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## Feature Report

***“Masterpiece Theater: Missed Opportunities for Missile Defense in the 2020 Budget”***. By Thomas Karako and Wes Rumbaugh. Published by Center for Strategic & International Studies; March 29, 2019

<https://www.csis.org/analysis/masterpiece-theater-missed-opportunities-missile-defense-2020-budget>

Just over a year ago, then-Deputy Secretary of Defense Patrick Shanahan announced that the 2020 defense budget would be the “masterpiece” that would finally align Pentagon spending with the new direction of the National Defense Strategy. The release of the new budget follows the January 2019 release of the Missile Defense Review, which laid out the administration’s vision of how U.S. missile defense policy, programs, and posture should be adapted to contend with more challenging missile threats in an era of great power competition.

At the review’s release, President Trump declared the “beginning of a new era in our missile defense program,” setting a goal to “detect and destroy any missile launched against the United States—anywhere, anytime, anyplace.” Unfortunately, neither the modest language of the Missile Defense Review nor the activities and funding levels in the proposed 2020 budget come anywhere close to achieving that goal. They specifically lack the programmatic and budgetary muscle movements to contribute meaningfully to overall U.S. deterrence and defense goals in relation to Russia and China. The Missile Defense Review nominally widens the scope of missile defense policy from a focus on ballistic missiles to countering the full spectrum of missile threats. Yet these new policy and budget proposals remain remarkably consistent with the program of record that preexisted the National Defense Strategy. Apart from steps within the services for incremental improvements to air defenses and some studies on countering hypersonic glide vehicles, the focus remains on the limited ballistic missile threats posed by otherwise weak rogue regimes. Too little attention is given to the threat of complex and integrated missile attacks from major powers like Russia and China.

## TABLE OF CONTENTS

### NUCLEAR WEAPONS

- [Hypersonic Weapons: Strategic Asset or Tactical Tool?](#) (Air Force Magazine)  
Those discussions could shape how adding hypersonic weapons to the inventory could affect the broader strategic deterrent as the nuclear triad is modernized in the coming decades.
- [Navy Hopes to Avoid Complications As It Builds Two Types of Submarines](#) (National Defense)  
The Columbia-class will replace the Ohio-class ballistic missile submarines, one of the three legs of the nuclear triad, which also includes long-range bombers and intercontinental ballistic missiles.
- [DOD Report: China Close to Achieving Nuclear Triad](#) (Air Force Magazine)  
The report states that China is pursuing a viable nuclear triad through the development of a nuclear-capable air-launched ballistic missile to be carried on advanced bombers, and the development of new Jin-class submarines.
- [Gen. Ray: Attracting Capable Techies Key to NC3 Improvements](#) (Breaking Defense)  
“We need to attract the right technical people, and we’ve got to get better at it,” he said after a Senate Armed Services strategic forces subcommittee on hearing on nuclear weapons policy and programs.

### US COUNTER-WMD

- [IBCS: Northrop Delivers New Army Missile Defense Command Post](#) (Breaking Defense)  
The system is crucial for the Army because it is designed to work with every anti-aircraft, counter-drone and missile defense system in the future.
- [DARPA SIGMA+ Program Tests New Sensors to Detect Chemical Threats Regionally](#) (Homeland Preparedness News)  
The new initiative utilizes chemical sensor, wind sensor, and communications board within weatherproof housing to report wind readings and real-time chemical information, which is then uploaded to a central cloud containing algorithms.

### US ARMS CONTROL

- [Iran Suspending Some Nuclear Deal Commitments](#) (VOA)  
U.S. Secretary of State Mike Pompeo said Iran's announcement to suspend compliance was "intentionally ambiguous" and the United States would not react until it is determined whether Iran follows through.
- [Tensions with Iran Escalate beyond War of Words](#) (The Hill)  
Trump last year withdrew from the international nuclear accord, calling it the “worst deal ever negotiated.”
- [China Dismisses Suggestion It Will Join US, Russia in Nuclear Arms Talks](#) (The Hill)  
Arms control advocates have raised concerns that Trump will let New START expire after he moved to withdraw the U.S. from the Intermediate-Range Nuclear Forces Treaty earlier this year after alleging Russia was not complying with it.
- [With Missile Test, North Korea Sends Message to Seoul](#) (VOA)  
But the launch also seems intended to pressure South Korean President Moon Jae-in, who has increasingly become the target of North Korea’s outrage as nuclear talks with the U.S. falter.

## COMMENTARY

- [Rethinking Arms Control Should Include China](#) (The Hill)  
Yet, whatever Bolton or Trump's motives might be, insisting that China be a full participant in future arms control negotiations is the right call for several reasons.
- [An Appeal for a Nuclear Perspective in Army Education](#) (War on the Rocks)  
Deterrence history should focus on how the shadow of nuclear weapons kept a limited conventional conflict from growing into something more serious.

# NUCLEAR WEAPONS

Air Force Magazine (Arlington, Va.)

## **Hypersonic Weapons: Strategic Asset or Tactical Tool?**

By Rachel S. Cohen

May 7, 2019

As the Pentagon moves ahead in its pursuit of hypersonic weapons, the defense community has mixed opinions on whether the new missiles should be considered as strategic assets—driven by the principle that simply owning them should dissuade adversaries from using their own, and would be devastating if deployed.

Those discussions could shape how adding hypersonic weapons to the inventory could affect the broader strategic deterrent as the nuclear triad is modernized in the coming decades.

Gen. Paul Selva, vice chairman of the Joint Chiefs of Staff, noted at a recent Strategic Deterrent Coalition conference that hypersonic weapons would be incredibly versatile in a conventional or nuclear conflict.

“The best layman’s description I’ve heard of hypersonics as a strategic threat goes something like this: If you’re going Mach 13 at the very northern edge of Hudson Bay, you have enough residual velocity to hit all 48 of the continental United States,” Selva said April 25. “You can choose ... to make a right or a left turn and hit Maine or Alaska, or you can hit San Diego or Key West. That’s a monstrous problem.”

On the other hand, Pentagon research chief Mike Griffin told reporters last July he views hypersonic missiles more as tactical weapons, not strategic. DOD should hone in on the “tactical capability that these sorts of weapons bring to theater conflicts or regional conflicts,” Defense News reported. “Very quick response, high speed, highly maneuverable, difficult to find, and track, and kill.”

Experts say hypersonic weapons could fly one mile per second and could take 15 minutes or less to reach a target, compared to about half an hour for a ballistic missile. James Acton, co-director of the Carnegie Endowment for International Peace’s nuclear policy program, says a hypersonic missile would move slower when approaching its target than a ballistic missile at the same range.

The Air Force aims to develop hypersonic weapon prototypes in the next few years under rapid development and acquisition partnerships with the Defense Advanced Research Projects Agency, its sister services, and Lockheed Martin. Some have speculated that development should run parallel to the Pentagon’s broader nuclear modernization effort.

“Don’t presume that what you modernize in this next five to seven, eight, 10 years stays the same for the rest of its deployed life,” former 20th Air Force commander retired Maj. Gen. Roger Burg, who now runs O’Malley Burg Consulting, said at a recent AFA Mitchell Institute breakfast. “Hypersonics are going to have to be part of the nuclear deterrent of the future.”

Hypersonics’ role in projecting strategic power depends on how the military defines how they will be deployed. Possible missions include preemptively disabling rogue states’ nuclear infrastructure or attacking anti-satellite weapons before they could be used, Acton said.

“I’m not sure we’ve got a clear concept of operations,” Acton said in a May 6 interview. “A lot of this is developing technology for the sake of technology and trying to work out what to do with it later.

To the best of my knowledge, we've never articulated precisely what mission need hypersonics are supposed to fill."

Hypersonics could pose tactical conundrums as well, according to Selva, who admitted he isn't sure yet what that capability could mean in a "launch under attack" scenario like those considered during the Cold War. The US has to consider what it means to add weapons that would go undetected by current missile-warning systems, he said.

"We see a thousand missiles coming our way, we got a thousand missiles pointed their way, it's the end of the world as we know it. ... Some modicum of the nation survives, we live to fly and fight another day," he said. "Hypersonics really complicate that problem in some really difficult tactical and operational settings. We have to figure out how to adjust to those."

Acton disputes that fielding American hypersonics will directly offset Russian or Chinese hypersonics, and that the US shouldn't pursue the capability simply because its rivals are.

He argues a conventional hypersonic missile strike would be 100 or 1,000 times less powerful than a nuclear one, and that such comparisons of hypersonic and nuclear weapons are "totally misleading."

"I would still class certain kinds of hypersonic weapons as strategic," he said. "In particular, we have a lot of military hardware deep in the US that we've never had to worry about being attacked with conventional weapons before. ... If Russia to China had the ability to reach out over very long distances and threaten that kind of critical military infrastructure within the US, that's a pretty significant development."

While he said very long-range hypersonic missiles could be considered strategic, he added putting a nuclear warhead on them wouldn't necessarily be a game-changer because the US is already vulnerable to a nuclear attack.

Nuclear-tipped or not, some leaders already think of hypersonic missiles as linked with the nuclear arsenal. US Strategic Command boss Gen. John Hyten, who is nominated to take Selva's spot among the Joint Chiefs, told senators earlier this year America's nuclear deterrent is its defense against such weapons.

Hyten also argues hypersonics wouldn't be covered by the 1987 Intermediate-Range Nuclear Forces Treaty because less than half the trajectory would be ballistic, or following an arc like a fly ball. However, Acton said that because Russia may field its dual-use Avangard hypersonic boost-glide vehicle on an existing intercontinental ballistic missile, Avangard would already be covered by the 2010 New START treaty—meaning it would count toward the limits on how many warheads and delivery systems the US and Russia can deploy at once.

"I just don't see hypersonics displacing the kinds of things we would think about using nuclear weapons for," Acton said. "They're just completely different categories. ... I don't think we can get rid of some nuclear weapons because we in some way substitute or replace them for hypersonics."

<http://www.airforcemag.com/Features/Pages/2019/May%202019/Hypersonic-Weapons-Strategic-Asset-or-Tactical-Tool.aspx>

[Return to top](#)

National Defense (Arlington, Va.)

## **Navy Hopes to Avoid Complications As It Builds Two Types of Submarines**

By Stew Magnuson

May 7, 2019

NATIONAL HARBOR, Md. — Development of the Columbia-class ballistic missile submarine is still on track, but the real test will come in five years when the service is producing two different types of subs at the same time, a senior Navy official said May 7.

James “Hondo” Geurts, assistant secretary of the Navy for research, development and acquisition, said the biggest concern the Navy has when it comes to fielding new classes of submarines is not the yet-to-built Columbia-class. The program “is largely tracking to the schedule we have,” he told reporters at the Navy League’s Sea-Air-Space conference at National Harbor, Maryland.

Problems may emerge when it is launching those boats and a new generation of Virginia-class fast attack submarines beginning at about the middle of the next decade, he said.

Looking broadly at the whole submarine enterprise, the Navy must ensure that it can produce both platforms at the same time without any schedule slippages, he said. The service must do everything it can to communicate with the shipyards and vendors to coordinate the two major programs.

“One of the biggest risks to Columbia is if Virginia is out of its cadence,” Geurts said.

The Columbia-class will replace the Ohio-class ballistic missile submarines, one of the three legs of the nuclear triad, which also includes long-range bombers and intercontinental ballistic missiles. General Dynamics Electric Boat and HII Newport News Shipbuilding are designing the new submarines with the first expected to begin construction around 2021. Navy officials have long warned that there is little margin for error in the Columbia-class schedule as the Ohio-class boats are approaching the end of their service lives. The first vessel is expected to be delivered in fiscal year 2028, the second in 2031, and the remaining 10 at a rate of one per year from 2033 to 2042.

Beginning in the mid-2020s, Virginia-class submarines will be procured at a rate of two per year while Columbia will be procured at a rate of one per year.

The more numerous Virginia-class submarines are expected to number 66 and have been in production since 2004 with various block upgrades. Block V submarines are also being built by Electric Boat and Newport News Shipbuilding.

“Submarines are very sensitive to sequencing,” Geurts said. “If you get a little bit out of sequence, it can have an impact. So we have to make sure that we have all the sequencing right, which includes facilities, workforce, supplies, bandwidth so that as we sequence in Columbia, we can continue with the cadence on Virginia.”

If things do go awry, Geurts said Columbia-class subs will be the No. 1 priority.

<http://www.nationaldefensemagazine.org/articles/2019/5/7/navy-hopes-to-avoid-complications-as-it-builds-two-types-of-submarines>

[Return to top](#)

Air Force Magazine (Arlington, Va.)

## **DOD Report: China Close to Achieving Nuclear Triad**

By Brian Everstine

May 3, 2019

At least two decades of a “very aggressive modernization effort” has brought China’s military to the cusp of a nuclear triad for the first time, along with dramatic progress in developing hypersonic missiles and an air force with a long-range power projection capability, the Pentagon warns in a new report on that country’s military power.

While there has been large-scale progress in “niche” capabilities that have created “areas of excellence,” particularly in ballistic and cruise missiles, a lack of training and a shortfall in integrated command and control is still holding the country back, said Randall Schriver, the assistant secretary of defense for Indo-Pacific security affairs, in a Friday briefing.

“This is a national effort, that’s resourced very well and it’s targeted at them being ... the pre-eminent power in the Indo-Pacific,” Schriver said.

The 136-page report to Congress states China has used economic, foreign policy, and security tools “to realize this vision,” with a special focus on replacing imported technology with domestically produced technology.

### **MOVING TOWARD A TRIAD**

The report states that China is pursuing a viable nuclear triad through the development of a nuclear-capable air-launched ballistic missile to be carried on advanced bombers, and the development of new Jin-class submarines.

“The [People’s Liberation Army] is upgrading its aircraft with two new air-launched ballistic missiles, one of which may include a nuclear payload,” the report states. “Its deployment and integration would, for the first time, provide China with a viable nuclear ‘triad’ of delivery systems dispersed across land, sea, and air forces.”

While the CJ-20 missile is in development, the Pentagon is reticent to say it is operationally capable. The same goes for the nuclear ballistic missile capability of the Jin-class submarine.

“We’re tracking what they’re doing,” Schriver said. “... Without getting specific on the timeline, they’re heading that direction, ... toward having capable delivery systems in those three domains.”

The technology may not be fully operational, and the training and doctrine are also holding China back from having an operational triad, though it is “certainly something they are heading toward,” Schriver said.

In addition to the development of the nuclear capability of bombers and submarines, China also already has 90 ground-based intercontinental ballistic missiles, the report states.

### **ADVANCEMENTS IN THE AIR**

China’s air force is undertaking a concerted effort to establish a “long-range power projection capability,” with leadership pressing for a “truly ‘strategic’ air force,” the report states.

The air force has 2,700 total aircraft, 2,000 of which are combat aircraft. There are about 600 fighter aircraft, most of which are fourth-generation fighters. There has been progress in developing the fifth-generation FC-31 and J-20 aircraft, including a recent demonstration of both the J-20 in November. China is also importing advanced Su-35 fighters from Russia.



The country's aviation industry is also advancing, through initial deliveries of the Y-20 large transport aircraft and completion of the world's largest seaplane, the AG600, the report states. China is modernizing its unmanned aircraft fleets with domestically produced drones.

China also has one of the world's largest air and missile defense systems, with a combination of Russian-made and Chinese-made missiles. The country has contracted for the Russian-made S-400 as a follow on to its SA-20 and CSA-9 systems, with the first test fires of the new system in December, the report states.

Last August, China successfully tested its hypersonic glide vehicle, the XINGKONG-2, that it publicly said is a hypersonic waverider vehicle. This is "something we're concerned about," Schriver said, noting the Pentagon's budget request calls for both defensive capabilities to counter this and significant investment in offensive capabilities for the US, Schriver said.

Most of the technology development is dependent on the country's aggressive use of cyber, along with acquiring foreign technology.

"China uses a variety of methods to acquire foreign military and dual-use technologies, including targeted foreign direct investment, cyber theft, and exploitation of private Chinese nationals' access to these technologies, as well as harnessing its intelligence services, computer intrusions, and other illicit approaches," the report states.

In 2018, China used these efforts to acquire "sensitive, dual-use, or military-grade equipment from the United States, [which] included dynamic random access memory, aviation technologies, and anti-submarine warfare technologies," the report states.

While Chinese efforts in the cyber realm has stayed steady in recent years, the US military has grown more aware of this and increased its defensive capability, Schriver said.

#### REACH INTO THE ARCTIC

This year's report includes a special section devoted to China's increased focus on the Arctic. In January 2018, China published a strategy on creating a "Polar Silk Road" and has called itself a "Near-Arctic State."

Their focus has publicly been on natural resources and sea lines of communication, and China has become an observer on the international Arctic Council. The country has deployed icebreakers and research stations to Iceland and Norway.

Countries in the Arctic region have questioned China's reach into the area, including Denmark, which has expressed concern with China's interest in Greenland. Civilian research in the region "could support a strengthened Chinese military presence," the report states.

There's "a lot of ambition," which is likely "multi-faceted in terms of their objectives," Schriver said. While this includes their stated objectives, the arctic could also provide a "safe harbor for strategic assets such as ballistic missile carrying subs," he said. This is a "possibility that, in the future, we will watch closely."

<http://www.airforcemag.com/Features/Pages/2019/May%202019/Pentagon-Report-Details-Chinese-Advancement-Including-Toward-a-Triad-and-in-the-Arctic.aspx>

[Return to top](#)

Breaking Defense (Washington, D.C.)

## **Gen. Ray: Attracting Capable Techies Key to NC3 Improvements**

By Theresa Hitchens

May 1, 2019

CAPITOL HILL: Gen. Timothy Ray, head of Air Force Global Strike Command, says recruiting the most capable technical experts to both industry and DoD is the most critical issue for improving America's ancient nuclear command, control and communications (NC3) systems.

Ray told me that this is a struggle across the NC3 enterprise that is recognized by everyone, including contractors. "We need to attract the right technical people, and we've got to get better at it" he said after a Senate Armed Services strategic forces subcommittee on hearing on nuclear weapons policy and programs.

Ellen Lord, undersecretary of Defense for acquisition, told lawmakers that coordination within DoD on NC3 has vastly improved since the reorganization (ordered by former Defense Secretary Jim Mattis) that put Strategic Command chief Gen. John Hyten in charge of requirements and herself in charge of acquisition. She added that the Pentagon has "just completed a NC3 enterprise review with Gen. Hyten, myself, Gen. (Paul) Selva (Vice Chief of the Joint Chiefs of Staff), and the DepSecDef (Deputy Secretary of Defense) – and we are reviewing all the key programs looking at fragility, and making sure we address the key items" needing further work. (Hyten told me at Space Symposium that the review was scheduled for April 16.)

Lord stressed that DoD needs both "to modernize and sustain" NC3 capabilities at the same time. "We are dealing with Cold War technology that needs to be upgraded." She took the opportunity to ask subcommittee members for their support for DoD's fiscal year 2020 budget request for 14 new billets in her office to support such efforts.

Ray concurred that internal DoD cooperation has improved. He has launched a review "to re-look" the NC3 Center under his command at Barksdale AFB, as it was stood up originally without a link to STRATCOM or the oversight functions of the Office of Secretary of Defense. Ray told me he didn't think much would need to be changed though: rather a rejiggering of the functions of some 23 personnel.

Lord further told the subcommittee that she was well aware of Congress's longstanding concerns regarding cybersecurity and the supply chain, and that DoD is developing standards "so we know what 'right' looks like in cybersecurity." She noted that "by the end of this year will have a national cybersecurity standard, just like we have just like we have ISO for quality."

<https://breakingdefense.com/2019/05/gen-ray-attracting-capable-techies-key-to-nc3-improvements/>

[Return to top](#)

# US COUNTER-WMD

Breaking Defense (Washington, D.C.)

## **IBCS: Northrop Delivers New Army Missile Defense Command Post**

By Sydney J. Freedberg Jr.

May 1, 2019

WASHINGTON: Northrop Grumman announced today it had delivered the first “production-representative” command post for the Army’s new missile defense network, IBCS. That opens the door for test shots later this year and the system’s crucial operational test in 2020.

The system is crucial for the Army because it is designed to work with every anti-aircraft, counter-drone and missile defense system in the future.

By the end of this year, Northrop plans to deliver 10 more truck-borne Engagement Operations Centers, i.e. command posts, for a total of 11, plus 18 Integrated Fire Control Network (IFCN) relays.

If IBCS works as advertised — it definitely didn’t back in 2016, but more recent tests have shown marked improvement — it will make it possible for the Army’s disparate anti-aircraft and missile defense systems to work together as never before. That’s especially essential as the military refocuses from fighting the Taliban and the Islamic State to deterring Russia and China, with their massive arsenals of missiles, artillery rockets, attack helicopters, and strike aircraft.

(What does IBCS stand for? You’ll be sorry you asked: It’s a nested acronym for the IAMD Battle Command System, where IAMD in turn stands for Integrated Air and Missile Defense).

Historically, each Army system came as a stand-alone package. Firing a Patriot launcher required a custom-made Patriot command post that got targeting data from a dedicated Patriot radar. The longer-ranged THAAD used the more powerful AN/TPY-2 radar to detect high-altitude ballistic missiles. Short-Range Air Defense units with Stingers used the small Sentinel radar to track subsonic cruise missiles. If one unit’s radar detected a threat but another unit was in a better position to take it out, they couldn’t share targeting data.

The Army’s already started working on some one-to-one connections, for example between Patriot and THAAD, which are both deployed together in Korea. But the long-term goal is to be able to link any sensor to any shooter, and that’s what IBCS is supposed to do when it enters service in 2022. Future air and missile defense systems like IFPC (Indirect Fire Protection Capability, a multi-purpose launcher) and LTAMDS (Lower-Tier Air & Missile Defense Sensor, a radar) are being built to be IBCS-compliant from the start, while others will require (hopefully) modest upgrades.

Air and missile defense is No. 5 of the Army’s Big Six modernization priorities. The first four — long-range artillery, armored vehicles, aircraft, and the command-and-control network — get first shot at funding, but, as Army chief of staff Gen. Mark Milley put it, “none of this is going to matter if you’re dead, and that’s why you need air defense.”

<https://breakingdefense.com/2019/05/ibcs-northrop-delivers-new-missile-defense-command-post-to-army/>

[Return to top](#)

Homeland Preparedness News (Washington, D.C.)

## **DARPA SIGMA+ Program Tests New Sensors to Detect Chemical Threats Regionally**

By Chris Galford

May 2, 2019

The Defense Advanced Research Projects Agency (DARPA) is testing new chemical sensors that are pushing the ability to detect chemical, biological, radiological, nuclear and explosive threats to potentially region-scale efforts.

The effort is coming of age under the SIGMA+ initiative, which is a spin-off of the SIGMA program. That program had demonstrated the ability to detect radiological and nuclear threats at a city-scale. The new initiative utilizes chemical sensor, wind sensor, and communications board within weatherproof housing to report wind readings and real-time chemical information, which is then uploaded to a central cloud containing algorithms. The effort was already tested at the Indianapolis Motor Speedway in April last year.

“The algorithms were developed using a custom simulation engine that fuses multiple detector inputs,” Anne Fischer, program manager in DARPA’s Defense Sciences Office, said. “We built the algorithms based on simulant releases in a large metropolitan area – so we took existing data to build the algorithms for this network framework. With this network, we’re able to use just the chemical sensor outputs and wind measurements to look at chemical threat dynamics in real time, how those chemical threats evolve over time, and threat concentration as it might move throughout an area.”

In testing, SIGMA+ successfully tracked complex signals and passed false detection events at an individual level and gathered up a sizeable data set to inform future efforts. Its sensors pinpointed release locations of non-hazardous chemical stimulants in a variety of wind conditions and speeds and generated no false alarms along the way.

Now, DARPA wants to extend the platform’s chemical detection capabilities through additional sensor modalities and to mature the system into a more continuous, real-time structure.

<https://homelandprepnews.com/stories/33677-darpa-sigma-program-tests-new-sensors-to-detect-chemical-threats-regionally/>

[Return to top](#)

## US ARMS CONTROL

VOA (Washington, D.C.)

### **Iran Suspending Some Nuclear Deal Commitments**

By VOA News

May 8, 2019

Iranian President Hassan Rouhani announced Wednesday his country will suspend its compliance with prohibitions on stockpiles of enriched uranium and heavy water that were imposed as part of the 2015 international agreement on its nuclear program.

With the withdrawal of the United States from the agreement and its imposition of economic sanctions against Iran, Rouhani said the remaining signatories have not lived up to their

commitments, and instead have allowed the U.S. measures to affect the Iranian oil and banking sectors.

He gave them 60 days to implement changes, and said Iran's next step would be to resume enriching uranium at higher levels. However if the other countries work with Iran, Rouhani said his government will resume complying.

Iran Foreign Minister Mohammad Javad Zarif said on Twitter that U.S. actions had made it impossible for Iran to continue the way it was, and that the other signatories have "a narrowing window to reverse this."

U.S. Secretary of State Mike Pompeo said Iran's announcement to suspend compliance was "intentionally ambiguous" and the United States would not react until it is determined whether Iran follows through.

"We'll have to wait to see what Iran's actions actually are," Pompeo said after meeting in London with British Foreign Secretary Jeremy Hunt. "They've made a number of statements on actions they intend to do in order to get the world to jump. We'll see what they actually do."

U.S. Representative for Iran Brian Hook said at a briefing in Washington Tehran's announcement is tantamount to blackmail.

"America is never going to be held hostage to the Iranian regime's nuclear blackmail," said Hook, a senior advisor to Pompeo. "We are committed to denying the Iranian regime all paths to a nuclear weapon."

Under the deal it struck with Britain, China, France, Russia, the United States and Germany, Iran had committed to hold no more than 300 kilograms of uranium enriched at 3.67%, with any excess sold on the international market or down-blended back to natural uranium levels.

Iran also agreed to accumulate no additional heavy water, with both limits lasting for 15 years.

In exchange for the limitations on its nuclear program, which also included no enrichment of uranium at higher levels that could be used for nuclear weapons, Iran won relief from sanctions that had badly hurt its economy.

But Iran has continued to struggle economically, especially after U.S. President Donald Trump abandoned the nuclear deal last year and put in place sanctions threatening punishment to those who do business with Iran's important oil sector and its banks. Last week, the United States ended waivers that had allowed some of Iran's biggest oil buyers to continue their purchases.

The U.N.'s nuclear watchdog agency has certified in multiple reports that Iran was abiding by its pledges under the agreement. Trump has long objected to the deal, particularly that it did not address Iran's ballistic missile program.

Another chief critic, Israeli Prime Minister Benjamin Netanyahu, responded to Iran's announcement by vowing his government would not allow Iran to obtain a nuclear weapon.

Iran says its nuclear program was only for peaceful purposes, and that it has the right to develop the missiles as part of its national defense.

China expressed its support for the nuclear agreement, with a foreign ministry spokesman calling on all parties to uphold the deal and saying China opposes U.S. imposition of unilateral sanctions.

<https://www.voanews.com/a/iran-nuclear-deal/4908547.html>

[Return to top](#)

The Hill (Washington, D.C.)

## **Tensions with Iran Escalate beyond War of Words**

By Rebecca Kheel

May 6, 2019

Tensions between the United States and Iran are reaching a boiling point as the first anniversary of President Trump's withdrawal from the Iran nuclear deal approaches.

The Trump administration on Sunday said a U.S. carrier strike group is headed to the region in response to unspecified "troubling and escalatory indications and warnings."

The following day, several official and semi-official Iranian news agencies hinted at responses coming later this week to mark Trump's announcement on May 8, 2018, to abandon U.S. participation in the 2015 accord. Those responses could reportedly include Iran reducing its compliance with the agreement, officially known as the Joint Comprehensive Plan of Action (JCPOA).

"As the one year anniversary of the U.S. withdrawal from the JCPOA fast approaches, Washington is ratcheting up the pressure on Iran through diplomatic, economic, and now even military means," Behnam Ben Taleblu, a senior fellow at the Foundation for Defense of Democracies, said in an email to The Hill.

The Trump administration has been ramping up criticism of Tehran considerably in recent weeks, with more sanctions expected in the coming days.

The administration last month took the unprecedented step of designating Iran's Islamic Revolutionary Guard Corps (IRGC) a "foreign terrorist organization," the first time the United States has used the label on an entire government entity.

At the time of the designation, opponents warned that Iranian and Iranian-backed forces in the region could retaliate against U.S. troops, such as those in Iraq operating in proximity with IRGC-aligned militias.

U.S. intelligence has now reportedly assessed a threat against American forces from Iranian and proxy forces, prompting Sunday night's announcement about the carrier deployment.

Iran hard-liners in Congress cheered the deployment and warned against any attack on U.S. forces.

"We will not distinguish between attacks from Shia militias in #Iraq & the #IRGC that controls them," Sen. Marco Rubio (R-Fla.) tweeted Monday. "Any attack by these groups against U.S. forces will be considered an attack by #Iran & responded to accordingly."

Critics, though, suggested threats against U.S. forces were inevitable after Trump's terrorist designation against the IRGC.

"When I was in Baghdad last month, our diplomatic and military leaders were almost unanimously opposed to the designation because of its practical impact on our objectives in Iraq," Sen. Chris Murphy (D-Conn.) tweeted Monday.

"Drawing a hard line on Iran in Iraq might sound good on paper, but it might end up w our troops getting kicked out of Iraq again, opening the door for ISIS," he added in another tweet. "That would be much more disastrous than the inconvenience of leaving the IRGC off the list of terrorist groups."

Trump last year withdrew from the international nuclear accord, calling it the "worst deal ever negotiated." The Obama-era agreement between Iran and the United States, European Union,

Germany, United Kingdom, France, Russia and China gave Tehran billions in sanctions relief in exchange for curbs on its nuclear program.

Europe has been scrambling to save the deal, but Iran appears increasingly impatient as the Trump administration tightens sanctions and as Europe's efforts to provide a sanctions workaround fall short.

Iran's official IBID news agency said Monday that the country would resume some nuclear activities, while the semiofficial ISNA and Fars news agencies ran stories promising "reciprocal" actions on the first anniversary of Trump's withdrawal.

IBID said Iranian President Hassan Rouhani would announce a reduction in some of the country's "minor and general" commitments. The Fars report quoted Ali Akbar Salehi, head of Iran's Atomic Energy Organization, as saying in December his country could ignore the limit on uranium enrichment "whenever we wish, and would do the enrichment at any volume and level."

ISNA specified that withdrawing from the deal is "not considered as an option for now," but that the country's action will be in line with an article of the deal that says Iran will treat the reimposition of sanctions "as grounds to cease performing its commitments under this JCPOA in whole or in part."

Those remarks came a day after national security adviser John Bolton said the USS Abraham Lincoln strike group and a bomber task force are deploying to the U.S. Central Command region "to send a clear and unmistakable message to the Iranian regime that any attack on United States interests or on those of our allies will be met with unrelenting force."

"The United States is not seeking war with the Iranian regime, but we are fully prepared to respond to any attack, whether by proxy, the Islamic Revolutionary Guard Corps, or regular Iranian forces," Bolton said in a statement.

Other Trump administration officials on Monday cited a threat from Iran but did not provide details.

Acting Defense Secretary Patrick Shanahan said there was a "credible threat" by Iranian forces.

"We call on the Iranian regime to cease all provocation," Shanahan tweeted. "We will hold the Iranian regime accountable for any attack on US forces or our interests."

Secretary of State Mike Pompeo told reporters traveling with him in Finland that the United States has "continued to see activity that leads us to believe that there's escalation that may be taking place."

The Navy first announced in early April that the Lincoln was deploying to sail around the world, from Norfolk, Va., to its new home in San Diego. Fleet trackers like the U.S. Naval Institute showed Monday that the carrier was in the central Mediterranean Sea, an area that's part of U.S. European Command.

But it is not uncommon for the U.S. to deploy carriers to the Persian Gulf; the USS John C. Stennis was in the region two months ago.

Those factors, combined with Bolton's outspoken support for military action in the lead-up to the Iraq War, prompted critics to accuse the national security adviser of using a routine carrier deployment to unnecessarily escalate tensions with Iran.

"Members of the Trump administration appear to be repeating the George W. Bush administration's playbook for war with Iraq," Jamal Abdi, president of the National Iranian American Council, said in a statement. "Bolton has gone into overdrive in recent weeks to spur Iranian retaliation to justify

his reckless aggression—including using the routine deployment of an aircraft carrier group to the Persian Gulf to threaten ‘unrelenting force’ against Iran.”

Chief of Naval Operations Adm. John Richardson on Monday confirmed that the Lincoln’s deployment had been planned “for some time now.”

But he also suggested the carrier is being moved from where it was initially planned to be at this point, at the direction of Bolton and Shanahan.

“This is the beauty of having a dynamic force,” he tweeted. “The @USNavy can easily maneuver to protect national interests around the globe.”

Shanahan referred to the move as a “prudent repositioning of assets” in his Monday tweet.

Later that day, the Department of Defense issued a statement saying it “remains integrated with the rest of the government’s efforts to address malign Iranian behavior. DoD retains a robust military capability in the region that is ready to respond to any crisis.”

Speaking earlier at the Sea-Air-Space conference in Maryland, Richardson sidestepped a question about whether the security situation in the Middle East has changed.

“If you just read ... Bolton’s remarks, you’ve got the answer to your question,” he told a reporter.

<https://thehill.com/policy/international/442368-tensions-with-iran-escalating-beyond-war-of-words>

[Return to top](#)

The Hill (Washington, D.C.)

## **China Dismisses Suggestion It Will Join US, Russia in Nuclear Arms Talks**

By Brett Samuels

May 6, 2019

China on Monday rejected the idea of trilateral nuclear arms negotiations with the U.S. and Russia after President Trump said he discussed the possibility last week in a call with Russian President Vladimir Putin.

Reuters reported that Chinese Foreign Ministry spokesman Geng Shuang said Beijing’s nuclear arsenal could not be compared to Russia or the U.S., and that it was at the “lowest level” of its national security needs.

“China opposes any country talking out of turn about China on the issue of arms control, and will not take part in any trilateral negotiations on a nuclear disarmament agreement,” Geng said when asked about Trump’s comments, according to Reuters.

Trump was asked last Friday following his phone call with Putin whether the two were discussing extending the Obama-era New Strategic Arms Reduction Treaty (START), which caps the number of nuclear warheads the United States and Russia can deploy at 1,550 each, among other provisions.

The president said he and Putin had talked about the possibility of including China in negotiations.

“I think we’re going to probably start up something very shortly between Russia and ourselves, maybe to start off,” he told reporters during a meeting with the Slovak prime minister. “And I think China will be added down the road. We’ll be talking about nonproliferation. We’ll be talking about a nuclear deal of some kind. And I think it will be a very comprehensive one.”



New START is set to expire in two years, but lawmakers have urged Trump to extend it.

Arms control advocates have raised concerns that Trump will let New START expire after he moved to withdraw the U.S. from the Intermediate-Range Nuclear Forces Treaty earlier this year after alleging Russia was not complying with it.

<https://thehill.com/policy/defense/442243-china-dismisses-suggestion-it-will-join-us-russia-in-nuclear-arms-talks>

[Return to top](#)

VOA (Washington, D.C.)

## **With Missile Test, North Korea Sends Message to Seoul**

By William Gallo

May 6, 2019

SEOUL, SOUTH KOREA —

By conducting what appears to be its first ballistic missile test in a year-and-a-half, North Korea has presented an obvious challenge to U.S. President Donald Trump, who has refused to relax sanctions on Pyongyang.

But the launch also seems intended to pressure South Korean President Moon Jae-in, who has increasingly become the target of North Korea's outrage as nuclear talks with the U.S. falter.

In a test personally overseen by Kim Jong Un, North Korea on Saturday fired a new short-range ballistic missile, analysts said, along with several other projectiles from a multiple rocket launcher, into the sea off its east coast.

Though the launch appears to violate U.N. Security Council resolutions that ban North Korean ballistic missile activity, Trump and other U.S. officials quickly downplayed the importance of the test, pointing out the North did not violate its self-imposed suspension of tests of intercontinental ballistic missiles.

But the launch is tricky for Moon, who wants to continue his signature policy of engagement with North Korea, but risks being seen as weak in the face of continuing North Korean provocations.

North Korea blames Moon for not implementing aspects of the inter-Korean agreements reached during his three summits with Kim over the past year. U.S. and international sanctions have prevented Moon from following through on many parts of the pacts.

North still upset about exercises

Pyongyang is also upset Seoul has gone ahead with joint military exercises with Washington, even though the drills have been scaled back to help facilitate diplomacy with the North.

According to long-time North Korea scholar Robert Carlin, the North Korean test was likely the "corresponding measure" Pyongyang had warned of late last month in a statement blasting Seoul for continuing the military exercises.

In that statement, Kim criticized the scaled-back U.S.-South Korean military exercises as "disguised persistent hostile acts...in other codenames, though they were agreed to be stopped."

While North and South Korea agreed last April to stop “all hostile acts” against each other and eliminate the “danger of war,” the two sides never signed a statement agreeing to completely halt military exercises, and drills have continued on both sides.

Despite the drawdown of U.S.-South Korea exercises, U.S. military officials have said they observed no similar scaling back of regular North Korean military drills.

Firmer response from Seoul?

For its part, South Korea’s presidential office said it is “very concerned” the North Korean missile test violates the spirit of the inter-Korean agreements, and called on Pyongyang to stop acts that raise military tensions.

Seoul’s response stands in contrast to the softer approach of the Trump administration, which has not yet publicly criticized the North Korean launch.

In a Saturday tweet, Trump said he believes Kim “fully realizes the great economic potential of North Korea and will do nothing to interfere or end it. He also knows that I am with him and does not want to break his promise with me.”

U.S. Secretary of State Mike Pompeo also did not criticize the North Korean missile test during three separate television interviews on Sunday morning.

“At no point was there ever any international boundary crossed,” Pompeo told ABC’s This Week. “That is, they landed in the water east of North Korea and didn’t present a threat to the United States or to South Korea or Japan.”

Pompeo said the U.S. is still analyzing the data and considering a response, but that he is confident the launch did not involve intercontinental ballistic missiles and therefore did not violate Kim’s moratorium on missile tests.

“The moratorium was focused, very focused, on intercontinental missile systems, the ones that threaten the United States, for sure,” Pompeo told Fox News Sunday.

Diverging views among, Tokyo, Washington, Seoul?

To some analysts, that suggests the Trump administration is willing to tolerate any North Korean test short of an ICBM, a stance that could unnerve U.S. allies in Northeast Asia.

“Pompeo’s response made no sense as a strategy and undercut our allies in the region,” said Mintaro Oba, a former State Department diplomat focused on East Asia. “He effectively defended the legitimacy of shorter-range North Korean launches.”

“Pompeo could have made all of the right points while also saying that the United States is ready and willing to talk with North Korea at any time, but that it’s critical for Pyongyang to avoid escalating tensions and undermining the diplomatic process,” Oba added.

While the U.S. mainland might only be reached by North Korea’s intercontinental ballistic missiles, South Korea and Japan are within range of the North’s short and medium range arsenal.

“The South Koreans aren’t on board with Pompeo’s ‘test anything you want as long as it can’t reach me’ standard,” Jeffrey Lewis, a North Korea watcher and Director of the East Asia Nonproliferation Program at the Middlebury Institute, said on Twitter.

The U.S. and South Korea have repeatedly insisted they are in broad agreement on North Korea policy, and have attempted to downplay any reported differences of opinion. When disagreements have arisen, it is usually Seoul that is taking the more conciliatory approach than Washington -- making this latest situation a role reversal, Oba said.

Moon is under considerable domestic, as well as international pressure, on North Korea. An increasing number of conservative opposition South Koreans oppose his outreach to the North, viewing it as naive and unsuccessful.

In the days following his first meeting with Kim, Moon's public approval rating was more than 80 percent. It has now slipped to the mid-40s. Adding to Moon's woes, South Korea's economy unexpectedly contracted in the first quarter of 2019.

Moon, whose presidential term isn't up until 2022, still has time to deliver. He remains optimistic about engagement with the North, saying last month he would hold a fourth summit with Kim "any time, any place."

<https://www.voanews.com/a/with-missile-test-north-korea-sends-message-to-seoul/4905612.html>

[Return to top](#)

## COMMENTARY

The Hill (Washington, D.C.)

### **Rethinking Arms Control Should Include China**

By Stephen Blank

May 7, 2019

The emerging strategic situation obliges us to rethink past arms control policies. When the administration exercised its legal right to leave the INF treaty due to Russian cheating, the arms control community almost unanimously argued that this decision undermined the architecture of arms control, endangered the New Start Treaty, and would hand Russia an opportunity to produce such weapons without constraint.

However, we now know that Moscow has deployed 4 battalions of the Novator M9729 missile that broke the INF treaty thus threatening both European and Asian targets. Latvian Foreign Minister Edgars Rinkevics commented that Latvia knew Russia was violating the treaty long before Washington decided to withdraw. Latvia and the U.S. also knew that Moscow had already targeted the Baltic States with four different types of missiles banned under the INF treaty and deployed in Kaliningrad and European Russia.

Since then Russia has also delivered 24 supersonic p-800 (Oniks) anti-ship cruise missiles to the navy this year. In other words, there was and is a strategy behind the deployment of these and presumably other nuclear weapons, which remain the priority procurement for the Russian military.

These missiles were ready for serial production during the life of the INF treaty. This indicates that Moscow recognized no real constraint on its production of these banned system even while the treaty was in force.

Similarly, Ambassador Antonov, despite claiming Moscow's readiness to negotiate a continuation of the New START Treaty, announced that, Russia's new strategic weapons do not come under the NEW START Treaty's rubric. That is, they circumvent the treaty and will not be discussed in any new treaty negotiation, thereby demonstrating the insufficiencies of that treaty and the fatuity of expecting Moscow to negotiate about these weapons in a new round. Nevertheless, President Trump has ordered the administration to prepare a new arms control initiative encompassing both

Chinese as well as Russian nuclear weapons, indicating our intention to restore this “architecture” despite Russian violations of virtually every arms control treaty it has signed.

Yet, here too critics believe this directive represents a ploy engineered by national security advisor John Bolton, a known opponent of arms control, to torpedo the entire process by demanding that China, too, be considered. Yet, whatever Bolton or Trump’s motives might be, insisting that China be a full participant in future arms control negotiations is the right call for several reasons. China has hitherto been a free rider on Russo-American arms control agreements to the point where today China’s formidable nuclear deterrent cannot be verified as to numbers and quality of its weapons. Indeed, independent Russian analysts like Alexei Arbatov have opined that China may actually have several thousand nuclear weapons that threaten both Russia and the U.S. not to mention other Asian countries.

For this reason alone, China ought to be included. But there are other, equally urgent considerations involved here. China also rightly insists that it is a global great power and demands that it be accorded this status. Along with that status should come the responsibility of reducing the overall nuclear threat and submitting its forces to the same inspection and verification regimes that U.S. and Russian forces have accepted. Inspections must be restored so that nobody can circumvent any new treaties and that violations be caught and discussed among the parties to any new treaty.

China’s ongoing refusal to submit to the discipline of such negotiations and treaties can only further poison the strategic atmosphere and raise serious doubts as to its intentions that it proclaims are peaceful. China has also continued for many years to support proliferation to Pakistan and North Korea if not Iran. These episodes are well documented despite China’s alleged support for non-proliferation.

Those concerned about stopping further nuclear proliferation argue that the superpowers must reduce their nuclear arsenals to set an example for everyone else. Clearly, this logic also applies to China especially as nobody knows for sure just how big and how capable its arsenal really is. In view of the unresolved issues pertaining to both Iran and North Korea this argument is not a mere rhetorical device to impede real negotiations. Instead, it goes to the heart of U.S. security and that of its allies in Asia and the Middle East.

Given these arguments about the need to include China, Russia’s long-standing record of cheating, and both those states’ huge nuclear buildup, the need for a new treaty with real teeth and genuine verification is urgent. Whatever the administration’s motives are, as long as neither Beijing nor Moscow enters into serious negotiations there is no architecture of arms control to defend. But even if that architecture existed the first responsibility of any administration is the defense of American interests. Looking the other way while those governments enhance their capability to threaten the U.S. and its allies cannot in any way be accounted as a defense of U.S. interests.

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<https://thehill.com/opinion/national-security/442579-rethinking-arms-control-should-include-china>

[Return to top](#)

War on the Rocks (Washington, D.C.)

## **An Appeal for a Nuclear Perspective in Army Education**

By Brad Hardy

May 3, 2019

Following last year's indications that the United States would withdraw from the Intermediate Nuclear Forces (INF) Treaty, Russian President Vladimir Putin warned that such a move would lower the threshold for nuclear war between the two nations. The 1987 treaty eliminated all ground-based, nuclear-capable weapon systems with ranges of 500 to 5,500 km from each nation's inventory. Despite this warning and citing Russian treaty violations, the United States officially suspended its INF involvement in February 2019, pending full withdrawal later in August. Shortly after, Moscow threatened nuclear strikes on targets within the continental United States, signaling the danger that could arise from the erosion of post-Cold War nuclear arms control.

This sobering 21st century return to a 20th century relationship between the United States and Russia requires military planners to consider the expanding role nuclear weapons now have. Recent Russian development of low yield, sub-kiloton nuclear weapons such as tactical Close Range Ballistic Missiles and dual-use cruise missiles should give Army planners in particular considerable pause. Within this context, they need to have some knowledge of U.S. nuclear capabilities and planning processes, should they become necessary in a future conflict.

One could assume that Navy and Air Force planners have the market cornered on nuclear matters. These two services operate all three legs of the U.S. nuclear triad — intercontinental ballistic missiles, submarine-launched ballistic missiles, and heavy bombers. Yet in almost all imagined cases, these systems would deliver effects on the land, potentially ahead of or in some proximity to conventional ground maneuver formations. Further, the Army, through the US Army Nuclear and Countering Weapons of Mass Destruction Agency, has a requirement to provide planning capability for the joint employment of nuclear weapons. Army leaders should not consider themselves a service of bystanders in nuclear operations.

Therefore, mid-grade Army officers — the ranks who fill planning assignments on joint and land component commands — must be armed with an understanding of nuclear weapons in deterrence and employment. A nuclear appreciation may be critical to integrate effects, provide options in planning, and offer perspective for senior leader decisions. Unfortunately, there is virtually no curriculum and a tragic lack of emphasis on nuclear matters within the current Army professional military education pipeline to gain these skills.

Nuclear education used to be a core component of Army professional military education and required reading along with contemporary doctrine. AirLand Battle doctrine, the grandfather to current Unified Land Operations doctrine, anticipated nuclear use in concert with conventional operations. Yet for understandable reasons, the priority has atrophied since the end of the Cold War.

Nuclear studies at the Command and General Staff School peaked at 600 hours of core curriculum by 1960. However, nuclear treaties and the overwhelming, non-nuclear, conventional success during the Persian Gulf War drove a decline in demand for nuclear education at the staff college. Further, the 1991–92 Presidential Nuclear Initiatives mandated the withdrawal and elimination all non-strategic nuclear weapons from Europe. This forced the end of most nuclear training and education at the U.S. Field Artillery School — then the proponent for Army nuclear capabilities such as the Pershing II missile and W82 nuclear artillery shell. For nearly the past 20 years, operational requirements have driven the study of low-intensity conflict and Army officers have rightly become professionals in it. However, this has come at the expense of high-intensity warfare, to include

nuclear planning, doctrine, and operations a generation of officers understood, lived, and breathed not too long ago.

Outside the Functional Area 52 Nuclear and Counterproliferation career path, the only options for nuclear education for an Army major or lieutenant colonel may be at the Defense Nuclear Weapons School. Headquartered at Kirtland Air Force Base and subordinate to the Defense Threat Reduction Agency, the school offers or hosts a broad menu of courses on nuclear issues. In particular, the U.S. Army Nuclear and Countering Weapons of Mass Destruction Agency runs the Theater Nuclear Operations Course. While an outstanding, voluntary course, much of the Theater Nuclear Operations Course material is not — but should be — part of a core professional military education curriculum. Little service-wide nuclear education implies there is no common appreciation for nuclear deterrence, triad capabilities, nuclear doctrines of potential adversaries, or options of integrating nuclear with conventional operations. Army planners who are unable to speak this nuclear language may struggle to provide nuclear options in planning. They may dismiss this kind of recommendation altogether assuming it is too unlikely or disproportional, an artifact from bygone days of warmaking and deterrence messaging among great powers.

Yet here we are, faced with a strategic environment involving renewed great power competition among nuclear-capable adversaries preparing its force for a tactical nuclear fight. In this light, mid-grade Army officer education — Captains Career Courses, Intermediate Level Education, and potentially the Advanced Military Studies Program — should include nuclear considerations as a part of their lesson plans. This will provide officers who serve on planning staffs at division, corps, service component, and joint force commands with baseline insights into nuclear deterrence and operational integration.

To produce officers capable of meeting this emerging requirement, the following topics may be useful. They come from the work the Basic Strategic Art Program, the qualification course for Functional Area 59 Army Strategists, has done to ensure its graduates have experience in deterrence and nuclear planning. One does not suggest other Army schools should adopt everything here, but consider it a menu of practical options, scalable to any level, all in order to get students thinking nuclear.

### Nuclear Deterrence Theory

Theory is foundational to explaining the phenomenon of war and useful in anticipating future trends and behaviors. Professional military education should include some theoretical discussion to frame out nuclear history and identify current and future trends. Readings may include excerpts from Thomas Schelling's *Arms and Influence* or Bernard Brodie's *Strategy in the Missile Age*, both foundational works on nuclear deterrence. Beatrice Heuser's *The Evolution of Strategy* develops several enduring strategic themes within a nuclear context such as deterrence by denial or punishment, the Clausewitzian "maximum exertion of strength," war termination, and moral issues. Lawrence Freedman's concise book (a modest 140 pages, considering the broad survey it provides), *Deterrence* offers a solid appreciation for the theory as one facet of coercive strategy. Freedman provides a chapter in Peter Paret's *Makers of Modern Strategy* that covers the evolution of U.S. deterrence policy, weapons development, and challenges of extended deterrence within NATO. Countless works could make the list, but these may be the most available, accessible, and broad enough to provide a solid foundation for the Army professional. More importantly, they highlight deterrence as a coercive strategy and the role nuclear capability plays as a major (if not ultimate) deterrent among great power adversaries.

### Nuclear Deterrence in Practice

Assuming nuclear non-use is a good thing, then an historical study of how the United States and others have deterred conflict from escalating to the nuclear level may be useful. Deterrence history should focus on how the shadow of nuclear weapons kept a limited conventional conflict from growing into something more serious.

A prime example is non-use during the Korean War, a case where U.S. senior leadership considered nuclear weapons, but constrained operations to conventional means. Nina Tannenwald, Director of the International Relations Program at Brown University, describes the evolution of a nuclear taboo that has precluded the nuclear option from the end of World War II through the various setbacks in Korea. Moral revulsion, disproportionality, a lowered threshold for future use, and even fears of racism precluded nuclear use in Korea. However, there is a practical strategic lesson in the narrative.

Although nuclear use on Chinese targets in Manchuria would have provided an operational effect in stymieing third-party intervention, non-use allowed the war to stay limited — even if bloody and inconclusive — geographically to the Korean peninsula. One of Truman's fears was that a nuclear attack would induce the Chinese to invade and retake Taiwan, expanding the theater of war in the Pacific. The United States did employ nuclear capability elsewhere, however, during the same period to deter other would-be adversaries. Truman ordered nuclear-capable B-29 strategic bombers to Great Britain to ward off any Soviet impression of military weakness they may have gleaned from Korea and opportunistic moves in Europe. From this or many other case studies, students could appreciate the vertically escalating potential of nuclear weapons and their ability to neutralize horizontal escalation across regions and threats.

Korea, 1950 to 1953, provides a good illustration on nuclear theory in practice for the Army planner, but other examples exist: the Berlin Crisis of 1961, the Cuban Missile Crisis, Able Archer 83, or more contemporary situations such as India-Pakistan tensions or North Korea 2017–2018. The intent is for a post-Cold War generation of practitioners to explore nuclear deterrence from recent history through today. They may realize that the mere existence of nuclear weapons, like the notion of a fleet-in-being, provides a continuous means to deter and influence adversaries.

The 2018 Nuclear Posture Review and Nuclear Capabilities.

The Nuclear Posture Review is the most strategic, current, and publicly available document the Defense Department has that describes U.S. nuclear policy and arsenal. It should fall alongside discussion of other defense and national strategy capstone documents. The review may be the ideal point to discuss characteristics of the nuclear triad — potentially an unfamiliar notion to younger Army planners — to include benefits and limitations of each leg.

Since the 2018 Nuclear Posture Review, nuclear modernization and development has returned to a top Defense priority. Students should explore the history of the Army's role in the nuclear enterprise as it sought a niche in the non-strategic ("tactical") arm of nuclear capability. Discussion on the Pentomic Division or nuclear artillery do not need to fall within the museum of Cold War oddities and relics. They can serve as perfect examples of organizational and materiel force management decisions, made by thoughtful people trying to solve operational and strategic problems. They can help explain the interplay among threats, doctrine, budget, and the force. Anticipation of a nuclear battlefield helped shape the development of Active Defense and AirLand Battle doctrine and the "Big Five" weapon systems. Students of war ought to consider how the potential for a nuclear battlefield tomorrow should shape force management, doctrine, and investment decisions today.

Adversary Doctrine and Capabilities

Lessons that have a regional focus must draw the student's attention to the nuclear postures, policies, and known doctrines of potential adversaries. At a more practical level, planning exercises should include considerations for operating on a nuclear battlefield and appreciation for the ranges and yields adversaries could bring to bear in a conflict. Useful, unclassified data for these purposes is widely available. The intent here is for Army officers, as students of the profession, to be as familiar with adversary nuclear capabilities and doctrine as they are with adversary conventional capabilities and doctrine.

### Nuclear-Conventional Integration

Future Army planners should become familiar with how to integrate nuclear and conventional operations and how to provide a nuclear option to a geographic combatant commander. These leaders may have a critical role in ensuring nuclear effects complement a conventional fight. Using the Integrated Weapons of Mass Destruction Toolset — an unclassified “For Official Use Only,” web-based system that requires minimal familiarization to use — students could model nuclear effects in order to offer it as an option during exercise course of action development. Modeled fallout projections would force planners to consider risk to the friendly formations and propose alternative routes to steer clear of radiation. They could become familiar with nuclear strike warning messages to provide safe operating distances for ground forces. In all cases, the tools and considerations for nuclear-conventional integration are practical and useful for Army planners.

Army officers need a more pragmatic appreciation of nuclear weapons to include how they may be a part of their operational or strategic planning in future assignments. Recoding some planning assignments to require the Nuclear Targeting Analyst additional skill identifier may incentivize commands to send more officers through the Theater Nuclear Operations Course in order to achieve it. However, given the grave challenges of likely future conflicts, the Army must inculcate a service-wide nuclear perspective across the force through professional military education. The above is a recommendation for Army course authors and instructors to consider as a menu of perspectives to include in their curriculum. It is also a recommendation as a start for self-study and development, just as it has been for this author. More importantly, developing a new generation of Army officers, educated in nuclear planning and proficient in operating on a nuclear battlefield, has a deterrent value all its own. Considering the current adversarial conditions with Russia, planners need to stop considering nuclear weapons as something different and unspoken, but as a likely tool should the call be made.

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<https://warontherocks.com/2019/05/an-appeal-for-a-nuclear-perspective-in-army-education/>

[Return to top](#)



## ABOUT THE USAF CSDS

The USAF Counterproliferation Center (CPC) was established in 1998 at the direction of the Chief of Staff of the Air Force. Located at Maxwell AFB, this Center capitalizes on the resident expertise of Air University — while extending its reach far beyond — and influences a wide audience of leaders and policy makers. A memorandum of agreement between the Air Staff's Director for Nuclear and Counterproliferation (then AF/XON) and Air War College commandant established the initial personnel and responsibilities of the Center. This included integrating counterproliferation awareness into the curriculum and ongoing research at the Air University; establishing an information repository to promote research on counterproliferation and nonproliferation issues; and directing research on the various topics associated with counterproliferation and nonproliferation.

In 2008, the Secretary of Defense's Task Force on Nuclear Weapons Management recommended "Air Force personnel connected to the nuclear mission be required to take a professional military education (PME) course on national, defense, and Air Force concepts for deterrence and defense." This led to the addition of three teaching positions to the CPC in 2011 to enhance nuclear PME efforts. At the same time, the Air Force Nuclear Weapons Center, in coordination with the AF/A10 and Air Force Global Strike Command, established a series of courses at Kirtland AFB to provide professional continuing education (PCE) through the careers of those Air Force personnel working in or supporting the nuclear enterprise. This mission was transferred to the CPC in 2012, broadening its mandate to providing education and research on not just countering WMD but also nuclear operations issues. In April 2016, the nuclear PCE courses were transferred from the Air War College to the U.S. Air Force Institute for Technology.

In February 2014, the Center's name was changed to the Center for Unconventional Weapons Studies (CUWS) to reflect its broad coverage of unconventional weapons issues, both offensive and defensive, across the six joint operating concepts (deterrence operations, cooperative security, major combat operations, irregular warfare, stability operations, and homeland security). The term "unconventional weapons," currently defined as nuclear, biological, and chemical weapons, also includes the improvised use of chemical, biological, and radiological hazards. In May 2018, the name changed again to the Center for Strategic Deterrence Studies (CSDS) in recognition of senior Air Force interest in focusing on this vital national security topic.

The Center's military insignia displays the symbols of nuclear, biological, and chemical hazards. The arrows above the hazards represent the four aspects of counterproliferation — counterforce, active defense, passive defense, and consequence management. The Latin inscription "Armis Bella Venenis Geri" stands for "weapons of war involving poisons."

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