the complicated and important question of how to structure their nuclear arsenals.1

[[Begin FN 1]]

1. Analysts use varying definitions of nuclear force structure, including everything from simple weapon counts to the entire command, control, and intelligence infrastructure behind these weapons. We see nuclear force structure broadly as describing the quality, quantity, and type of nuclear weapons and delivery platforms deployed by a state. At the same time, this definition excludes questions of nuclear doctrine and the larger national security apparatus.

[[End FN 1]]

Some states, such as the United Kingdom, field only a small number of nuclear platforms, while others, such as the United States and the Soviet Union, establish diverse portfolios of weapons with varying range, destructive power, and other characteristics.2 Nuclear states differ dramatically not only in the number of nuclear platforms they deploy but also in the relative weight they place on particular weapon systems and on each component of the nuclear triad (air-, land-, and sea-based weapons).3 These characteristics have also changed over time—nuclear forces that seem appropriate in one strategic environment may be made redundant or obsolete by the introduction of new technologies or by cycles of crisis and détente. Variation across nations and time raises several key questions: Why do states deploy the nuclear force structures they do? What drives the decisions of states to invest in new nuclear platforms? How do officials think about the diversification of their nuclear portfolios?

#### Includes both nuclear warheads and delivery units

FAS 2011 – Federation of American Scientists

“Chapter 3: U.S. Nuclear Forces,” in *The Nuclear Matters Handbook: Expanded Edition*, Federation of American Scientists, 2011, <https://man.fas.org/eprint/NMHB2011.pdf>

3.5 Nuclear Weapons Force Structure

The U.S. nuclear force structure includes both nuclear warheads, which have been discussed above, and the units that can deliver the nuclear warheads to a target, if and when approved by the president. These delivery units consist of the launch platforms, delivery vehicles, support equipment, and the personnel required to accomplish the employment mission. Among other things, the delivery units have a staff that supports the commander for various functions, such as human resources, intelligence, delivery operations, security, training, and supply. The units also have technical and operational procedures, a security system, and a personnel support system that provides for the care of the unit’s personnel. The remainder of this section will focus on nuclear delivery systems.

### Definition: “Nuclear Forces”—Context of 2022 NPR

#### Note: term “nuclear forces” appears 34 times in the context of the U.S., Russian, and Chinese assets, but is NOT defined in the document

#### Forces is used in the NPR

U.S. Department of Defense ’22 [U.S. Department of Defense, “2022 Nuclear Posture Reivew,” 2022 NATIONAL DEFENSE STRATEGY OF THE UNITED STATES OF AMERICA, INCLUDING THE 2022 NUCLEAR POSTURE REVIEW AND THE 2022 MISSILE DEFENSE REVIEW, 2022, <https://media.defense.gov/2022/Oct/27/2003103845/-1/-1/1/2022-NATIONAL-DEFENSE-STRATEGY-NPR-MDR.PDF>, accessed 6-2-23]

Since the end of the Cold War, the United States has substantially reduced the size and diversity of its nuclear forces, narrowed the circumstances under which it would consider employing these forces, actively sought reciprocal force reductions with Russia, and made progress in global nonproliferation and risk reduction. Unlike some of its competitors, the United States will not use nuclear weapons to intimidate others or as part of an expansionist security policy. This policy of restraint continues to shape the role of nuclear weapons in U.S. strategy. The United States is committed to taking steps to reduce the role of nuclear weapons in our strategy as well as the risks of nuclear war, while also ensuring our strategic deterrent remains safe, secure, and effective, and our extended deterrence commitments remain strong and credible.

### Definition: “Nuclear Forces”—Broad

#### “Nuclear forces” means delivery platforms, weapons, support systems, C&C assets, and military infrastructure.

Roberts et al. 23 [Brad Roberts, study group chair and Director, Center for Global Security Resarch, Ph.D., Director of the Center for Global Security Research at Lawrence Livermore National Laboratory. Prior to this position, he was deputy assistant secretary of defense for Nuclear and Missile Defense Policy.

Brad, March 2023, “China’s Emergence as a Second Nuclear Peer,” CGSR Study Group Report, p. 34, <https://cgsr.llnl.gov/content/assets/docs/CGSR_Two_Peer_230314.pdf>.

Are existing and planned U.S. strategic nuclear force fit for the purpose of deterring and, if necessary, defeating two near peers simultaneously?

Does the United States have sufficient weapons of the right types, and will possess sufficient weapons as it modernizes? If not, what changes are needed?

The term “nuclear forces” refers here to the delivery platforms (bombers and ballistic missile submarines), weapons (warheads and bombs) mated to delivery systems (e.g., SLBMs and ICBMs), support systems (e.g., tankers), command and control assets, and associated military infrastructure necessary to conduct nuclear combat operations. The platforms and weapons can conceptually be split into two components: those that are operationally deployed and those that are not operationally deployed. The operationally-deployed component is readily available (immediately or within a few days), while the non-deployed component may take weeks to years to become operational.

#### Parts of armed services equipped with strategic or tactical nuclear weapons

NATO ’07 [staff, ““Non-NATO Nuclear Terms and Definitions,” Appendix 2, NATO/RUSSIA UNCLASSIFIED, Part 1, p. 1-20, <https://www.nato.int/docu/glossary/eng-nuclear/nuc_glos-e.pdf>, accessed 6-2-23]

References:

USIA : U.S. Information Agency – Arms Control and Disarmament – Glossary of Terms

USDoD : U.S. Department of Defense Dictionary of Military and Associated Terms

CP&MT : NATO-Russia Glossary of Contemporary Political and Military Terms

nuclear forces

A collective term for the armed services, arms or branches, major formations, tactical formations and units equipped with nuclear weapons, whether strategic or tactical. In the Russian Federation, nuclear forces include the Strategic Missile Forces, strategic aviation, submarines armed with nuclear ballistic missiles and all major formations, tactical formations and units equipped with substrategic nuclear weapons (CP&MT).

#### Strategic + nonstrategic + C&C

U.S. Department of Defense ’18 [U.S. Department of Defense, “21st Century Nuclear Deterrence & Missile Defense,” 2018 ,https://dod.defense.gov/News/Special-Reports/21st-Century-Nuclear-Deterrence-and-Missile-Defense/, accessed 6-2-2023, date confirmed at www.archive.org]

NUCLEAR FORCES

A combination of flexible, diverse and resilient nuclear forces underpins effective deterrence. Intercontinental ballistic missiles on land and at sea, strategic bombers, nonstrategic nuclear forces, and a robust command and control system constitute U.S. nuclear forces.

### Definition: “Nuclear Forces”—Typology by Country

#### Typology of how Russia and nuclear NATO members define “nuclear forces”

NATO ’07 [staff, “Definitions of Nuclear Forces,” Appendix 3, NATO/RUSSIA UNCLASSIFIED, Part 1, p. 1-26 to 1-28, <https://www.nato.int/docu/glossary/eng-nuclear/nuc_glos-e.pdf>, accessed 6-2-23]

References:

USIA : U.S. Information Agency – Arms Control and Disarmament – Glossary of Terms

USDoD : U.S. Department of Defense Dictionary of Military and Associated Terms

CP&MT : NATO-Russia Glossary of Contemporary Political and Military Terms

France

A strategic nuclear weapon is a weapon to whose use or threat of use only the highest authority of the State can resort, conceptually and structurally. The definition of the strategic nuclear weapon is fundamentally linked to France's doctrine of deterrence rather than to technical characteristics which, however important they may be, are merely consequences of that doctrine.

Russian Federation

Non-strategic nuclear weapons

Non-strategic nuclear weapons include all nuclear weapons which do not fall into the class of strategic nuclear weapons, that is, weapons with less than 5500 km ranges, to include Tactical and Operational nuclear weapons. (PJC Nuclear Experts, Oct 2000)

Tactical nuclear weapons

Tactical nuclear weapons are designed to engage objects in the tactical depth of enemy deployment (up to 300 km) to accomplish a tactical mission. Under certain conditions, tactical nuclear weapons may be involved in operational and strategic missions. (PJC Nuclear Experts, Oct 2000)

Operational nuclear weapons

Operational nuclear weapons are designed to engage objects in the operational depth of the enemy deployment (up to 500 km) with the purpose of accomplishing an operational mission. Under certain conditions operational nuclear weapons may be involved in the accomplishment of strategic missions and in exceptional cases, in the accomplishment of tactical missions. (PJC Nuclear Experts, Oct 2000)

Strategic nuclear weapons

Strategic nuclear weapons are designed to engage objects in geographically remote strategic regions (over 5500 km) to accomplish strategic missions. In exceptional situations, strategic nuclear weapons may be used to accomplish operational missions. Strategic nuclear weapons are in service with the strategic nuclear forces. (PJC Nuclear Experts,Oct 2000)

Strategic Missile Forces

One of the services of the Armed Forces of the Russian Federation, the mission of which is to deter possible aggression through the use of nuclear weapons or, in the event of such aggression to destroy, either alone or as part of the national strategic nuclear forces, the strategic installations that form the basis of the enemy’s military and economic potential. In addition, the Strategic Missile Forces provide warning of ballistic missile attacks and maintain constant surveillance of space. They are charged with destroying enemy space installations and ballistic missiles and also give warning of foreign intelligencegathering and other spacecraft. They support force groupings in the theatre at operational and tactical level. The essential characteristics of the Strategic Missile Forces are their enormous destructive capability, their high level of readiness and their extreme rapidity of action, combined with virtually unlimited range, high precision, the ability to prepare in secret, all-weather capability and a high degree of survivability. They consist of central military command and control organizations, major missile formations made up of missile divisions and regiments, tactical and major missile and space defence formations, as well as units and organizations responsible for launching and controlling spacecraft, agencies, production facilities, research organizations and military education establishments. (CP&MT)

Strategic forces

That part of a nation’s armed forces which carries out strategic missions in a

war involving the use of nuclear weapons. Strategic forces are subdivided into

offensive and defensive. The offensive strategic forces include units, tactical

formations and major formations equipped with intercontinental ballistic

missiles and submarines armed with ballistic missiles, as well as strategic air

forces. The defensive strategic forces, which are responsible for aerospace

defence, consist of strategic early-warning systems together with space and

missile defence assets. (CP&MT)

United Kingdom

Trident, the submarine-launched ballistic missile system, is the UK’s only nuclear weapon system; it covers both strategic and substrategic requirements. Whilst Trident has a primarily strategic mission, a small number of UK Trident warheads will be assigned a

sub-strategic role to retain the option for a limited strike that would not automatically lead to a full-scale nuclear exchange. (UK SDR,

Jul 1998; Alliance Strategic Concept)

United States

Non-strategic nuclear forces

Those nuclear-capable forces located in an operational area with a capability to employ nuclear weapons by land, sea, or air forces against opposing forces, supporting installations, or facilities. Such forces may be employed, when authorized by competent authority, to support operations that contribute to the accomplishment of the commander’s mission within the theatre of operations. (USDoD)

Theater nuclear forces

Nuclear forces designed for localized military missions. (USIA)

Strategic nuclear forces

Land-based ballistic missiles with ranges over 5500 kilometres, modern submarine-launched ballistic missiles, and heavy bombers. (USIA)

NATO

The terms "strategic" and "sub-strategic" have slightly different meanings in different countries. Strategic nuclear weapons are

normally defined as weapons of "intercontinental" range (over 5500 kilometres), but in some contexts these may also include

intermediate-range ballistic missiles of lower ranges. The term "sub-strategic nuclear forces/weapons” has been used in NATO

documents since 1989 with reference to intermediate and short-range systems and now refers primarily to air-delivered weapons for

NATO's dual-capable aircraft and to a small number of United Kingdom Trident warheads in a sub-strategic role. (Other sub-strategic

nuclear weapons having been withdrawn from Europe.) (NATO Handbook/NPD)

Land-based nuclear weapons

Nuclear surface-to-air missiles (air defence weapons for use against aircraft), nuclear land mines (also called atomic demolition weapons), nuclear artillery or tube-fired shells, and nuclear short-range missiles (up to 500 km range). Missiles with ranges from 500-5500 km are prohibited by the INF Treaty and were eliminated. (PJC Nuclear Experts, Oct 2000)

Strategic forces

That part of a nation’s armed forces which carries out strategic missions in a war involving the use of nuclear weapons. Strategic forces are subdivided into offensive and defensive. The offensive strategic forces include units, tactical formations and major formations equipped with intercontinental ballistic missiles and submarines armed with ballistic missiles, as well as strategic air forces. The defensive strategic forces, which are responsible for aerospace defence, consist of strategic early-warning systems together with space and missile defence assets. (CP&MT)

### Definition: “Nuclear Forces”—Walrath Assessment (Pre-TC Meeting)

#### First search with this term brings up a bunch of science terms related to how nuclear atoms/molecules interact – specifying military results in “nuclear force posture”, “nuclear force structure”, “command and control of nuclear forces”, and “nuclear commands, control, and communication (nc3)” which are the relevant terms of interest

#### This article is interesting because it lays out the mechanisms through which “nuclear force” aka the weapon systems that make up the deployed arsenal can only be reduced through arms reduction or obsolescencewhich seems to indicate that changing the make-up of deployed weapons is viable with this wording choice, but would have to intentionally specify reduce and/or modify*\**

**\*modify can be replaced with better terms that fit the literature – this is just my personal word choice to communicate thoughts**

GEORGE PERKOVICH and PRANAY VADDI ’21, \*is the Ken Olivier and Angela Nomellini Chair and vice president for studies at the Carnegie Endowment for International Peace. Perkovich works primarily on nuclear strategy and nonproliferation issues; cyberconflict; and new approaches to international public-private management of strategic technologies., \*\*is a fellow in the Nuclear Policy Program at the Carnegie Endowment for International Peace., “Nuclear Force Posture and Nuclear Command, Control, and Communications”, Carnegie Endowment for International Peace, 1/21/21, https://carnegieendowment.org/2021/01/21/nuclear-force-posture-and-nuclear-command-control-and-communications-pub-83581

The best nuclear force would be one that is:

* credible enough to deter adversaries and reassure allies and partners;
* least likely to provoke escalation if deterrence fails but could survive adversary escalation if it occurred; and
* would not cause more destruction than necessary to meet wartime objectives.

Such a force is hard to design in theory and harder to maintain in practice. Nuclear weapons systems take years to fund, design, develop, produce, and deploy. Once they are deployed, they are expected to remain in the arsenal for decades unless they are eliminated through arms reductions or obsolescence. The longevity of the arsenal may impede its adaptability to changing global security dynamics.

And so, the triad. For five decades, the United States has had a triad of nuclear weapon delivery systems, based on sea, air, and land. This arrangement developed through competition between the Air Force and the Navy for a share of the nuclear mission, and the evolution of available delivery technologies thereafter.1 Only after the triad was in place did strategists and officials enshrine its virtues.2 It gradually became sacrosanct and vital to the Air Force, the Navy, the eleven states that host triad delivery systems, and the many other states and enterprises that produce these systems. Alongside it, an NC3 system was designed to survive the stresses of nuclear conflict.

#### The “main force structure” refers to triad pieces – air, sea, and land which comprises of a few different parts in the United States for each to maintain “politically acceptable” deterrence force structure:

**Air** – Bombers, LRSO (new ALCM), B61 Bomb (gravity bomb with a few different yields – low and variable, with the Mod 12 undergoing upgrades and Mod 11 maintaining service as a earth-penetrator) – mostly deployed overseas through NATO

**Sea** – SSBNs, Trident SLBMs, Low-Yield Trident D5 (LYD5), SLCM-N

**Land** – ICBMS (400 Minutemen III – deployed in Colorado, Montana, Nebraska, North Dakota, and Wyoming – MIRV capable, but only one warhead each)

#### The unfortunate part though is that “forces” or “force structure” also could refer to NC3 as a distinct portion which massively adds to what the aff can do/skirts the main question that this resolution is trying to develop imo, though there is a debate to be had about whether it is the organizational/informational structure of nuclear forces that maintains them or is a distinct force itself. This could make a case for simply “nuclear weapons” as it is clearly distinguished from NC3, but still maintains the triad pieces discussed above. However, I still think the NC3 thing is totally a debate to be had if forces is chosen, rather than a super large concern, so I still lean towards the use of this term

GEORGE PERKOVICH and PRANAY VADDI ’21, \*is the Ken Olivier and Angela Nomellini Chair and vice president for studies at the Carnegie Endowment for International Peace. Perkovich works primarily on nuclear strategy and nonproliferation issues; cyberconflict; and new approaches to international public-private management of strategic technologies., \*\*is a fellow in the Nuclear Policy Program at the Carnegie Endowment for International Peace., “Nuclear Force Posture and Nuclear Command, Control, and Communications”, Carnegie Endowment for International Peace, 1/21/21, https://carnegieendowment.org/2021/01/21/nuclear-force-posture-and-nuclear-command-control-and-communications-pub-83581

Nuclear weapons are only as reliable (physically) as the command, control, and communication systems that inform and implement the decisions to employ or not employ them. These systems (known as NC3) are supposed to:70

* guarantee effective monitoring and exclusive control at all times over all nuclear forces and strategic operations;
* support decisionmaking, planning, and operations in all scenarios;
* provide timely warning of imminent attack;
* supply situational awareness to the various command levels;
* assure effective and secure communications to and from national command authority;
* accommodate and support required maintenance, upgrade, safety and surety operations;
* withstand efforts to undermine or subvert the reliable transmission of information and guidance between and across command levels; and
* sustain high standards of safety, security, and secrecy commensurate with the sensitivity of nuclear weapons.

The U.S. NC3 system includes space- and terrestrial-based sensors and communications platforms, as well as the computer architecture and other hardware that make these platforms work. The Pentagon currently plans to modernize the NC3 system wholesale. The Congressional Budget Office estimates that this effort will cost $77 billion from 2019 to 2028.71

#### The United States independently defines “nuclear forces” in 3 categories – each of which refer to a different role played by said forces

NATO No Date, “Definitions of Nuclear Forces”, Part 1, Appendix 3, <https://www.nato.int/docu/glossary/eng-nuclear/eng-app3.pdf> \*\*References – USIA: U.S. Information Agency – Arms Control and Disarmament – Glossary of Terms, USDoD: U.S. Department of Defense Dictionary of Military and Associated Terms, CP&MT: NATO-Russia Glossary of Contemporary Political and Military Terms

United States

Non-strategic nuclear forces

Those nuclear-capable forces located in an operational area with a capability to employ nuclear weapons by land, sea, or air forces against opposing forces, supporting installations, or facilities. Such forces may be employed, when authorized by competent authority, to support operations that contribute to the accomplishment of the commander’s mission within the theatre of operations. (USDoD)

Theater nuclear forces

Nuclear forces designed for localized military missions. (USIA)

Strategic nuclear forces

Land-based ballistic missiles with ranges over 5500 kilometres, modern submarine-launched ballistic missiles, and heavy bombers. (USIA)

#### Nuclear forces refers to the stockpile of warheads that nation states assign to operational roles and/or missions even if not in weapon format

HANS KRISTENSEN, MATT KORDA, ELIANA JOHNS, and KATE KOHN ’23, \*is Director of the Nuclear Information Project at the Federation of American Scientists where he provides the public with analysis and background information about the status of nuclear forces and the role of nuclear weapons., \*\*is a Senior Research Associate and Project Manager for the Nuclear Information Project at the Federation of American Scientists, where he co-authors the Nuclear Notebook––an authoritative open-source estimate of global nuclear forces and trends. Matt is also an Associate Researcher with the Weapons of Mass Destruction Programme at the Stockholm International Peace Research Institute (SIPRI), and co-authors the nuclear weapons chapters for the annual SIPRI Yearbook, \*\*\*is a Research Associate for the Nuclear Information Project at the Federation of American Scientists, where she researches the status and trends of global nuclear forces and the role of nuclear weapons., \*\*\*\*is the Communications Manager for the Federation of American Scientists., “Status Of World Nuclear Forces”, Federation of American Scientists, 3/31/23, https://fas.org/initiative/status-world-nuclear-forces/

Who owns the world’s nuclear weapons?

Despite progress in reducing nuclear weapon arsenals since the Cold War, the world’s combined inventory of nuclear warheads remains at a very high level: nine countries possessed roughly 12,500 warheads as of early-2023.

Combined, the United States and Russia now possess approximately 89 percent of the world’s total inventory of nuclear weapons, and 86 percent of the stockpiled warheads available for use by the military. Currently, no other nuclear-armed state sees a need for more than a few hundred nuclear weapons for national security, although many of these states are increasing their nuclear stockpiles.

Globally, the overall inventory of nuclear weapons is declining, but the pace of reductions is slowing compared with the past 30 years. Moreover, these reductions are happening only because the United States and Russia are still dismantling previously retired warheads.

In contrast to the overall inventory of nuclear weapons, the number of warheads in global military stockpiles – which comprises warheads assigned to operational forces – is increasing once again. The United States is still reducing its nuclear stockpile slowly. France and Israel have relatively stable inventories. But China, India, North Korea, Pakistan and the United Kingdom, as well as possibly Russia, are all thought to be increasing their stockpiles (see map):



Of the world’s approximate 12,500 nuclear warheads, roughly 9,576 are in the military stockpiles for use by missiles, aircraft, ships and submarines. The remaining warheads have been retired but are still relatively intact and are awaiting dismantlement). Of the 9,576 warheads in the military stockpiles, some 3,804 are deployed with operational forces (on missiles or bomber bases). Of those, approximately 2,000 US, Russian, British and French warheads are on high alert, ready for use on short notice (see table):

Estimated Global Nuclear Warhead Inventories, 2023

HANS M. KRISTENSEN, MATT KORDA, AND ELIANA REYNOLDS, FEDERATION OF AMERICAN SCIENTISTS, 2023



#### Conventional-nuclear force entanglement conversations are ensured with this term because it questions the “status” and “role” that nuclear forces play within national military strategy

Justin Anderson and James R. McCue ’21, \*Dr. Anderson is a senior policy fellow at the Center for the Study of Weapons of Mass Destruction at National Defense University, \*\*Lt Col USAF and serves as a nuclear strategist at the Defense Threat Reduction Agency, “Deterring, Countering, and Defeating Conventional-Nuclear Integration”, Strategic Studies Quarterly – Perspective, Spring 2021, https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-15\_Issue-1/Anderson.pdf

An important component of their approach is integrating conventional and nuclear-capable forces into their political-military strategies. For advanced militaries, nuclear-capable forces include delivery systems that are solely devoted to a nuclear role and dual-capable platforms that can carry either conventional or nuclear weapons (and whose status and armaments may be unclear to a potential opponent). All three states have developed and deployed both long-range “strategic” nuclear-armed missiles and theater-range (i.e., short-, medium-, or intermediate-range) nuclearcapable delivery systems, with the latter serving alongside, or intermixed with, their conventional forces.2 These integrated forces provide these actors with the ability to develop combined arms theater campaign plans bringing conventional and nuclear capabilities to bear against US and allied forces within a future potential regional conflict.3 As stated by Brad Roberts, former deputy assistant secretary of defense (DASD) for nuclear and missile defense policy, the “United States must expect that nuclear weapons would play a role in regional wars against Russia or China,” as both Moscow and Beijing have incorporated nuclear coercion, and potential employment, into their “theories of victory” for these types of conflicts.4 Roberts further assesses that North Korea’s nuclear weapons and missile development programs may have granted it “operationally attractive” options for a “credible anti-access area-denial strategy” against the United States and South Korea within a future conflict on the Korean Peninsula.5 Keith Payne, who also previously served in this DASD role, shares many of these same concerns. In 2018 he noted, “We must understand how to deter Great Powers and nuclear-armed Rogues from exploiting limited nuclear threats and/or escalation for coercive purposes in support of their respective goals to change established orders and borders in Europe [and] Asia.”6

For US policy makers, it is important to recognize that present efforts to address the challenge posed by conventional-nuclear integration (CNI) can be informed by the Cold War, when the Soviet Union attempted to utilize a combination of conventional forces and theater-range nuclear delivery systems to threaten and attempt to fracture the North Atlantic Treaty Organization (NATO).7 The United States met this challenge with its own integrated conventional-nuclear force, with the allied regional defense posture relying on the US arsenal of “non-strategic” nuclear weapons to counter the Warsaw Pact’s significant advantage in conventional forces.8 Critically, however, the present CNI threat from adversaries combines both of these concepts. Russia, China, and North Korea field integrated forces to challenge US regional defense alliances and deterrence postures while also viewing CNI as necessary to offset what they assess as contemporary US advantages in conventional forces.

As a result, while aspects of the present situation echo the Cold War, today’s CNI environment is more complex than in the past era. The United States must address the challenge of three potential adversaries fielding integrated conventional and nuclear forces, to include new theater-range, nuclear-capable mobile missiles recently fielded by each state. Our proposed counter-CNI strategy seeks to adapt to today’s multipolar context, a half century of technological achievement, and the important fact that the United States is less reliant on nuclear weapons to impose costs on an opponent’s military forces within future regional conflicts than its potential adversaries. US policies and strategies for countering the evolving and cross-cutting CNI threat thus requires an integrated, but not mirror-imaged, response. It should leverage US conventional and nuclear-capable forces to enhance regional deterrence and defeat options, without mimicking potential adversaries by overly and dangerously relying on the threat or use of nuclear weapons in theater to prevail in a potential future regional conflict.

#### CNI definition proper – avoids questions of accidental entanglement, has to be a purposeful strategy by a nationstate

Justin Anderson and James R. McCue ’21, \*Dr. Anderson is a senior policy fellow at the Center for the Study of Weapons of Mass Destruction at National Defense University, \*\*Lt Col USAF and serves as a nuclear strategist at the Defense Threat Reduction Agency, “Deterring, Countering, and Defeating Conventional-Nuclear Integration”, Strategic Studies Quarterly – Perspective, Spring 2021, https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-15\_Issue-1/Anderson.pdf

CNI is a subset of the broader phenomena of nuclear-conventional “entanglement,” a term referring to the ways and means by which conventional and nuclear forces may intersect, interconnect, and/or overlap.10 Importantly, entanglement does not necessarily attribute intentionality to this interrelationship. Research on this subject often focuses on areas of entanglement that may be unintentional and, therefore, are either reversible or can be otherwise addressed to reduce the risk that overlap could lead to nuclear crisis or conflict.11

We define CNI as the deliberate, calculated decision by a state actor to combine conventional and nuclear-capable forces for the purpose of realizing strategic, theater, and/or tactical military objectives that it assesses cannot be achieved through the use of conventional forces alone. This intentionality extends across a spectrum of activities associated with fielding military forces. These include researching and developing delivery systems and weapons that can fit into an integrated force (such as dual-capable missiles that can carry conventional or nuclear warheads); organizing, training, and equipping both conventional and nuclearcapable military forces; preparing, planning, and training these forces to operate together; and openly conducting tests or exercises for combined operations, demonstrating how one type can support or enable the other and/or making clear to outside audiences that nuclear-capable forces are integral to theater war-fighting concepts. The focus here is on the integration of conventional and nuclear-capable forces by Russia, China, and North Korea as actors that represent potential adversaries of the United States. It is important to note, however, that CNI is a broader phenomenon that also extends to states such as Pakistan, which has integrated short- and medium-range nuclear-capable forces into strategies and plans for defending its territory against a potential cross-border offensive by large numbers of Indian conventional forces.12

### Definition: “Nuclear Posture”—Broader

#### ‘Nuclear posture’ refers to forces (numbers, types, locations, delivery systems) and operational status

NATO ’07 [staff, ““NATO and NATO-Russia Nuclear Terms and Definitions,” Appendix 1, NATO/RUSSIA UNCLASSIFIED, Part 1, p. 1-10, <https://www.nato.int/docu/glossary/eng-nuclear/nuc_glos-e.pdf>, accessed 6-2-23]

References:

USIA : U.S. Information Agency – Arms Control and Disarmament – Glossary of Terms

USDoD : U.S. Department of Defense Dictionary of Military and Associated Terms

CP&MT : NATO-Russia Glossary of Contemporary Political and Military Terms

nuclear posture

A term commonly used in NATO to refer to nuclear forces and related subjects such as numbers, types, locations of nuclear weapons and their associated delivery systems, as well as their operational status, including delivery-system readiness levels and weapon-storage locations. See also deterrent force (CP&MT).

### Definitions: “Nuclear Posture”—9 Parts

#### “Nuclear posture” includes nine elements, and excludes things like missile defense and non-nuclear capabilities

Perry & Schlesinger 9 --- Chairman and Vice Chairman of the Congressional Commission on the Strategic Posture of the United States

William J, James R, 2009, “America’s Strategic Posture,” The Final Report of the Congressional Commission on the Strategic Posture of the United States, https://www.usip.org/sites/default/files/file/strat\_posture\_report\_adv\_copy.pdf

It is important to begin here with a definition. The nuclear posture consists of the following elements:

1. The arsenal of operationally deployed strategic nuclear weapons.

2. The arsenal of forward-deployed tactical nuclear weapons.

3. The triad of strategic nuclear delivery systems (land-based missiles, sea-based missiles, and bombers).

4. The delivery systems for forward-deployed systems (including both submarine-launched cruise missiles and aircraft equipped to carry both conventional and nuclear payloads, called dual-capable aircraft).

5. The stockpile of warheads held in operational reserve.

6. A stockpile of fissile material appropriate for use in warheads.

7. The associated command, control, and intelligence systems.

8. The infrastructure associated with the production of all of these capabilities, without which the force will not remain viable, both physical and human.

9. Declaratory policy specifying the role of nuclear forces in U.S. military and national security strategies.