



UNITED STATES AIR FORCE CENTER FOR
**UNCONVENTIONAL
WEAPONS STUDIES**

OUTREACH JOURNAL

Issue No. 1279
1 September 2017

Feature Item

“Identification of High Confidence Nuclear Forensics Signatures”. Published by the International Atomic Energy Agency; August 2017

http://www-pub.iaea.org/MTCD/Publications/PDF/TE-1820_web.pdf

As a means to prevent and respond to a nuclear security event, nuclear forensics provides information on the origin and history of nuclear and other radioactive materials out of regulatory control in the context of legal proceedings under international or national law relating to nuclear security. By bridging nuclear science, law enforcement and nuclear security, nuclear forensics depends on diverse disciplines and technical capabilities. The strength of a nuclear forensic examination is not contingent upon a single technology but is instead derived from demonstrated confidence in conclusions following laboratory analysis and data interpretation. Innovation in nuclear forensic methodologies is driven by science and research. For this reason, the IAEA has prioritized coordinated research projects (CRPs) in nuclear forensics as a means to provide scientifically validated and objective solutions to promote confidence in the conclusions following a nuclear forensic examination. In addition, CRPs provide a mechanism to build confidence in nuclear forensics by sharing the experience of researchers and examiners from around the world.

As States utilize nuclear forensics as a preventive and response to a nuclear security event, confidence in the findings from a nuclear forensic examination is essential. Because nuclear forensics supports law enforcement investigations and nuclear security vulnerability assessments, the scientific methods supporting the examination need to be fully validated and defensible.

Recent research focuses on the identification of nuclear forensics data characteristics (or signatures), their accurate measurement and prediction, the controls over their incorporation and persistence across the nuclear fuel cycle, and how signatures can be exploited as part of a nuclear forensic examination.

The outcomes of this CRP highlight the development of new nuclear forensic analytical techniques to include nuclear and radioactive material age dating (i.e. time of production), morphology studies of nuclear materials to trace origin and history, investigation of nuclear microparticles, the role of modelling to identify the origin of spent nuclear fuels, as well as the application of rare earth elements to differentiate uranium ores and concentrates. Researchers note that multiple signatures are necessary for building confidence in the conclusions reached by nuclear forensic examiners.

TABLE OF CONTENTS

US NUCLEAR WEAPONS

- [Lower-Yield Weapons Will Raise, Not Lower, The Threshold For Nuclear Use](#)
- [New LRSO Nuclear-Armed Cruise Missile Vs High-Tech Air Defenses](#)
- [Boeing And Northrop Grumman Win Large Nuke Contract](#)
- [America Is Building A New, Stealthy Nuclear Cruise Missile](#)

US COUNTER-WMD

- [Preventing A Nuclear 'Dirty Bomb' Attack](#)
- [Bolster Missile Defenses Against North Korea; Could Help With China](#)
- [Nano Chip System Measures Light From Single Bacterial Cell To Enable Chemical Detection](#)
- [New App To Help Customs Officers Improve Radiation Detection For Nuclear Security](#)

US ARMS CONTROL

- [The Hwasong That Never Ends](#)
- [US Deployment Of New B61-12 Nukes To Europe Would Violate Non-Proliferation Treaty – Moscow](#)
- [A Uranium Bank Just Opened In Kazakhstan To Stop The Spread Of Nukes](#)
- [Former UN Ambassador John Bolton Has A Plan To Pull Out Of The Iran Deal. It's Bad.](#)

ASIA/PACIFIC

- [What stopped Japan from intercepting North Korean missile?](#)
- [Indonesian Militants Planned "Dirty Bomb" Attack: Sources](#)
- [SDF conducts PAC-3 missile defense drills](#)
- [North Korea: The End of the Nuclear Taboo?](#)

EUROPE/RUSSIA

- [Russia Fears New U.S. Nuclear Arms Make Bombing More Likely](#)
- [B61-12 Bomb Tests: US-NATO Send Strong 'Signal' To Russia](#)
- [France's Nuclear Arsenal Could Kill Millions Of People In Minutes](#)
- [Can Germany Be Europe's Nuclear Bridge Builder?](#)

MIDDLE EAST

- [Iran Rejects U.S. Demand For U.N. Visit To Military Sites](#)
- [Obama Admin Hid Intel On Iranian Militants In Syria To Push Nuclear Deal](#)
- [Toxic Connection: North Korea's Chemical Weapons Link To Syria](#)
- [Americans Will Reject Bolton's Anti-JCPOA Plan](#)

INDIA/PAKISTAN

- [US Worried Pakistan's Nuclear-Weapons Could Land Up In Terrorists' Hands: Official](#)
- [While North Korea Fires Missile, Nuclear-Armed China And India Stand Down](#)
- [India's Rising Nuclear Trade Aspirations](#)
- [China Learns In Border Row India Will Not Buckle Over Security](#)

COMMENTARY

- [Americans Are A Little Too Relaxed About Nukes](#)
- [Biosecurity And Synthetic Biology: It Is Time To Get Serious](#)
- [The Need For New Space-Based Missile Defense Systems](#)
- [Treaty On The Prohibition Of Nuclear Weapons: Why Finland Is Not Supporting It](#)

US NUCLEAR WEAPONS

Defense One (Washington, DC)

Lower-Yield Weapons Will Raise, Not Lower, the Threshold for Nuclear Use

By Derek Williams & Adam Lowther

August 29, 2017

Giving the U.S. president more flexible options will improve deterrence.

With a new Nuclear Posture Review (NPR) under development, there is opportunity to reconsider some current assumptions about nuclear deterrence and policy. For example, there is tacit acceptance within the U.S. government that the United States will not develop new nuclear warheads, new military missions for nuclear weapons, or new military capabilities for nuclear weapons because, as suggested, doing so would reduce the threshold for nuclear weapons use. Often called the “three nos,” this view is not based on evidence and may actually have the opposite effect: lowering an adversary’s nuclear threshold. Here’s why.

In December, the Defense Science Board recommended developing lower-yield (primary only) nuclear-tipped ballistic missiles. This was met with confusion and outrage by some members of Congress, who concluded that the Defense Department was looking to develop highly usable “tactical” nuclear weapons. This could not be less correct.

All U.S. ballistic nuclear missiles are “strategic” because of both their operational employment and the implications of their use. However, just as the yields of successive generations of intercontinental and submarine-launched ballistic missiles declined as they became more accurate, so should the yield of future generations of ICBMs and SLBMs.

It is important to remember that the warheads currently employed on the nation’s nuclear missiles were designed before the age of highly accurate guidance technologies. The accuracy of ballistic missiles in the early 1970s was significantly less than what we expect to be the case for the Ground Based Strategic Deterrent, the replacement for the Minuteman III.

The need to move beyond a nuclear stockpile largely designed in the 1970s is becoming pressing. Earlier this month, Gen. Paul Selva, vice chairman of the Joint Chiefs of Staff, called for increasing low-yield nuclear options. In congressional testimony, he said, “If all you have is high-yield weapons to answer a low-yield attack, it’s still a nuclear attack. Answering that with a conventional weapon is likely not going to have the kind of deterrent value as saying, ‘Even if you use a low-yield weapon, we have options to respond.’” This was met with skepticism by lawmakers who mistakenly took Gen. Selva’s comments to mean he is advocating for limited nuclear war.

In fact, he was advocating for a capability that strengthens the credibility of American deterrence and thereby decreases the likelihood of nuclear weapons use. The goal is to prevent the United States from finding itself in a situation where the only two options are suicide or surrender.

What is often forgotten is that the enemy always gets a vote. Americans, and those with our values, do not control when nuclear weapons will be used. We can only control our own actions while attempting to influence the actions of others. This concept is at the heart of deterrence—influencing an adversary to choose inaction over action. Deterrence occurs in the mind of an adversary. The choices we make in selecting the weapons we field plays a central role in shaping the decisions that an adversary makes.

If an adversary believes we have no credible options to respond to their aggression, the decision calculus may shift from inaction to action as the risks are seen to no longer outweigh the rewards.

This creates what has been called the choice of surrender or suicide. Russia's "escalate-to-deescalate" strategy — or as the commander of U.S. Strategic Command, Gen. John Hyten, has recently referred to it, "escalate-to-win" — is premised on the Russian perception that the United States lacks a credible tactical (lower-yield) nuclear capability.

In short, Vladimir Putin believes the United States lacks the will and the weapons to respond not only to limited nuclear war, but the cohesive use of nuclear deterrence for political gain. We must address this perceived gap in both will and capability if the United States is to maintain a credible deterrent in the years to come.

As far as capabilities are concerned, we must ensure that the U.S. president has flexible options that are credible in the eyes of President Putin. This is done not to make limited nuclear war more likely, but to deter Putin's escalate-to-win strategy. If Putin understands the U.S. does have a credible response, he will see that the rewards of inaction outweigh the risks of action. This raises the nuclear threshold rather than lowering it. Demonstrating to an adversary that the United States has an appropriate response for any nuclear use will ultimately strengthen deterrence.

Some may argue that America's conventional superiority serves this role, but this view fails to understand how humans perceive risk. Explained in its simplest form, no conventional weapon generates the same perception of risk in the human mind as does a nuclear weapon. Thus, the threat of a conventional attack does not, nor will it, lead to the same level of risk aversion—deterrence—that a nuclear weapon generates.

The line of thinking advanced by conventional weapons proponents encourages Putin to view the use of tactical and strategic nuclear weapons as separate and distinct, which is dangerous for the United States and NATO. When we do not realize the physiological difference between nuclear and conventional weapons we encourage Putin's miscalculation. This may reinforce his misplaced belief that the U.S. will be self-deterred if he uses one or a small number of low-yield tactical/theatre nuclear weapons.

Arms control advocates argue that escalation cannot be controlled once a nuclear weapon is used. Such a view lacks historical basis. We have never witnessed a nuclear exchange between adversaries, which makes such a view highly speculative. The closest the world has seen is a small number of cases where adversaries were very careful in controlling escalation. The Cuban Missile Crises and the Kargil War are two examples.

These conflicts saw nuclear brinkmanship, but no actual nuclear weapon use. Escalation was controlled and both sides were able to prevent nuclear war. Since escalation control will never be a one-sided decision, we must provide the president options to deal with any situation in which an adversary believes the United States can be forced to capitulate because of a lack of options.

Eliminating the outdated thinking of a post-Cold War era that looked very different 25 years ago is needed. The nation needs enhanced nuclear capabilities to ensure that our deterrent remains credible.

http://www.defenseone.com/ideas/2017/08/lower-yield-weapons-will-raise-not-lower-threshold-nuclear-use/140610/?oref=defenseone_today_nl

[Return to top](#)

Scout Warrior (Minnetonka, MN)

Air Force Advances New LRSO Nuclear-Armed Cruise Missile

By Kris Osborne

August 28, 2017

US Air Force weapons developers believe the emerging nuclear-armed Long Range Stand-Off weapon will enable strike forces to attack deep within enemy territory and help.

US Air Force weapons developers believe the emerging nuclear-armed Long Range Stand-Off weapon will enable strike forces to attack deep within enemy territory and help overcome high-tech challenges posed by emerging adversary air defenses.

A cruise missile armed with nuclear weapons could, among many things, potentially hold targets at risk which might be inaccessible to even stealth bombers, given the growing pace at which modern air defenses are able to detect a wider range of aircraft - to include the possibility of detecting some stealth bombers.

As a result, senior Air Force leaders continue to argue that engineering a new, modern Long-Range Standoff weapons with nuclear capability may be one of a very few assets, weapons or platforms able to penetrate emerging high-tech air defenses. Such an ability is, as a result, deemed crucial to nuclear deterrence and the commensurate need to prevent major-power warfare.

Therefore, in the event of major nuclear attack on the US, a stand-off air-launched nuclear cruise missile may be among the few weapons able to retaliate and, as a result, function as an essential deterrent against a first-strike nuclear attack.

"Deterrence works if our adversaries know that we can hold at risk things they value. This weapon will enhance our ability to do so," Air Force Secretary Heather Wilson said in a written service statement.

With this goal in mind, the Air Force recently awarded two \$900 million LRSO deals to both Raytheon and Lockheed Martin as a key step toward selecting one vendor for the next phase of the weapon's development. Due to fast growing emerging threats, the Air Force now envisions an operational LRSO by the end of the 2020s - as opposed to prior thoughts they it may not be ready until the 2030s.

"LRSO will provide the next generation strategic deterrent missile for the air-launched portion of the nuclear triad," David Helsel, LRSO program director at Lockheed Martin Missiles and Fire Control, said in a written statement.

The LRSO will be developed to replace the aging AGM-86B Air Launched Cruise Missile or ALCM, currently able to fire from a B-52. The AGM-86B has far exceeded its intended life span, having emerged in the early 1980s with a 10-year design life, Air Force statements said.

Unlike the ALCM which fires from the B-52, the LRSO will be configured to fire from B-2 and B-21 bombers as well, service officials said; both the ALCM and LRSO are designed to fire both conventional and nuclear weapons.

While Air Force officials say that the current ALCM remains safe, secure and effective, it is facing sustainment and operational challenges against evolving threats, service officials also acknowledge.

The rapid evolution of better networked, longer-range, digital air-defenses using much faster computer processing power will continue to make even stealth attack platforms more vulnerable; current and emerging air defenses, such as Russian-built S-300s and S-400s are able to be cued by lower-frequency "surveillance radar" -- which can simply detect that an enemy aircraft is in the

vicinity -- and higher-frequency “engagement radar” capability. This technology enables air defenses to detect targets at much farther ranges on a much larger number of frequencies including UHF, L-band and X-band.

Russian officials and press reports have repeatedly claimed its air-defenses can detect and target many stealth aircraft, however some US observers believe Russia often exaggerates its military capabilities. Nonetheless, many US developers of weapons and stealth platforms take Russian-built air defenses very seriously. Many maintain the existence of these systems has greatly impact US weapons development strategy.

Accordingly, some analysts have made the point that there may be some potential targets which, due to the aforementioned superbly high-tech air defenses, platforms such as a B-2 stealth bomber or services now-in-development next-generation bomber, the B-21, might be challenged to attack without detection.

<http://scout.com/military/warrior/Article/New-Air-Force-Nuclear-Armed-Cruise-Missile-Deal-Designed-to-Thwa-106612013>

[Return to top](#)

The Manufacturer (London, UK)

Boeing and Northrop Grumman Win Large Nuke Contract

By Michael Cruickshank

August 27, 2017

US defense manufacturers Boeing and Northrop Grumman have been jointly awarded the first stage in a giant contract to revamp the United State's nuclear missile fleet.

The US Air Force awarded Boeing a \$349m contract and Northrop Grumman a similar \$329m one to order to advance new intercontinental nuclear missile technology.

Specifically, the Air Force is looking for a replacement for its aging fleet of Minuteman III missiles, many of which date back to the 1970s.

These missiles, which are currently the only land-based nuclear missile in service in the US arsenal are predicted to vulnerable to certain countermeasures available within the next two decades.

Boeing was the prime manufacturer of the Minuteman III and thus its inclusion in this project was almost assured as it is one of the few companies in the US with recent experience in building ICBMs.

“Since the first Minuteman launch in 1961, the U.S. Air Force has relied on our technologies for a safe, secure and reliable ICBM force,” said Frank McCall, Boeing director of Strategic Deterrence Systems and GBSD program manager.

“As the Air Force prepares to replace the Minuteman III, we will once again answer the call by drawing on the best of Boeing to deliver the capability, flexibility and affordability the mission requires.”

Lockheed Martin on the other hand also bid for some of this development money, however, was in the end not chosen to take part in the program. The company has announced that it will attempt to appeal this decision by the Air Force.

Once a design has been finalized the companies will compete for a much larger contract in 2020 to actually manufacture these missiles.

This manufacturing contract would be one of the largest defense contracts in US history, with some estimates putting it in excess of \$85bn.

Given the size of the deal, as well as recent global pressure towards nuclear disarmament, it is very politically contentious.

Nonetheless, US president Donald Trump has committed to reinforcing all aspects of the US's nuclear deterrent, something which could be seen as more justified in the face of the nuclear threat posed by North Korea.

<https://www.themanufacturer.com/articles/boeing-northrop-grumman-win-large-nuke-contract/>

[Return to top](#)

Popular Mechanics (New York, NY)

America Is Building a New, Stealthy Nuclear Cruise Missile

By Kyle Mizokami

August 24, 2017

Long Range Stand Off Weapon is meant to fight a nuclear war. Critics charge it could start one.

The U.S. Air Force yesterday awarded two \$900 million contracts to Lockheed Martin and Raytheon to develop a new, nuclear-armed cruise missile. The Long Range Stand Off Weapon, or LRSO, is meant to modernize the offensive punch of American bombers, keeping even older planes such as the B-52 relevant. Critics, however, argue that as older nuclear cruise missiles age out they should not be replaced, as they increase the likelihood of a misunderstanding that could lead to nuclear war.

In a statement, U.S. Secretary of the Air Force Heather Wilson said about LRSO, ""This weapon will modernize the air-based leg of the nuclear triad. Deterrence works if our adversaries know that we can hold at risk things they value. This weapon will enhance our ability to do so, and we must modernize it cost-effectively." "

The United States Air Force will buy 1,000 LRSOs, which will equip the B-52H Stratofortress, B-2A Spirit, and forthcoming B-21 Raider bombers. (The B-1B bomber has been designed a conventional-only bomber.) The Air Force believes the LRSO is critical to keeping the old, lumbering, non-stealthy B-52H in the country's nuclear arsenal. The B-52H currently operates the AGM-86B cruise missile in the nuclear role, while the B-2A carries only B61 free-fall nuclear bombs. The B-21 Raider, when it comes to fruition many years from now, will probably carry everything.

The justification for nuclear cruise missiles is that in the event of a nuclear war, bombers can launch them toward distant targets without getting too close to enemy air defenses. A stealthy bomber armed with LRSOs could use them to punch its way through enemy defenses, nuking fixed anti-air missile, radar, and command-and-control sites in its path before striking the final, main target. Non-stealthy bombers such as the B-52H could stand off at a distance and kick in the door for stealthy bombers (but would be unable to accompany the B-2A and B-21 into hostile enemy territory).

On the other hand, people including former Secretary of Defense William Perry charge that nuclear-tipped cruise missiles make accidental nuclear war more likely. (His new op-ed in the Washington Post is called, "Mr. President, Kill the New Cruise Missile.") They say that non-nuclear cruise missiles, which have been used since the 1991 Persian Gulf War, are now a regular part of conventional warfare. Here's a video of Russian nuclear-capable bombers launching Kh-101 cruise missiles (which also have nuclear variants) against targets in Syria:

The existence of nuclear cruise missiles ups the stakes in a conventional war, as an adversary observing a flight of cruise missiles on his radar screens does not know whether he is about to get hit with conventional or nuclear weapons. If the adversary assumes the worst case scenario, he may believe he should launch his own nuclear weapons in response, inadvertently starting a nuclear conflict.

As reported in FlightGlobal, the \$1.8 billion dollar contracts will cover the technology development phase of the missile through 2022. Between now and 2022, the two defense contractors will start nailing down the technologies necessary to bring the missile to life, demonstrate critical technology in prototypes, and complete preliminary design. (For a PowerPoint-friendly, layman-unfriendly, brain-melting guide to the defense acquisition process, see here.)

<http://www.popularmechanics.com/military/weapons/news/a27925/america-stealthy-nuclear-cruise-missile/>

[Return to top](#)

US COUNTER-WMD

RealClear Defense (Chicago, IL)

Preventing a Nuclear 'Dirty Bomb' Attack

By John Ashley

August 29, 2017

In 1985, medical equipment containing cesium-137 was abandoned in a radiotherapy center in Goiânia, Brazil. Two years later, scrap-metal salvagers illegally entered the partly-demolished facility and took the equipment. Unaware of the threat posed by the radioactive source, the salvagers subsequently began dismantling the equipment and brought it to a dealer, where the capsule containing the cesium-137 was ruptured. Not realizing what the blue glowing material was, the dealer gave some to his friends and family as a gift. It was not long before the cesium-137 spread, and the people of Goiânia began suffering from acute radiation poisoning. The surrounding area had to be extensively and thoroughly decontaminated – 249 people and 85 houses were contaminated from radiation exposure.

It is not too hard to imagine what could happen if someone with malicious intent, or a terrorist group such as Daesh, got hold of the abandoned cesium-137 source in Goiânia. This incident is a prime example of the dilemma posed by “orphan sources,” or radiological sources that have been abandoned or improperly disposed of. Even sources currently in use can present a risk if they are not properly secured. The best way to defend against radiological weapons is to secure and monitor potential sources of radiological materials, shifting from reactive seizures to proactive oversight. This includes everything from nuclear waste to radiotherapy equipment such as those abandoned in Goiânia.

In an open letter to U.S. President Donald Trump and Russian President Vladimir Putin, former UK Defense Secretary Des Browne, former German Ambassador to the United Nations Wolfgang Ischinger, former Russian Foreign Minister Igor S. Ivanov, and former U.S. Senator Sam Nunn called on the two presidents to work together to prevent Daesh from acquiring radioactive materials. The signatories specifically cited poorly secured sources in hospitals and universities. Such a proactive approach will not only make border screening, the approach traditionally relied upon to stanch the

flow of illegal nuclear material, easier, but will ensure that radioactive sources can be tracked and cared for properly. However, the only actions that have been implemented so far are reactive.

The Domestic Nuclear Detection Office (DNDO) and the Container Security Initiative (CSI), created in the wake of the September 11 attacks, are working to secure the United States' ports from potential attacks and prevent radiological materials from illicitly entering the United States. While these initiatives are vital to prevent the use of a radiological device on U.S. soil, this reactive approach still allows non-state actors to acquire the materials to build – and potentially use – a functioning radiological weapon abroad. It is more responsible to block non-state actors from ever getting the opportunity to construct a radiological device in the first place. Furthermore, agencies such as the DNDO and CSI are not infallible, and securing the United States' ports of entry is an arduous and complex task.

So why has a more proactive approach not been implemented? The most significant obstacle is a lack of political will, particularly in less-developed states, due to corruption, lack of resources/training, or other concerns monopolizing government attention. Unfortunately, these states also have a higher risk of radiological sources becoming orphaned, as seen in Goiânia, Istanbul, and Samut Prakan. Governments must find the political will to devote the time and energy necessary to secure and track radiological sources. Luckily, there are organizations willing to help in this endeavor.

The International Atomic Energy Agency (IAEA) advocates for IAEA leadership in this regard, promoting its security Code of Conduct as the best way forward. The IAEA, though, does not have the capacity to help train everyone in the best practices of radiological source security. Fortunately, there are many nonprofits that are willing to support these efforts. The James Martin 'at the Middlebury Institute of International Studies has been assisting the Moldovan government in tracking radiological sources. This “on-the-job” training lays the groundwork for the kind of lasting political will necessary to have effective security. The Center for International Trade and Security (CITS) at the University of Georgia conducts a bi-annual Security & Strategic Trade Management Academy with the goal of educating government officials from around the world on different security options and the importance of good security culture.

Security culture is the idea that staff dealing with radiological sources (or other hazardous materials) must always be on alert for suspicious activity and follow all security procedures to the letter. Creating good security culture will foster political will that keeps a state's security measures effective over time. Adopting, implementing, and committing to the Code of Conduct, with help from nonprofits such as CNS and CITS, is the quickest way to shore up security of radiological sources.

Terrorist groups such as al-Qaeda and Daesh have long been interested in developing weapons of mass destruction, particularly radiological weapons. While steps have been made to reactively defend against radiological smuggling, not enough has been done to proactively ensure the security of radiological sources. Without a proper understanding of the dangers posed by unsecured orphan sources and the will to proactively secure them, the threat of an incident much worse than Goiânia remains a frightening possibility.

http://www.realcleardefense.com/articles/2017/08/29/countering_the_nuclear_dirty_bomb_threat_at_112176.html

[Return to top](#)

Breaking Defense (New York, NY)

Bolster Missile Defenses Against North Korea; Could Help With China

By Jon Glassman

August 28, 2017

What should the United States and its allies do to improve their ability to stop North Korean missiles?

Enhanced missile defense performance would be the best guarantee against a North Korean breakout. Should fighting occur, missile defense performance will determine how much of a time cushion is available to U.S. and allied offensive forces to eliminate the North's missiles.

North Korea's missile testing program has shown capabilities that make our missile defense more difficult. For example, by extending tests to orbit and extending the range of their ICBMs, they have expanded the scope of trajectories and targets we need to defend. By using lofted trajectories, the North has increased re-entry velocity and reduced time for defense. By building mobile launchers and submarine-launched missiles, North Korea has eliminated the defenders' early warning time and reduced its own exposure.

By demonstrating its ability to launch multiple missiles simultaneously, they have complicated our planning. Finally, by creating new threats of global reach, the North has raised the specter of fractional orbital trajectories that allow unpredictable descent paths and, perhaps, the use of electromagnetic pulse (EMP) to cripple the military and civilian infrastructure of the U.S. and our allies. In short, North Korea has increased uncertainty about our ability to respond and increased the time pressure on the US and allies to engage in massive offense or to decide to remain passive.

These new stresses can be met — thanks in part to breakthrough paradigms in signal processing — by sensor, command-and-control (C2), and improvements to our interceptor missiles that deliver much earlier detection and tracking, neutralization of jamming, clutter, and noise, prompt discrimination and kill assessment processing, quicker layered defense engagement planning and faster interception with extended range and secure updating to allow early mid-course and orbital kills.

While major new naval, space, and airborne platforms and related programs are underway, new systems will only come on stream in the early-mid-2020s. And they are subject to serious budgetary and technical risk. To reinforce diplomatic and military efforts in the gap years, we need to see what we can do to enhance existing naval and ground radar signal processing, computation, and communications. In some of these fields, we could work with Japan and the South Korea on co-investments and technical sharing. The current testing of the SM-3 Block 2A missile, co-financed and developed by the United States and Japan, serves as a model. Indeed, the kinematic envelope of the 2A missile, if supported to full extension by appropriate sensor and C2 upgrades, can provide initial capability to neutralize new North Korean challenges.

These unilateral US and cooperative efforts would hopefully give us a credible ability to shoot down North Korean test launches, as well as the means to destroy North Korean nuclear missiles in early mid-course or in orbit. The credibility — and diplomatic bargaining utility — of being able to down North Korean missiles in the early stages of flight could be reinforced by resurrecting development of a higher velocity interceptor — SM-3 Block 2B. Work on that system was suspended in 2013.

Rapid near-term development acquisition of such advanced missile defense capabilities for existing systems to deter and, if necessary, neuter new North Korean missile capabilities — would help provide a sobering effect on Chinese decision-making on future post-2020 options toward Taiwan.

Near-term, qualitative enhancement of existing missile defense systems would give substance to diplomatic entreaties and help protect us and allies should diplomacy fail.

<http://breakingdefense.com/2017/08/bolster-missile-defenses-against-north-korea-could-help-with-china/>

[Return to top](#)

R&D Magazine (Rockaway, NJ)

Nano Chip System Measures Light From Single Bacterial Cell to Enable Chemical Detection

Author Not Attributed

August 30, 2017

Researchers at the Hebrew University of Jerusalem have created a nanophotonic chip system using lasers and bacteria to observe fluorescence emitted from a single bacterial cell. To fix the bacteria in place and to route light toward individual bacterial cells, they used V-groove-shaped plasmonic waveguides, tiny aluminum-coated rods only tens of nanometers in diameter. The novel system, described in the journal *Nano Letters*, paves the way for an efficient and portable on-chip system for diverse cell-based sensing applications, such as detecting chemicals in real-time.

The field of on-chip photonic devices for biological and chemical sensing applications presents many powerful alternatives to conventional analytical techniques for applications ranging from "lab on a chip" to environmental monitoring. However, these sensing schemes rely mainly on off-chip detection and require a cumbersome apparatus, even when measuring only single cells.

The Hebrew University team looked for ways to integrate all system components, including light sources and detectors, on-chip at the nanoscale. This would result in a lab-on-chip system that is small, portable and can perform sensing in real-time.

To achieve this, they molecularly engineered live bacteria that emit a fluorescent signal in the presence of target compounds. They paired these on-chip with a nanoscale waveguide, which not only served the purpose of guiding light, but also allowed mechanical trapping of individual bacteria within the V-groove.

In three different illumination conditions, they experimentally demonstrated the interrogation of an individual *Escherichia coli* bacterial cell using a nanoscale plasmonic V-groove waveguide. First, they measured the light emitted from a bacterium flowing on top of the nanocoupler in a liquid environment by allowing the fluorescence from the bacterium to be coupled directly into the waveguide through the nanocoupler. Next, a bacterium was mechanically trapped within the V groove waveguide and was excited by laser directly either from the top or through the nanocoupler. In all cases, significant fluorescence was collected from the output nano coupler into the detector.

The system worked well both in wet environments, where the bacteria are flowing on top of the waveguide, and in dry conditions, where the bacteria are trapped within the waveguide.

The research was led by Prof. Uriel Levy, Director of The Harvey M. Krueger Family Center for Nanoscience and Nanotechnology at the Hebrew University in collaboration with Prof. Shimshon Belkin, at the Hebrew University's Alexander Silberman Institute of Life Sciences, who genetically engineered the bacterial sensors, and Prof. Anders Kristensen from the Danish Technical University, who was in charge of fabricating the V-groove waveguides. Prof. Levy is the Eric Samson Chair in Applied Science and Technology, and Prof. Belkin is the Ministry of Labor and Social Welfare Chair in Industrial Hygiene, at the Hebrew University.

Unlike the more traditional plasmonic waveguides consisting of either silver or gold, the choice of aluminum was instrumental for being able to guide the fluorescent light emitted from the bacteria all the way to the output nanocoupler. Furthermore, the waveguide dimensions allow for efficient mechanical trapping of the bacteria and the multimode characteristics may become instrumental in gathering more information, e.g., on the specific position and orientation of the bacteria.

The results provide a clear indication of the feasibility of constructing a hybrid bioplasmonic system using live cells. Future work will include the construction of waveguide network, diversifying the system to incorporate different types of bacterial sensors for the detection of various biological or chemical analytes.

<https://www.rdmag.com/news/2017/08/nano-chip-system-measures-light-single-bacterial-cell-enable-chemical-detection>

[Return to top](#)

IAEA (Vienna, Austria)

New App to Help Customs Officers Improve Radiation Detection for Nuclear Security

By Miklos Gaspar

August 22, 2017

Customs officer Mengsrom Song and his colleagues are used to the sound of radiation alarms. One third of cargo container shipments passing through the Phnom Penh Autonomous Port set off alarms on the sensitive radiation portal monitors intended to catch smuggled radiation sources and nuclear material.

All of the alarms since the device was installed in July 2016, however, have been caused by material such as tiles, fertilizers and construction materials, said Song, Deputy Chief of the customs office at the port, located on the Mekong River just outside Cambodia's capital. The port handles a quarter of the country's foreign trade.

"Evaluating radiation alarms represents a huge challenge for us as they require us to perform secondary inspections on dozens of containers a day," Song said. "This takes time and resources, and detracts from our other work." Secondary inspections involve the time-consuming use of hand-held radionuclide identification devices, which measure the amount of radiation and identify its type and source, as well as analysis of the radiation portal monitor's data to check the commodity type and origin.

A customs officer performing a secondary inspection on a truck that set off the port's radiation alarm. He is using a hand-held device. (Photo: M. Gaspar/IAEA)

A new smart phone application launched by the IAEA will help distinguish between alarms due to harmless amounts of naturally occurring radiation and alarms that might be a cause for concern from a security standpoint and warrant further investigation.

The app is the outcome of an IAEA coordinated research project that aims to improve the assessment of initial alarms. Researchers from the IAEA and 20 countries have worked together to improve the alarm assessment process by developing tools and algorithms for the detection software, with the goal of enabling it to distinguish between radiation from potentially smuggled man-made sources and naturally occurring radiation.

The key to the research is to be able to distinguish between the radiation characteristics of these different substances, said Charles Massey, nuclear security officer at the IAEA, who coordinates the

research. The distinction cannot be based on the quantity of radiation, because the detectors need to catch even small amounts of nuclear or other radioactive material that may be present. Instead, researchers are looking into ways to identify the make-up of radiation from different isotopes that characterize each material. The software will need to identify and record these, so that it can screen out radiation from naturally occurring materials that match these profiles. This would filter out most of the innocent alarms, allowing customs officers to concentrate on the remaining unclear cases.

Even while researchers are working on new algorithms for use in software programmes that will be installed in the detection systems, the new app called TRACE (Tool for Radiation Alarm and Commodity Evaluation) includes a detailed compendium of naturally occurring radioactive substances and their typical radiation characteristics. “This is a big step in the right direction, as using the app will reduce the time spent deciding whether a container setting of the alarm requires further investigation,” said Sokkim Kreng, customs officer at Cambodia’s largest sea port in Sihanoukville.

IAEA guidance recommends that countries use radiation detection equipment as part of their national nuclear security programmes to check commercial goods exports and imports, as a way to intercept smuggling in nuclear and radioactive material.

<https://www.iaea.org/newscenter/news/new-app-to-help-customs-officers-improve-radiation-detection-for-nuclear-security>

[Return to top](#)

US ARMS CONTROL

Arms Control Wonk (Washington, DC)

The Hwasong that Never Ends

By Scott LaFoy

August 28, 2017

Here we go again: another guide to North Korean missile designations.

You might be asking yourself, “Self, why do I need to learn all these pesky Hwasongs if I already know all the KN numbers? Surely they’re just different names for the same things?” Well, to quote the Tweeter-in-Chief, “It’s an unbelievably complex subject.” Granted, he was talking about health care, but I stand by that quote — missile designations are mighty confusing.

Here’s the deal: as I explained in my previous post, there is no uniform designation system for North Korean missiles. The US uses a patchwork of two different systems, one based on KN (Korea, North) numbers, and another based on the location where it was first tested — these generally don’t overlap, as the KN system was likely introduced when the US ran out of place names. NATO also has its own naming system, although with the exception of the STORMPETREL (also known as the KN-01) these don’t often appear in open-source reports.

Finally, there’s the North Korean naming system — the focus of this listicle. With the exception of the two Pukkuksongs (KN-11 and KN-15), the Kumsong-3 coastal defense cruise missile launcher (KN-19), and the Pongae SAM systems, North Korea generally designates its missiles as “Hwasong” (화성) — the Korean name for the planet Mars (literally “Fire Star”) — followed by a number.

The nice thing about the Hwasong system is that, chronologically speaking, it's much easier to follow than either of the US systems. Because of the competing American naming systems, it's not immediately clear whether the KN-08 or the Nodong-C came first (trick question: they're the same missile! But you get my point). However, it's pretty clear that the Hwasong-10 came before the Hwasong-11 or -12.

This makes the Hwasong system much more interesting than the American systems, as you can infer a lot about missile development timelines simply by looking at the order of the Hwasong numbers. On the flip side, it also helps us make inferences about which pieces of hardware could fit some of the missing designations. This is where it really helps to understand the timeline of the North Korean missile programme. Joseph S. Bermudez Jr. and Daniel A. Pinkston are both excellent resources on this, and this detailed NTI/CNS chronology goes up to 2011.

My thanks to Arms Control Wonk for letting me post a sequel to *The Nerdiest Thing I've Ever Done*, and thanks also go out to all those who have contributed to the open-source repository (especially Vladimir Khrustalev, who managed to confirm several of these designations while visiting the KPA's Museum of Weapons and Equipment in Pyongyang).

This post will go down the Hwasong list from 1-14, including references to alternate names when applicable. The same caveats from the KN list apply here: this list is compiled from open-source data, which can occasionally be contradictory. I'll make a note of conflicting designations and will do my best to update the list as new Hwasongs are introduced. When applicable, I may also re-use some of my notes from the KN list to avoid confusion. Finally, as before, this list is mainly intended as a directory, not as an encyclopedia. There's been some excellent analysis on most of these systems already, but armed with the correct designations you'll now KN-0w where to start looking.

HWASONG-1

This gets complicated right off the bat (did you really expect this to be simple? Shame on you). The Hwasong-1 is the 3R10 Luna-2 artillery rocket fired from a repurposed PT-76 tank chassis. Now, because this is a Soviet system delivered to the DPRK in the late 1960s, I'll pause for a quick and painful note on Soviet nomenclature (I'm so sorry): Soviet designations use both an index number and a reporting name. This seems simple enough, but here's the tricky bit: the index numbers of missile complexes (the missile plus the TEL and any ancillary equipment) and the missile itself are different. The former usually contains the letter "K" while the latter uses "R" or "M." So in this case, the "3R10" is the index number for the artillery rocket itself; "2K6" is the index number for the entire complex; and "Luna-2" is the corresponding reporting name. NATO in turn designates the complex as FROG-5. The rocket is solid-fueled, unguided, and spin-stabilized, with a range of 15-55 km. Bermudez reports that the DPRK acquired approximately 27 to 63 Hwasong-1 rocket systems with 9 TELs from the USSR in 1968, as one of the first weapons consignments between the two countries. The Soviets only provided high explosive (HE) warheads to the DPRK; however, evidence suggests that the North Koreans were able to produce their own chemical warheads for the Hwasong-1.

Alternate name(s): FROG-5, 3R10 Luna-2, 2K6.

HWASONG-2

I'm going to skip the Hwasong-2 because there isn't any confirmed open-source reporting on it, but see my note at the end of this list for my hypothesis as to what it might be.

HWASONG-3

Ready for a Soviet missile nomenclature lightning round? (Don't lie, I know you aren't) The Hwasong-3 is the 9M21 Luna-M artillery rocket, which is part of the corresponding 9K52 rocket

complex, an upgrade to the 2K6 complex of the Hwasong-1. The Hwasong-3 is a significant improvement on the Hwasong-1 in terms of range and accuracy, and can be fitted with locally-produced chemical warheads. Due to the growing rift between the USSR and the DPRK in the 1970s, the North Koreans were limited to sourcing these newer systems from Egypt, who had received a larger consignment of Luna-M systems years earlier from the Soviets. Bermudez reports that the DPRK acquired approximately 24 to 56 Hwasong-3 rocket systems with 6-8 TELs from Egypt in 1975 and 1976. The Hwasong-3 uses a different TEL to the Hwasong-1: an eight-wheeled ZIL-135LM artillery truck, introduced in 1964. Okay, that's it — no more Soviet designations, I promise.

Alternate name(s): FROG-7, 9M21 Luna-M, 9K52.

HWASONG-4

We're going to skip this one as well for the same reason as the Hwasong-2. But see my note at the end of this list, I have thoughts on this.

HWASONG-5

The Hwasong-5 is North Korea's very first ballistic missile, and is based off of a reverse-engineered Soviet R-17E (which also holds the more well-known NATO designation of Scud-B) acquired from Egypt in 1979 or 1980. The Hwasong-5 matches the Scud-B in most technical specifications — albeit with a slightly improved range and guidance system — and is fired from a MAZ-543 TEL. The DPRK reached full-scale production capability for the Hwasong-5 in 1986, and phased it out in 1989 with the introduction of the improved Hwasong-6. In the late 1980s, the DPRK exported a number of Hwasong-5s to Iran (where they are known as the Shahab-1) and to the UAE (where they were immediately put into storage due to performance issues).

Alternate name(s): R-17E, Scud-B.

HWASONG-6

The Hwasong-6 is essentially an upgraded version of the Hwasong-5, with the most important difference being an extended range (500-700 km) which could hold the entirety of South Korea at risk. Full-scale production began in 1990 or 1991, and most Hwasong-6s were assigned to locally-produced versions of the MAZ-543 TEL. Like the Hwasong-5, the Hwasong-6 was exported to Iran and given the name Shahab-2.

Alternate name(s): Scud-C.

HWASONG-7

The Hwasong-7 is what is more commonly and hilariously referred to as the Nodong (Get those jokes out of your system before we move on). The Hwasong-7 MRBM was developed in the late 1980s with the intent of delivering a nuclear warhead to Japanese targets. To that end, the missile itself is basically a wider, elongated Hwasong-6 with an upgraded engine and guidance system. Not-so-coincidentally, Iran and Pakistan currently field nearly-identical missiles in their respective arsenals (the Shahab-3 and the Ghauri-I). The Hwasong-7 is often misidentified as the ER-Scud in open-source reporting, but Vladimir Khurstalev confirmed in his Pyongyang visit that the ER-Scud carries the Hwasong-9 designation instead.

Alternate name(s): Nodong, Rodong.

HWASONG-8

Skipped again, for lack of data. See my note at the end of this list.

HWASONG-9

Let me start by saying that this is my least favourite missile designation, and it's going to be yours too. The Hwasong-9 is the missile that the US government designates as the KN-04, which is somewhat of a cross between the Hwasong-6 and the Hwasong-7. For some frustrating reason it also carries three competing Scud designations: ER-Scud (unofficial), Scud-D (unofficial), and Scud 2 (official). But if you call it the Scud 2 we can't be friends. #NotMyKN04

Alternate name(s): KN-04, ER-Scud, Scud-D, Scud 2.

HWASONG-10

The Hwasong-10 is the IRBM more commonly known as the Musudan. Derived from the Soviet R-27 Zyb SLBM (which NATO designates as the SS-N-6 SERB), the Musudan has made headlines over the past year for supposedly being 'hacked out of the sky' (a dubious claim in my opinion: if the Musudan guidance system is based on the 1960s-era R-27 system then it would basically be just as impossible as hacking a mechanical typewriter). We also saw the Hwasong-10 at #JucheFest2017 with a helpful new black paint job (as you might have noticed, it's often pretty difficult to tell apart most images of Hwasong-5, -6, -7, -9, and older images of -10).

Alternate name(s): Musudan, BM-25.

HWASONG-11

Vladimir Khrustalev confirms the Hwasong-11 to be the missile more commonly known as the KN-02 "Toksa" SRBM. Designed for precision strikes, the Hwasong-11 is possibly the most accurate missile in the DPRK arsenal. The Hwasong-11 is road-mobile and is fired from a locally-constructed variant of a Belarusian MAZ-630308-224 or -243 6x4 or 6x6 commercial heavy utility truck. See CNS' model here. There is probably an extended range version, but it isn't clear whether it actually has a different designation.

Alternate name(s): KN-02, Toksa ("Viper").

HWASONG-12

The Hwasong-12 is a liquid-fuelled IRBM first revealed at #JucheFest2017 and successfully flight tested on May 14th on a lofted trajectory. It is likely to be single-stage (although this is unconfirmed). The range is estimated as 3,700-4,500 km, and it is road-mobile, using a MAZ-based launcher similar to that used by the Musudan. The Hwasong-12 is the missile that would theoretically be used in the proposed enveloping strike at Guam.

Alternate name(s): KN-17.

HWASONG-13

The Hwasong-13 designation is unique in that it likely corresponds to three different KN numbers, all of which are mods of the same ICBM. The DPRK has used Hwasong-13 to refer to the KN-08 (original three-stage version from 2012), the KN-14 (shortened two-stage version revealed in 2015), and a new missile design revealed in August 2017 whose KN number has yet to be revealed (when it is, I will update the KN list accordingly).

Alternate name(s): KN-08, KN-08 mod 2, KN-14, Rodong-C.

HWASONG-14

The Hwasong-14 is the ICBM first tested on Independence Day, which the US government designates as the KN-20. The Hwasong-14 was originally misidentified as the KN-14 two-stage ICBM, but as previously mentioned, that system carries the Hwasong-13 designation instead.

Alternate name(s): KN-20.

THE UNKNOWNNS

We have three unknowns (Hwasong-2, -4, and -8), but unlike the KN list, the logical order of the Hwasong list offers up some clues. So... ready to take some fun guesses?

Let's start with the Hwasong-2 and -4. Bermudez suggests that by 1975, the primary elements of the DPRK missile programme consisted of short-range FROG-5s and -7s (Hwasong-1 and -3), slightly longer-range HQ-2/SA-2s with surface-to-surface missions (my guess is that the original surface-to-air versions were instead given the Pongae designation, which has previously been used for SAM missions like the KN-06), and a proposed DF-61 programme. This would make the HQ-2/SA-2 family of missiles a likely candidate for the Hwasong-2 designation, as these systems were delivered and upgraded between the two FROG consignments. This would also mesh with Bermudez's data point that a defector identified the Hwasong-2 as an SSM.

Following on from that, it would fit that the Hwasong-4 is the designation for the Chinese DF-61 programme which was intended for export to North Korea. As reported by Bermudez, The DF-61 was a proposed liquid-fueled SRBM with a 600 km range, which would allow the DPRK to strike targets anywhere in South Korea. The programme was cancelled in 1978 after project leader General Chen Xilian was removed from his post in the Chinese Central Military Commission. Until its cancellation, the DPRK had considered the DF-61 to be the central piece of its ballistic missile arsenal, so it would make sense for them to assign it a Hwasong number and then retire the -4 designation like some kind of famous baseball player (fun fact: there are a surprising number of baseball players with missile-related nicknames).

The Hwasong-8 is trickier. Based on the timelines, we're probably looking for a system dating to the 1990s. The Taepodong-1 — North Korea's first space launch vehicle (SLV) which began development in the early 1990s — immediately comes to mind; however, it appears that the Taepodong-1 (a US designation) SLV was named Paektusan by the DPRK. It is possible though, that the missile was originally intended to carry a warhead, in which case it may have carried a Hwasong designation (reserved for offensive systems) before being re-assigned with an SLV mission and re-designated as Paektusan, a name which carries enormous symbolism in North Korea (Kim Jong-il was supposedly born on Mount Paektu, which is featured prominently on the national emblem and throughout DPRK propaganda).

Absent any hard data, these are simply my best guesses based on the timelines and my own research. But just as before, if you know something I don't, please get in touch.

Before I sign off, let's take a minute to appreciate the fact that a North Korean-induced nuclear winter would be a literal (Hwa)Song of Ice and Fire (although to be fair, Daenerys already has an army of No-dongs).

<http://www.armscontrolwonk.com/archive/1203797/the-hwasong-that-never-ends/>

[Return to top](#)

RT (Moscow, Russia)

US Deployment of New B61-12 Nukes to Europe Would Violate Non-Proliferation Treaty – Moscow

Author Not Attributed

August 29, 2017

Washington will violate its commitment to the Non-Proliferation Treaty if it deploys the new B61-12 nuclear bombs to NATO allies in Europe, the Russian Foreign Ministry has warned. The statement comes after the recent second test of the weapon.

“The most recent variations of the B61-12 bombs are also designed for deployment to the territory of a number of NATO countries in Europe for use as part of the so-called nuclear missions involving pilots from the alliance’s non-nuclear member-states,” the director of the Russian Foreign Ministry’s Department for Non-Proliferation and Arms Control Department, Mikhail Ulyanov, told TASS news agency.

“According to our assessment, this runs counter to the NPT [the Non-Proliferation Treaty] commitments,” the Russian diplomat said on Tuesday after the US National Nuclear Security Administration (NNSA) announced it had conducted the second successful flight test of B61-12 gravity nuclear bombs in Nevada.

Ulyanov recalled his previous doubts about the upgraded weapon, which he says could “lower the threshold of using nuclear weapons.”

“US military specialists claim that this bomb will be more ethical and more usable, because it has greater accuracy and results in less catastrophic effects for civilians if used on vast areas,” Ulyanov said.

“This prompts the conclusion that when they go operational, such bombs may objectively lower the threshold of using nuclear weapons. We see this as the key negative effect of the ongoing upgrade work.”

The US has repeatedly accused Russia of NPT violations to cover the upgrade of its own nuclear arsenal, the diplomat believes.

“There is such a feeling that these accusations serve also as a smoke screen to modernize rather dangerous US potential,” Ulyanov stated.

The editor-in-chief of National Defense magazine, Igor Korotchenko, warned that the second test of the nuclear bomb could indicate that the US is speeding up its rearmament program while “both Washington and Brussels are considering the scenario of a limited nuclear war in Europe.” He added that NATO forces have already conducted drills in the Baltic Sea, including mock nuclear strikes on Russia.

“During regular exercises, including those in the Baltic Sea, the air forces of NATO countries have repeatedly carried out combat training tasks involving tactical nuclear strikes on targets located in the northwest of our country,” the military observer told RIA Novosti on Tuesday.

It is not the first time Moscow has voiced concern over the possible consequences of US nuclear modernization plans. In 2016, Ulyanov said that the new B61-12 weapons would not necessarily be used solely by the US, but delivered to NATO allies in Europe, including Belgium, Germany, Italy, the Netherlands and Turkey.

“That is when the negative impacts of the modernization will truly be felt,” the diplomat said, adding that the renewal of the US nuclear arsenal in Europe means a long-term extension of NATO's

joint nuclear missions, which “flagrantly violate the spirit and contents of the Treaty on the Non-Proliferation of Nuclear Weapons.”

Back in 2016, Moscow also vowed to respond with “adequate” counter-measures to US plans to expand its nuclear potential.

The first production of the new B61-12 nuclear weapon is scheduled for 2020, and will see it replace the B61 nuclear gravity bomb, the oldest weapon in the US stockpile, according to the NNSA.

Some 180 B61 bombs are housed at NATO bases in five European countries mentioned by Ulyanov – Italy, Belgium, the Netherlands, Turkey and Germany – according to a report by the Peace Action group. At the same time there are “approximately 300 more B61 nuclear weapons in storage in the United States,” according to the organization’s estimates.

“The B61-12 LEP will deliver the new capability of being able to lower the explosive yield and will include a new tail kit that will give the nuclear weapon a new \$800 million precision guidance capability – these same capabilities were rejected by Congress in 1994 over concerns they would lead to more useable nuclear weapons,” Peace Action stated. The report added that “increasing capabilities of nuclear weapons goes against the spirit and the letter of international agreements, NATO’s Deterrence and Defense Review adopted in May 2012, and US nuclear policy.”

<https://www.rt.com/news/401344-b61-deployment-non-proliferation-treaty/>

[Return to top](#)

The Washington Post (Washington, DC)

A Uranium Bank Just Opened in Kazakhstan to Stop the Spread of Nukes

By David Filipov & Joby Warrick

August 29, 2017

Arms control advocates Tuesday celebrated the opening of an internationally supported repository for nuclear reactor fuel that its backers believe will dissuade countries interested in nuclear power from developing the capability to make atomic weapons.

Enriching uranium, the technology that produces fuel for a nuclear power plant, is also the process for creating a nuclear bomb, meaning that the risk of proliferation spreads when individual countries build their own fuel-making facilities.

The International Atomic Energy Agency’s low-enriched uranium bank, opened Tuesday in Kazakhstan, is the culmination of a years-long effort to respond to this risk. The agency, which will run the “bank” independently of any country, will purchase and store low-enriched uranium, fuel for civilian reactors but not an ingredient for nuclear weapons.

The uranium repository is also a rare bright spot in the rocky U.S.-Russian relationship. Russia is a leading global supplier of uranium to the nuclear power industry, and has its own uranium repository. Moscow was initially cool to the idea of an independently run uranium bank that might be seen as a competitor. Ultimately, however, Moscow agreed to support the project. Both Russia and China granted transit rights for uranium fuel being shipped to and from the Kazakh facility.

“Russia played an absolutely critical role in negotiating a transit agreement,” said Andrew Bieniawski, who oversees projects related to the security and minimization of nuclear materials for

Nuclear Threat Initiative. The Washington-based non-profit provided the initial funding for the bank courtesy of a \$50 million investment from American billionaire investor Warren Buffett.

Russian Deputy Foreign Minister Sergei Ryabkov, who attended Tuesday's ceremony, hailed the project as "an important element of the international effort not just in nonproliferation but also in the sphere of expansion of the countries that are putting nuclear energy to good use."

"In some ways it's a direct derivative of long-standing U.S.-Russian cooperation on these issues," Ryabkov said.

Those efforts have largely dried up following Moscow's annexation of Crimea in 2014. Other than the notable exception of the Iran nuclear deal, U.S.-Russian programs intended to stop the spread of nuclear weapons materials and negotiations on limiting the two sides' nuclear arsenals have ground to a halt.

"There are a lot more opportunities that are going unaddressed because of the current situation," said Ernest J. Moniz, co-chairman of the Nuclear Threat Initiative and secretary of energy during President Obama's second term.

Moniz said the two sides could be working on nonproliferation issues despite the chilly relationship. The Nuclear Threat Initiative and the Moscow-based Center for Energy and Security Studies earlier this year compiled a catalogue of dozens of possible U.S.-Russian projects in nuclear cooperation.

Arms-control advocates have expressed hope that the Trump administration's modest support for the uranium bank will signal a willingness to invest in other nuclear nonproliferation initiatives

U.S. backing for the uranium bank includes nearly \$50 million in federal financial support pledged by the administration of George W. Bush, which, like the Obama White House, embraced the bank concept with enthusiasm. The Trump administration signed off on the U.S. aid package, but did not send a high-level delegation to the ceremony in Kazakhstan.

The White House's early budget proposals have called for cuts in funding for international nonproliferation programs, and President Trump's campaign speeches at times advocated expanding the U.S. nuclear arsenal while also suggesting that more countries should develop nuclear weapons.

Shortly after taking office, the administration launched a comprehensive review of U.S. nuclear weapons policy, with results expected to be announced as early as this fall.

The Trump White House has "not yet put forward a coherent philosophy about how they will address one of the president's greatest responsibilities," said Daryl Kimball, executive director of the Arms Control Association, a Washington nonprofit that advocates increased efforts to safeguard or eliminate weapons of mass destruction. "I am quite concerned about our ability to provide the necessary leadership to advance constructive ideas to reduce risk."

Other donors include Norway, the United Arab Emirates, the more than two dozen countries in the European Union, Kuwait, and Kazakhstan.

"The bank will play an important role in reducing nuclear dangers and serve as a vivid example of the benefits of international cooperation at a time when our world is in a race between cooperation and catastrophe," said former U.S. senator Sam Nunn, co-chairman of the Nuclear Threat Initiative, in a packed auditorium in Kazakhstan's capital, Astana.

The ceremony took place on the 26th anniversary of Kazakhstan President Nursultan Nazarbayev's decision to shut one of the Soviet Union's two major nuclear test sites, in Semipalatinsk. In 1995,

Kazakhstan turned over to Russia the 1,410 strategic nuclear warheads the Soviets had stationed on its territory, as well as an undisclosed number of short-range nuclear weapons.

“The will of the people of Kazakhstan was stronger than the Cold War,” Nazarbayev said at Tuesday’s ceremony.

The audience, which included officials from nations that donated to the project, was shown a video feed from the new bank in Ust-Kamenogorsk, about 600 miles of largely empty steppe east of Astana. The glistening repository was empty except for circular white racks that will hold the fuel.

Eventually, the bank will hold 90 metric tons of low enriched uranium, enough to produce fuel to power a large city for up to three years.

Low-enriched uranium fuel will be purchased on the market from a commercial supplier and stored in the Kazakh repository until needed. Countries applying to receive the fuel would be required to pay the market rate.

The bank essentially guarantees that fuel for nuclear power plants will be available, in the case of future disruptions to global uranium markets, to member states of the IAEA who are in good standing with their nonproliferation obligations.

“It gives countries the kind of assurances they need to not rely on their own enrichment,” Nunn said in an interview before the ceremony.

It’s also intended to make governments resist the temptation to build their own factories to make enriched uranium.

“Countries would have to justify to their own citizens why they were spending money to go into their own enrichment with a small nuclear program,” Nunn said in an interview.

While 31 countries around the world operate nuclear power plants, only 14 produce their own nuclear fuel. The others purchase low-enriched uranium from a handful of international suppliers, mainly in Russia, the United States and Europe. More than 40 countries are actively planning or considering new nuclear power plants to help meet growing energy demands, according to the World Nuclear Association. The list includes wealthy countries such as Saudi Arabia and Singapore as well as developing African countries such as Tanzania and Ghana.

While the commercial uranium market is more than adequate to meet the growing demand, some countries could be tempted to manufacture their own enriched uranium as a hedge against future disruptions to the global supply caused by war or political crises. Iran cited concerns over market disruptions as the primary reason for constructing its massive Natanz uranium enrichment plant.

https://www.washingtonpost.com/world/a-uranium-bank-just-opened-in-kazakhstan-to-stop-the-spread-of-nukes/2017/08/29/fd19fc9a-8c63-11e7-a2b0-e68cbf0b1f19_story.html?utm_term=.cc710e4abae6

[Return to top](#)

Vox (New York, NY)

Former UN Ambassador John Bolton Has a Plan to Pull Out of the Iran Deal. It's Bad.

By Zeeshan Aleem

August 29, 2017

The reasoning is eerily reminiscent of the runup to the Iraq war.

Former US Ambassador to the United Nations and uber-hawk John Bolton says that former White House chief strategist Steve Bannon asked him to draw up a plan for how to withdraw from the Iran nuclear deal in July. But after the White House ejected Bannon in August, Bolton lost access to the administration and his plan never made it to Trump's desk.

Now he's decided to publish his plan publicly, and it's ... not very good.

The five-page memo is basically a strategic public relations campaign to convince the world that the US has a case for pulling out of the deal. That case hinges on one central claim: that Iran is clearly violating the deal and has thus rendered it a meaningless agreement.

But experts say that this claim isn't grounded in evidence, and that Iran is meeting international standards in complying with the deal's requirements for inspections and monitoring.

Bolton's argument, they say, simply assumes that Iran has nefarious intentions to build nuclear weapons despite the absence of any proof. And some analysts warn that his argument suffers from the same kind of war-hungry reasoning that led the US to invade Iraq on questionable evidence in 2003.

"There's a lot of talk of Iran's noncompliance with the deal, but there isn't a lot of evidence of Iran's noncompliance," Jeffrey Lewis, an arms control expert at the Middlebury Institute of International Studies at Monterey, told me. "That's sort of how Iraq happened, where the Bush administration said, 'Let's go find the evidence of weapons of mass destruction,' rather than asking, 'Does Iraq have weapons of mass destruction or not?'"

In 2015, the Obama administration and its allies struck the nuclear deal with Iran, which called for lifting punishing Western economic sanctions on Iran in exchange for Tehran curbing its nuclear program.

The accord helped cool rising tensions between the US and Iran, which could possibly have led to yet another US military intervention in the Middle East. Tehran has already received tens of billions of dollars in sanctions relief in exchange for shipping out a large chunk of its enriched uranium and taking thousands of centrifuges offline.

In his memo, Bolton asserts that Iran's "outright violations" of the terms of the deal give the US license to scrap the deal and reimpose crippling economic sanctions on the country unilaterally.

But experts say there is no evidence of Iran refusing to comply with the deal in substantial ways.

"Washington's partners in the deal and the European Union have all clearly stated that Iran is complying with the deal, and more importantly, the US intelligence community is pointing to Iran's compliance with the agreement," Kelsey Davenport, the director for nonproliferation policy at the Arms Control Association, told me.

"Based on the evidence that's been presented to the intelligence community, it appears that Iran is in compliance with the rules that were laid out in the JCPOA," Air Force Gen. Paul Selva, the vice chairman of the Joint Chiefs of Staff, told Congress in July.

In the runup to the invasion of Iraq, Bolton served as the undersecretary of state for arms control and international security in the Bush administration. Both Davenport and Lewis point out that he was a key player in pushing for the war based on cherry-picked intelligence suggesting that Iraq's leader Saddam Hussein had weapons of mass destruction.

"Bolton was pretty central to that and he's replicating that experience," Lewis said.

In addition to his concerns about compliance, Bolton also points out that Iran's international behavior is strategically at odds with the US's. Iran backs militant groups like Hezbollah and others that threaten US allies in the Middle East.

But that conduct is not prohibited by the agreement, and it's unclear how pulling out of the Iran deal would allow the US to rein in Tehran.

Davenport points out that there are "clear signals that Washington's partners are not interested in going along with Trump's plan to exit the deal."

Why does that matter? If the US is the only one to scrap the deal and decides to reimpose sanctions, then its penalties won't have much bite. It was the combined force of the international community's isolation of Iran that suffocated its economy and made it inclined to curb its program and negotiate for relief.

Parties to the deal, like France and China, have already begun to do business with Iran again. They're not eager to reverse that without good cause.

So if the US pulls out of the Iran deal when Iran is in fact complying with it, the other parties to the deal have little reason to join the US in dropping it as well and restarting sanctions. Iran would then be in a better position to pursue nuclear weapons than it was before the deal was struck.

<https://www.vox.com/policy-and-politics/2017/8/29/16219896/john-bolton-plan-pull-out-iran-deal>

[Return to top](#)

ASIA-PACIFIC

Deutsche Welle (Bonn, Germany)

What Stopped Japan From Intercepting North Korean Missile?

By Julian Ryall

August 30, 2017

The altitude and speed of Hwasong-12 would have made it very difficult to destroy missile in flight, while failure would have been embarrassing for Japan and encouraging to North Korea. Julian Ryall reports from Tokyo.

In the aftermath of North Korea's launch of a ballistic missile across Japan early on Tuesday morning, the Japanese government went to great lengths to reassure the public that it is taking all the necessary steps to protect them. In truth, however, there was effectively very little that the Japanese military could have done to neutralize this latest provocation by Pyongyang.

The weapon is believed to have been a nuclear-capable Hwasong-12 intermediate range ballistic missile that was fired from a site close to Pyongyang at 5:57am local time. After ascending over the Sea of Japan, the missile passed over northern Japan at an estimated altitude of 550 kilometers

before apparently breaking into three parts and falling into the Pacific Ocean around 1,180 kilometers east of Hokkaido.

The missile was detected within seconds of launch - almost certainly by one of four US-operated space-based infra-red early warning satellites in geosynchronous orbit above the equator - and Japan's automatic J-Alert system issued warnings to the public through mobile phones, radios and television across northern Japan.

No intercept effort

The Self-Defense Forces tracked the movement of the missile, although they made no attempt to intercept it.

Defense Minister Itsunori Onodera said the decision was made not to try to bring the missile down because it was not aimed at a target in Japan and there was therefore no danger of the projectile coming down on Japanese territory. He added that it was actually over Japan for less than two minutes.

The projectile was apparently tracked by the three Aegis destroyers, each equipped with Standard Missile-3 interceptor missiles that are constantly deployed in the Sea of Japan. A second layer of close-in defense is provided by the Air Self-Defense Force's ground-based Patriot Advanced Capability-3 missiles, with the ASDF's PAC-3 unit in Hokkaido based at Chitose Air base.

"By the time this got over Japan, this thing was very high and moving extremely fast," Lance Gatling, a defense analyst and president of Tokyo-based Nexial Research Inc., told DW.

"It was apparently at an altitude of 550 kilometers when it passed over Hokkaido, which is at the very limit of the intercept range for the SM-3, and any Aegis destroyer would have needed to be in just the right position to intercept," Gatling said. "All in all, it was a pretty low percentage shot if they had gone ahead and ordered it."

Significant risks

There would also have been some significant risks to an attempted intercept, Gatling points out.

"What would Japan have got out of this if they had intercepted the missile? There would have been a whole load of extra space junk either cluttering up the atmosphere and potentially endangering our rockets or resupply missions to the International Space Station, for example," he said.

North Korea would inevitably be put out by any such move, he added, because it is not clear that Japan has the legal right to interfere with another nation's vehicles when they are in space, as opposed to in a nation's airspace.

"It is most certainly discourteous to fire a missile over another country, but it's arguably not illegal," he said.

Arguably the biggest downside of an attempt to intercept the missile would have been if Japan's defenses had failed.

"If they had tried to bring it down and failed, then the consequences would have been serious," said Gatling. "This is a defensive system that Japan has spent a lot of money on and it had come up short in its first test. That would not have looked good domestically, while it would also encourage the North Koreans to think their missiles could not be touched."

Stephen Nagy, a senior associate professor of international relations at Tokyo's International Christian University, agrees that the speed and altitude of the North Korean missile made any attempt to bring it down "extremely challenging."

"Clearly it would have been difficult solely in terms of the time required to gather the information, determine the missile's course and target and then have a decision by the National Security Council on a response," he said. "By the time that had happened, the missile had already come down."

Future responses

The question now might be how Shinzo Abe, the Japanese prime minister, prepares to meet the next missile that is fired from North Korea - the likelihood of which increased sharply on Wednesday after state media reported that Kim Jong Un has defiantly ordered more missile tests landing in the Pacific Ocean.

"The Japanese government is talking about equipping the military to carry out pre-emptive attacks on sites in foreign countries if a direct threat to Japan is identified, although it must be remembered that any such attack on North Korea is likely to be met with an artillery barrage on Seoul," Nagy said.

Estimates have suggested that an artillery strike on the South Korean capital could kill one million people in one minute.

"I expect Japan to work with the US, South Korea and possibly with China to apply more pressure on Pyongyang to squeeze their finances and cut off supplies of the technology and components that they need to make these missiles," he said.

<http://www.dw.com/en/what-stopped-japan-from-intercepting-north-korean-missile/a-40293016>

[Return to top](#)

Jakarta Globe (Jakarta, Indonesia)

Indonesian Militants Planned "Dirty Bomb" Attack: Sources

By Stefano Reinard

August 30, 2017

Indonesian militants planned to detonate a radioactive dirty bomb, security sources said, highlighting the rising ambitions of extremists to wreak destruction in the world's largest Muslim-majority nation.

But experts cast doubt on their expertise, equipment and chances of success.

The plot was foiled when police raided homes and arrested five suspects in Bandung, West Java, last week, the sources with direct knowledge of the plot said. After the raids, police spoke of a plan to explode a "chemical" bomb but provided no other details.

The plot comes as Indonesia grapples with an influx of militants deported from other countries and the fallout from the Islamic State-led siege in the southern Philippines city of Marawi that regional leaders and analysts worry has energized militants across Southeast Asia

The three counter-terrorism sources, speaking on condition of anonymity, said the militants had hoped to transform low-grade radioactive Thorium 232 (Th-232) into deadly Uranium 233 (U-233).

The highly radioactive uranium would be combined with the powerful home-made explosive triacetone triperoxide (TATP) to create a "nuclear bomb", according to an instruction manual used by the militants and reviewed by Reuters.

In fact, the device would be, at best, a radiological dispersal device or dirty bomb that could spray radioactive material when the conventional bomb exploded.

A spokesman for Indonesia's national police, Inspector General Setyo Wasisto, declined to confirm or deny the plot to construct the device, but said it would have been more potent than the two bombs made from TATP that killed three police in Indonesia's capital Jakarta in May.

"If this bomb was finished, it would have had a more destructive impact than the bomb made from 'Mother of Satan'," he said, using the nickname for TATP.

"It could burn anything and make it hard for people to breathe."

Thorium-232 can be transformed into Uranium-233 but requires the Thorium to absorb a neutron, a process that needs powerful irradiation, generally from a nuclear reactor, according to three analysts contacted by Reuters and the website of the World Nuclear Association, which represents reactor vendors and nuclear engineers, among other industry stakeholders.

The militants' manual advised an X-Ray machine or microwave be used instead.

"X rays would not have enough punch to overcome the binding energy of the Thorium atoms," said Peter Hayes, an expert in radiological devices from the Nautilus Institute, in an email.

"And, no, you can't cook Th-232 to make U-233 in a microwave and, if you could, you would have a painful and rapid death from the radioactive nature of the co-present U-232 produced alongside U-233."

One senior Indonesian counter-terrorism source said the Bandung-based cell had bought a large amount of a household item and had begun to extract the Thorium. Reuters has chosen not to name the item.

"They needed three weeks. It was still only one week [into the process when police raided]," the source said.

"A Muslim's Duty"

Indonesia has suffered a series of mostly small attacks by extremists over the past 18 months, although police have disrupted many more.

Indonesian terrorism analyst Rakyan Adibrata fears militants have been inspired by the events in Marawi, where IS fighters continue to occupy part of the city despite a three-month offensive by Philippines force to re-take it.

"They don't have the ability to occupy a city like has happened in Marawi, but they want to do something big that pleases their bosses in Islamic State," said Rakyan.

A radiological bombing could fit the bill, although Rakyan said that it was highly unlikely that the Bandung cell had either "the equipment or the knowledge" to succeed.

Most of Indonesia's recent attacks have involved members of Jamaah Ansharut Daulah (JAD), a pro-IS alliance of Indonesian militants. Many have been directed from Syria by an Indonesian national and JAD leader Bahrin Naim, according to police.

Bahrin is identified as the author on the front page of the 47-page Indonesian-language bomb instruction manual — named "Nuclear for Dummy" [sic] — and posted on a blog that has since been taken down.

"Mastering weaponry is essentially every Muslim's duty," it says.

"This paper, we hope, also can motivate the Muslim mujaheddin to learn nuclear science easily and apply it."

Last week, police said the militants had been working off Naim's manual, but did not disclose its contents.

According to police, the suspected Bandung plotters were members of JAD and were considering targets like the presidential palace in Jakarta and police headquarters in Bandung and the capital.

Two of the five suspects are Indonesian migrant workers deported from Singapore and Hong Kong this year for posting radical Islamist material on social media.

They spent a month or less in a deradicalisation shelter before joining up with the other militants, sources told Reuters.

About 177 Indonesian militants have been deported from other countries this year, according to Rakan, citing the Ministry of Foreign Affairs.

<http://jakartaglobe.id/terrorism/indonesian-militants-planned-dirty-bomb-attack-sources/>

[Return to top](#)

The Japan News (Tokyo, Japan)

SDF Conducts PAC-3 Missile Defense Drills

Author Not Attributed

August 29, 2017

The Air Self-Defense Force conducted rapid deployment drills of Patriot Advanced Capability-3, or PAC-3, ground-to-air missile interceptors at U.S. military bases in the country on Tuesday.

The exercises, aimed at demonstrating Japan-U.S. cooperation, took place at the Yokota base, in Tokyo, and the Iwakuni base, in Yamaguchi Prefecture, at an unusual timing of soon after North Korea launched a ballistic missile over Japan into the Pacific Ocean early Tuesday morning.

"We conducted the drills while maintaining necessary preparations," Lt. Gen. Hiroaki Maehara, commander of the Air Defense Command of the ASDF, told a press conference.

"We had no intention of canceling" the exercises, Maehara said, stressing that they were effective in showing the capabilities of Japan and the United States.

Lt. Gen. Jerry Martinez, commander of U.S. forces in Japan, was absent from the news conference to respond to Pyongyang's latest provocation.

About 45 members of the ASDF Air Defense Missile Group based in Yokosuka, Kanagawa Prefecture, south of Tokyo, carried a PAC-3 battery with dummy missiles into the Yokota base around 7:30 a.m., about 90 minutes after the missile launch.

The ASDF troops checked preparations for missile interception by directing a launcher at the sky.

At the Iwakuni base, 11 vehicles from the Air Defense Missile Group based in Kurume, Fukuoka Prefecture, joined the exercise.

"We conducted the drill to dispel the public's concern," said Kotaro Hyodo, the leader of the group. "We will make full preparations if the situation becomes tense," he also said, stressing that Japan will be able to intercept missiles successfully.

Amid North Korea's repeated provocative acts, the ASDF has conducted PAC-3 missile drills at nine locations across the country, including a Ground SDF camp, since June. It plans to hold a similar exercise at the U.S. military's Misawa base in Aomori Prefecture, northeastern Japan, on Sept. 7.

Under its missile defense system, Japan is supposed to fire Standard Missile-3 missiles from Aegis-equipped ships to intercept a ballistic missile in outer space. If the target is missed, PAC-3 missiles will be launched to destroy it at an altitude of about a dozen kilometers.

<http://www.the-japan-news.com/news/article/0003909025>

[Return to top](#)

The Diplomat (Tokyo, Japan)

North Korea: The End of the Nuclear Taboo?

By Franz Stefan-Gady

August 29, 2017

Is the North Korean nuclear crisis slowly eroding the so-called nuclear taboo?

his summer's nuclear showdown between the United States and North Korea, largely manufactured by the bravado and bluster of the President of the United States, seemed to conclude "not with a bang but with a whimper," until yesterday's missile test overflying Japan. As a result, the underlying question, how to best prevent a U.S.-North Korean nuclear war, as Pyongyang continues to push for "full spectrum deterrence," endures.

Among other things, this summer's crisis highlights the belief held by some U.S. policymakers that an alleged irrational actor such as North Korea cannot be deterred from launching its nuclear missiles by threatening nuclear retaliation. For example, U.S. National Security Advisor H.R. McMaster in an interview this month said that "classical deterrence theory" does not apply to North Korea. At the same time, U.S. officials (including U.S. President Donald Trump) have repeatedly floated the idea of preemptive military strikes against North Korean missile sites as an ostensible last ditch effort to deter Pyongyang.

Given that North Korea has time and again made it clear that it would immediately counter any conventional attack with overwhelming force including nuclear weapons (Vipin Narang has coined this posture "Asymmetric Escalation"), U.S. preemptive military strikes would almost certainly trigger a North Korean nuclear response. North Korea has expanded its nuclear arsenal to up to 30 weapons. Once such a response occurs, the United States might retaliate in kind and launch nuclear missiles. The result would be the end of a powerful moral taboo about the use of nuclear weapons. Indeed, once the spell is broken after the first nuclear bomb has exploded, the likelihood of nuclear war in other parts of the world will have increased markedly.

Underlying the so-called nuclear taboo, a burgeoning international norm against the use of nuclear weapons, is that nuclear deterrence — a function of a country's nuclear capabilities, doctrine, and command and control procedures for launching nuclear weapons — alone has not prevented nuclear war since 1945, but rather a gradual international consensus that prohibits states from ever using the "Bomb." This hypothesis is backed up by the work of several scholars. Nina Tannenwald in an influential paper (followed by a book), argues:

A normative prohibition on nuclear use has developed in the global system, which, although not (yet) a fully robust norm, has stigmatized nuclear weapons as unacceptable weapons of mass

destruction (...) Ultimately, in delegitimizing nuclear weapons, the nuclear taboo has constrained the practice of self-help in the international system. States are not free to resort to nuclear weapons without incurring moral opprobrium or political costs. National leaders are forced to seek alternative technologies for use in war or defense or else risk being classified as outside the bounds of 'civilized' international society.

In her study, Tannenwald acknowledges that given her focus on the United States, her thesis does not hold for all countries. Yet a wargame held in the 1970s in the Soviet Union that involved the Soviet Premier Leonid Brezhnev pushing a button to launch three intercontinental ballistic missiles fitted with dummy warheads indicates that the idea of a nuclear taboo did perhaps go beyond the United States. According to Soviet General Adrian Danilevich, who was present during the exercise:

[W]hen the time came to push the button, Brezhnev was visibly shaken and pale and his hand trembled and he asked Grechko several times for assurances that the action would not have any real world consequences. Brezhnev turned to Grechko and asked, "Are you sure this is just an exercise?"

Furthermore, other scholars have supported Tannenwald's proposition. Jeffrey Lewis states that, "the implication of this norm, of course, is that we can't actually use nuclear weapons." According to Lewis, John Hersey's book *Hiroshima* was an important early contribution paving the way for the nuclear taboo. "Over time, we've come to see nuclear weapons as Hersey saw them, as the ultimate expression of material and spiritual evil of total war," he writes. Yet, Lewis also cautions: "I am glad we've constructed a norm against the use of nuclear weapons, but let's not kid ourselves. We've constructed it. And like any human construction, it can be repurposed."

The academic Steven Pinker sees the gradual establishment of the nuclear taboo as part of a larger "humanitarian revolution" among the public focused on non-combatant immunity. "The nuclear taboo emerged only gradually.... It began to sink in that the weapons' destructive capacity was of a different order from anything in history, that they violated any conception of proportionality in the waging of war." By the 1990s, Pinker reasons, aerial holocausts like Hiroshima, Dresden and North Vietnam were simply no longer politically acceptable to the American public. Yet it remains unclear how rooted this norm against the use of nuclear weapons truly is among people and policymakers.

According to an August 2017 study, when Americans are presented with a trade-off between a U.S. nuclear attack and the death of thousands of American servicemen, a large percentage would approve of nuclear strikes. "Contrary to the nuclear taboo thesis, a majority of Americans are willing to support the use of a nuclear weapon against an Iranian city killing 100,000 civilians," the study finds. "Contrary to the theory that Americans accept the noncombatant immunity norm, an even larger percentage of the U.S. public was willing to kill 100,000 Iranian civilians with conventional weapons." Indeed, Americans are willing "to kill two million Iranian civilians to save 20,000 U.S. soldiers."

Also, despite what the film *War Games* suggests, there appears to be little hesitation among missile crews to fire intercontinental ballistic missiles in real life, according to Ron Rosenbaum in his book *How the End Begins*:

It would be nice to believe. But that certainly did not filter down to the missile crewmen I interviewed, who were mainly concerned (...) with making sure they could carry out the genocidal threat of deterrence. Instead, it was almost taboo (...) to talk about reasons for not committing retaliatory genocide, such as questioning the sanity of whoever gave the order.

In addition, it is impossible to ascertain whether the nuclear taboo would influence individual leaders during an international crisis, for example, when the launch of Russian intercontinental missiles has been detected. Furthermore, the causal relationship between the nuclear taboo and

nuclear deterrence remains underexplored. For example, what often could be seen as evidence of the nuclear taboo at work could, in some cases, be deterrence or vice versa.

As Jill Lepore states: “Our nuclear-weapons policy rests on a seven-decade-long history of events that have never happened: acts of aggression that were not committed, wars that were not waged, an apocalypse that has not come to pass.” At the end, absent a nuclear war, both nuclear deterrence and the nuclear taboo are nonfalsifiable theoretical concepts that need to be accepted by all sides to “function as instruments of nuclear war avoidance.”

Indeed, repeated arguing that deterrence works is meant to be a self-fulfilling prophecy and to strengthen its effect. One scholar goes as far as to say that deterrence requires scholars to commit “epistemological self-censorship” given that outside the box thinking could be dangerous. As a consequence, “innovations are often about an adjective or prefix: the most recent innovations would be winter-safe, tailored, or cross-domain deterrence (...).” In brief, deterrence only works if we believe that it works: the existence of nuclear weapons alone does not suffice.

Yet, the effectiveness of nuclear deterrence can be undermined by the nuclear taboo since the latter in essence implies that nuclear weapons will never be used — never mind the existence of elaborate nuclear warfighting strategies. Such a disclosure, that an accepted norm against the use of nuclear weapons exists within a country, invariably reduces the credibility of its nuclear deterrent. If pushed to the limits in a showdown, there is consequently an increased risk of nuclear conflict and the impression that one can get away with a nuclear first strike without having to face retaliation. In short, the taboo could undo the taboo.

Conversely, the threat of preventive military strikes against North Korea and the Trump administration’s willingness to accept nuclear war as an outcome undermines both nuclear deterrence and the nuclear taboo simultaneously and independent of their relationship to one another. Implying that current U.S. nuclear posture cannot deter Kim Jong-un and that the nuclear taboo is not credible enough to contain irrational behavior weakens the credibility of both and makes them less effective in preventing nuclear conflict.

In other words, we have to realize that nuclear deterrence and the nuclear taboo are social constructs — a shared assumption about political and military realities — and as such can only contribute to strategic stability (i.e. peace) if there is a consensus that they are real. Trump’s talk of preventive war is gradually undermining this shared assumption influencing the U.S.-North Korea nuclear relationship by denying the effectiveness of the two social constructs underpinning it, and that’s a very dangerous development.

The absence of these two restraining influences will embolden North Korea to maintain its aggressive nuclear posture vis-à-vis the United States and its regional allies increasing the risk of accidental nuclear war. It could also force the United States to adopt more aggressive and unorthodox methods to try to influence North Korean behavior (Ever heard of the “madman theory?”). This could leave the United States not only in the position of a less credible nuclear power in a face off with its chief nuclear competitors, China and Russia, but also raises the prospects of nuclear war across the board.

<http://thediplomat.com/2017/08/north-korea-the-end-of-the-nuclear-taboo/>

[Return to top](#)

EUROPE/RUSSIA

Newsweek (New York, NY)

Russia Fears New U.S. Nuclear Arms Make Bombing More Likely

By Damien Sharkov

August 29, 2017

Russia's Ministry of Foreign Affairs fears updated, high-precision U.S. models of nuclear bombs will lower inhibitions to use nuclear weapons in combat, Russian state news agency Itar-Tass reported on Tuesday.

The B61-12 is a weapon that the U.S. has worked on for some time, testing a mock-up in 2015. The U.S. National Nuclear Security Administration announced on Tuesday that it had carried out another non-nuclear test of the model 12 and would continue doing so in the next three years, hoping to clear it for service. The weapon is meant to be the first precision-guided atomic bomb, and Russia does not like the sound of it.

"The advantage of the new modification of the B61-12, according to U.S. military experts themselves lies in the fact that it will be, as they put it, 'more ethical' and 'more usable,'" Mikhail Ulyanov, the head of the Russian Foreign Ministry's Nonproliferation and Weapons Control Department told Tass.

Referring to comments made by former undersecretary of defense James Miller and ex-President Barack Obama's key nuclear strategist General James E. Cartwright, Ulyanov expressed fears the U.S. may develop a more laissez-faire view of nuclear arms' use, knowing they "cause less catastrophic consequences for the civilian population.

"From this we can conclude that the clearing of such bombs for service could objectively lead to lowering the threshold for the use of nuclear arms," Ulyanov said. "This, we can imagine, is the main negative impact of the ongoing modernization."

The upgrade is, in the eyes of some U.S. defense experts, a needed replacement of an integral part of U.S. nuclear capabilities whose design dates back to the 1960s. Former U.S. General Cartwright defended the program in 2016, noting that increasing precision and shrinking the size of the arms means fewer will be needed to act as a deterrent in the first place.

Ulyanov, however, felt the U.S. and any of its NATO allies that may benefit from the upgrade sought the B61-12's potential clearing in response to what they perceive as Russia's nuclear posturing. Russian President Vladimir Putin and other Russian officials have issued a handful of verbal reminders that Russia's own nuclear capabilities exist to back up its foreign policy if needed.

North Korea's current nuclear missile program has topped the list of concerns for the U.S. of late, with a missile test flying over Japan taking place on Tuesday morning. Though Russia formally opposes the North's nuclear program, Moscow chose to once again condemn the U.S. for provoking the test by carrying out its annual defense drill with regional ally South Korea.

<http://www.newsweek.com/russia-fears-new-us-nuclear-arms-make-bombing-more-likely-656564>

[Return to top](#)

Sputnik (Moscow, Russia)

B61-12 Bomb Tests: US-NATO Send Strong 'Signal' to Russia

Author Not Attributed

August 30, 2017

The second qualification test of the B61-12 bomb conducted on August 8 came as a "signal" to Russia, American nuclear expert Dr. Hans Kristensen told Radio Sputnik. According to the academic, the US nuclear program is nothing but part of a broader effort by global powers to modernize their nuclear stockpiles.

The recent tests of the B61-12 gravity bomb, conducted by the National Nuclear Security Administration and the US Air Force on August 8, have sent a signal to Moscow, professor Hans Kristensen, director of the Nuclear Information Project at the Federation of American Scientists, told Radio Sputnik.

"Nuclear weapons are used to signal," Kristensen said. "The ones [deployed] in Europe now have been used to signal, from NATO's point of view, the defense of NATO against a potential attack from Russia and these new weapons, which will come to Europe in the early part of the next decade, will also serve that role."

The expert pointed out that the nuclear explosive power of the modernized B61-12 bomb is the same as that of its predecessor — B61, which is considered one of the main pillars of the US Air Force's nuclear arsenal.

However, the modern tail-kit, with a substantial reduction in yield, provides the B61-12 with greater accuracy, Kristensen remarked. Yet another important innovation, according to the expert, is that the bomb can be mounted on the Lockheed Martin F-35 Lightning II stealth aircraft, which reportedly has "better penetration capabilities."

More importantly, the modified bombs are due to replace the US-owned nuclear B61 atomic weapons stationed in Europe.

Kristensen highlighted that the new nuclear arms will go to the exact same locations where obsolete bombs are now: "It's not like they are deploying them [B61-12 bombs] in other places or further east or something like that."

According to the expert, the latest US B61-12 tests come as part of broader nuclear modernization kicked off by major geopolitical players.

From time to time each of the players "comes in with a new system or upgraded system," Kristensen said, stressing that "upgrades happen all the time, but at different intervals in different countries."

While the Americans are carrying out their generational upgrade of atomic weapons, the Russians have been in the middle of their nuclear modernization program for a decade and a half with about two-thirds done, he said, adding that the Chinese are in the middle of theirs as well.

"And now we see North Korea making enormous progress in trying to develop something," the expert pointed out. "So these are important developments that are happening continuously and for some reason don't seem to ever stop."

On August 29 the National Nuclear Security Administration (NNSA) announced successful flight tests of its B61-12 gravity bombs without nuclear warheads. The qualification tests were conducted on August 8 at the Tonopah Test Range in Nevada. The bombs were dropped from F-15E fighter jets.

The NNSA specified in its official statement that the "tests are part of a series over the next three years to qualify the B61-12 for service." The first qualification flight test was conducted in March 2017.

It is expected that besides F-35 joint strike fighters the modified atomic bombs would be mounted on B2A and B21 bombers, as well as on F16C/D, F16 MLU and PA-200 aircraft.

According to the NNSA, the first production unit of the B61-12 is scheduled to be completed in 2020.

The information about the successful B61-12 test came simultaneously with the Tuesday ballistic missile launch in the direction of Japan by North Korea.

<https://sputniknews.com/politics/201708301056933405-us-bomb-test-signal-russia/>

[Return to top](#)

The National Interest (Washington, DC)

France's Nuclear Arsenal Could Kill Millions of People in Minutes

By Kyle Mizokami

August 25, 2017

France was the fourth country to join the so-called "Nuclear Club," and at the height of the Cold War maintained its own nuclear triad of land-based missiles, nuclear-armed bombers and ballistic missile submarines. Today, France's sea-based nuclear deterrent is the home of most of its nuclear arsenal, with four nuclear-powered ballistic missile submarines, of French design and construction, providing constant assurance against surprise nuclear attack.

France's nuclear weapons arsenal began in earnest on February 13th, 1960, with the country's first nuclear weapons test. The test, code-named "Gerboise Bleue" (Blue Desert Rat) confirmed that France had the know-how to build its own weapons. It also confirmed that France had the nuclear know-how to part ways with the United States and NATO and chart its own course versus the Soviet Union.

France began working on its own naval nuclear propulsion program in 1955, under what was known as Project Coelacanth. The first effort to build a nuclear-powered submarine, Q.244, was to be the first of five nuclear ballistic missile submarines. The effort to develop Q.244 was a failure, due to the inability of nuclear engineers to sufficiently miniaturize the reactor, and the submarine was cancelled in 1959. A subsequent project to develop a land-based reactor, PAT 1, was a success and led to development of Q.252, which became the submarine Le Redoutable.

At the same time, France's defense industry was working diligently to produce a submarine-launched ballistic missile. The result was the M1 MSBS, or Mer-Sol Balistique Stratégique (Sea-Ground Strategic Ballistic Missile). The M1 was a two stage rocket with a 500 kiloton warhead and a range of 1,553 miles. This was sufficient range for a French ballistic missile submarine in the Bay of Biscay to strike Moscow.

France's first generation missile submarines, the five submarines of the Le Redoutable class and the single L'Inflexible submarine, were all built at the Cherbourg shipyards and completed between 1971 and 1980. The cancellation of Q.244 may have been fortuitous, as it allowed the United States to make pioneer engineering decision in nuclear ballistic submarine design, something also seen in the Soviet Union's first generation Yankee-class ballistic missile submarine. The overall layout of the Redoutable class was very similar to the U.S. Navy's second generation Lafayette-class ballistic

missile submarines, with fin-mounted hydroplanes and sixteen missile silos in two rows of eight directly behind the fin.

The first two submarines, Le Redoutable and Le Terrible, carried the M-1 missile, while the third, Le Foudroyant, carried the improved M-2 missile with a longer 1,841 mile range. The next two submarines, L'Indomptable and Le Tonnant had a mix of M-2 missiles and the new M-20, which had the same range but a gigantic 1 megaton thermonuclear warhead. The last submarine, L'Inflexible, carried missiles of a completely new design. Designated M4, the missiles had a 2,474 mile range, allowing them to strike as far east as Kazan.

At the height of France's nuclear weapons arsenal, 87 percent of France's nuclear arsenal was in submarines. France's nuclear submarine fleet, the Force Océanique Stratégique (FOST), was based at Ile Longue in Brest, and FOST submarines were sent on two month patrols off the coast of France and Portugal. Three submarines were to be at sea at any one time, with a fourth also ready to go to sea.

Starting in the mid 1980s, all submarines except for Le Terrible were outfitted with improved M-4A and then M-4B missiles with ranges of up to 3,720 miles and multiple independently targetable reentry vehicles, allowing each missile to carry six 150 kiloton warheads. The MIRVing of the M4 increased the firepower of each submarine sixfold.

In addition to their nuclear firepower, the Redoutable class submarines had four 533-millimeter torpedo tubes for self-defense, capable of launching the L5 Mod. 3 anti-submarine torpedo and the F 17 dual-purpose torpedo. They could also launch the SM 39 Exocet anti-ship cruise missile, but the primary mission of ballistic missile submarines is always to avoid detection until their nuclear missiles are needed.

France's second generation missile submarines, the Triomphant class, were built between 1986 and 2010, a remarkably long timeline for just four submarines but par for the course for post-Cold War shipbuilding. The first in class, Triomphant, began construction in 1986 and was finally commissioned in 1997 while the second, Téméraire, entered the fleet in 1999. The third boat, Vigilant, was commissioned in 2004 while the fourth and final boat, Terrible, was commissioned in 2010.

The Triomphant class is larger than the earlier generation submarines, and indeed shares the same nuclear reactor, the K-15, with the nuclear aircraft carrier Charles de Gaulle. The first four ships in class were originally armed with the M45 intermediate-range missile, a solid-fuel design with a range of 3,728 miles. The M45 had an identical loadout to the M4B, carrying six 150-kiloton MIRV warheads, but included penetration aids to overcome ballistic missile defenses.

The last submarine, Terrible, was the first equipped with the current missile, M51. M51 has the same number of six 150 kiloton warheads but goes a step further in defeating ballistic missile defenses as each warhead is capable of independent maneuvers during the terminal descent phase. M51 has a range of nearly 5,000 miles. The new missile is being gradually retrofitted to the entire French ballistic missile submarine fleet.

The resurgence of Russian military power—and the will to use it—will likely keep Paris a nuclear power for the foreseeable future. As small as it is, France's nuclear arsenal is not designed to win a nuclear war, just not lose one. France's four nuclear missile submarines will ensure that.

<http://nationalinterest.org/blog/the-buzz/frances-nuclear-arsenal-could-kill-millions-people-minutes-22056>

[Return to top](#)

Carnegie Europe (Brussels, Belgium)

Can Germany Be Europe's Nuclear Bridge Builder?

By Ulrich Kuhn

August 25, 2017

To prepare for future nuclear crises that will affect Europe, the next German government must double down on its role of building bridges in the nuclear realm.

Nuclear weapons policies have reached the 2017 German federal election. In a last-ditch effort to narrow Chancellor Angela Merkel's impressive lead in the polls, Martin Schulz, her contender from the Social Democrats, called on August 22 for the removal of the last remaining assets of U.S. extended deterrence from German soil—some estimated twenty B61 nuclear gravity bombs.

While Schulz's foray seems desperate and is out of touch with the realities of transatlantic and European security, his initiative deserves credit for bringing up the issue of nuclear deterrence and arms control—not least because the coming years will likely see a host of interlocking nuclear crises affecting Germany and Europe. But instead of hopelessly scanning the horizon for a catchy nuclear topic, the next German government must double down on its role of building bridges in the nuclear realm. There are four areas where Berlin must be more active and vocal.

The first is the U.S.-Russian nuclear relationship. Since 2014, the U.S. government has accused Russia of violating the Intermediate-Range Nuclear Forces (INF) Treaty, a critical Cold War arms-control pact banning all ground-launched missiles with ranges of between 500 and 5,500 kilometers (310 and 3,420 miles). According to U.S. government sources, Moscow has meanwhile developed, produced, and deployed a number of forbidden new systems, all of which can hold targets throughout Europe at risk.

For Germany, the Russian violation poses an inconvenient problem. On the one hand, Berlin cannot ignore the military impact of the violation and the heightened threat perceptions in NATO capitals east of Berlin. On the other hand, Germany wants to avoid a nuclear tit-for-tat in Europe with the United States possibly deploying new nuclear-capable intermediate-range systems in Europe—a back-to-the-1980s nightmare scenario for Berlin.

So far, Berlin has relied on tacit, behind-the-scenes diplomacy but has avoided a clear public stance on the INF Treaty. This is problematic not only because it sends a confusing signal to European NATO allies but also because recent U.S. Congressional legislative efforts seem to clear the way for the White House to opt out of the treaty in 2019.

As time is running out on the INF Treaty, Berlin needs to advance its diplomatic agenda on several fronts. The next government has to work toward developing a unified NATO response to the Russian violation. If Berlin wants to prevent a new intermediate-range arms race in Europe, it has to make clear what alternative military and diplomatic options it would consider. Berlin also needs to publicly bring up the issue at the highest levels with Moscow and Washington, including at the level of the chancellor. As the new Russian intermediate-range weapon will affect the balance in Asia, Berlin should additionally engage with China, India, Japan, and South Korea to build up international pressure on Moscow.

Second, the U.S. Congress has threatened to prohibit the use of funds to extend the New Strategic Arms Reduction Treaty (New START), which limits U.S. and Russian strategic nuclear systems. Moscow has already expressed its interest in extending the treaty for another five years beyond its current expiration in 2021, but U.S. President Donald Trump has not yet taken up the issue.

Without New START, U.S.-Russian strategic stability would be in peril, with potentially grave negative consequences for global security. Here, Germany should act as an honest broker, reminding Russian President Vladimir Putin and U.S. President Donald Trump that their national nuclear policies will have direct impacts on the possible nuclear proliferation of third states.

Third, Trump has threatened not to implement the July 2015 deal to limit Iran's nuclear options. The Joint Comprehensive Plan of Action (JCPOA) on Iran's nuclear program is a signature achievement of multilateral diplomacy, not least because of Germany's and the EU's constructive role in the painstaking negotiation process of preventing Tehran from going nuclear.

Despite the manifold shortcomings of the agreement, such as not curbing Iran's regional ambitions or addressing human-rights violations, doing away with the JCPOA would be a huge mistake. It would not only further destabilize the Middle East by incentivizing Iran—and perhaps other regional powers—to go down the proliferation route but would also send the devastating signal to any adversary of the United States that making agreements with Washington comes with high uncertainty and potentially serious risks and costs.

As one of the negotiation parties to the JCPOA, Germany, in concert with other powers such as France, Russia, and China, must remind Trump and the hawks in the U.S. Congress and in his administration that Washington would find itself maximally isolated if it were to rip apart the accord. Any additional destabilization of the Middle East would run counter to German business interests in Iran and could be the bellwether for the next refugee wave from the war-torn region to Europe.

Fourth, as a beneficiary of U.S. extended nuclear deterrence guarantees, Germany will have to work hard to reconcile global nuclear disarmament efforts with the interests of those states that enjoy nuclear protection from others. In July 2017, 122 UN member states voted in favor of a legally binding treaty to prohibit nuclear weapons. Being a member of NATO, a military alliance that relies on the concept of nuclear deterrence, Germany did not take part in the negotiations. Although proponents of global disarmament are deservedly in high spirits now, the ultimate hangover will come when reliance on nuclear weapons will continue to shape global security policies in the years ahead.

Before the inevitable frustrations of the treaty signatories turn into outright rejection of the global nonproliferation and disarmament regime, Berlin must aim to renew the deal that was at the heart of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT Treaty)—that nuclear “haves” disarm and nuclear “have nots” do not pursue the bomb. Again, Germany cannot act alone on that. But its participation in the Non-Proliferation and Disarmament Initiative—a group of like-minded states—gives Berlin a promising diplomatic tool to remind nuclear- and non-nuclear-weapons states to take their NPT Treaty obligations seriously.

As any dedicated bridge builder, Germany will face attacks from those that prefer trenches over bridges. But in a crisis-ridden world of national egoisms, Berlin will have to pull its weight more decidedly if it wants to help maintain the order it cherishes so deeply. This is why, unfortunately, the current German debate for or against increased defense spending is somewhat beside the point. Only those actors who back up cooperative efforts with hard power will receive respect from both their allies and the challengers of international order.

<http://carnegieeurope.eu/strategieurope/72896>

[Return to top](#)

MIDDLE EAST

Reuters (New York, NY)

Iran Rejects U.S. Demand for U.N. Visit to Military Sites

By Parisa Hafezi

August 29, 2017

Iran has dismissed a U.S. demand for United Nations nuclear inspectors to visit its military bases as “merely a dream”.

It also said the International Atomic Energy Agency (IAEA) was unlikely to agree anyway.

The U.S. ambassador to the United Nations, Nikki Haley, last week pressed the IAEA to seek access to Iranian military bases to ensure that they were not concealing activities banned by the 2015 nuclear deal reached between Iran and six major powers.

U.S. President Donald Trump has called the nuclear pact -- negotiated under his predecessor Barack Obama -- “the worst deal ever”. In April, he ordered a review of whether a suspension of nuclear sanctions on Iran was in the U.S. interest.

Iranian government spokesman Mohammad Baqer Nobakht responded at a weekly news conference broadcast on state television on Tuesday.

“Iran’s military sites are off limits,” he said. “All information about these sites are classified. Iran will never allow such visits. Don’t pay attention to such remarks that are only a dream.”

Iranian President Hassan Rouhani followed up later by saying the U.S. call was unlikely to be accepted by the U.N. nuclear watchdog.

“The International Atomic Energy Agency is very unlikely to accept America’s demand to inspect our military sites,” Rouhani said in a televised interview.

Rouhani gave no indication why he believed the IAEA would decline the request. Under the deal, the IAEA can request access to Iranian sites including military ones if it has concerns about activities there that violate the agreement, but it must show Iran the basis for those concerns.

That means new and credible information pointing to such a violation is required first, officials from the agency and major powers say. There is no indication that Washington has presented such information to back up its call for inspections of Iranian military sites.

“OFF LIMITS”

Under U.S. law, the State Department must notify Congress every 90 days of Iran’s compliance with the nuclear deal. The next deadline is October, and Trump has said he thinks by then the United States will declare Iran to be non-compliant.

So far, IAEA inspectors have certified that Iran is fully complying with the deal, under which it significantly reduced its enriched uranium stockpile and took steps to ensure no possible use of it for a nuclear weapon.

This was in return for an end to international sanctions that had helped cripple its oil-based economy.

During its decade-long stand-off with world powers over its nuclear program, Iran repeatedly rejected visits by U.N. inspectors to its military sites, saying they had nothing to do with nuclear activity and so were beyond the IAEA’s purview.

Shortly after the deal was reached, Iran allowed inspectors to check its Parchin military complex, where Western security services believe Tehran carried out tests relevant to nuclear bomb detonations more than a decade ago. Iran has denied this.

Under the 2015 accord, Iran could not get sanctions relief until the IAEA was satisfied Tehran had answered outstanding questions about the so-called “possible military dimensions” of its past nuclear research.

Iran has placed its military bases off limits also because of what it calls the risk that IAEA findings could find their way to the intelligence services of its U.S. or Israeli foes.

“The Americans will take their dream of visiting our military and sensitive sites to their graves ... It will never happen,” Ali Akbar Velayati, a top adviser to Supreme Leader Ayatollah Ali Khamenei, Iran’s highest authority, told reporters.

<http://carnegieeurope.eu/strategieurope/72896>

[Return to top](#)

The Washington Free Beacon (Washington, DC)

Obama Admin Hid Intel on Iranian Militants in Syria to Push Nuclear Deal

By Adam Kredo

August 29, 2017

Admin likely knew Iran shipping militants on commercial aircraft, but promoted sales

The Obama administration likely hid information about Iran illicitly ferrying militants into Syria on commercial aircraft in order to promote the landmark nuclear deal and foster multi-billion dollar business deals with Tehran's state-controlled airline sector, according to lawmakers and other sources familiar with the matter.

The Washington Free Beacon first disclosed last week that congressional leaders are calling for an investigation into Iran for using its state-controlled air carrier, Iran Air, to ferry militant fighters into Syria, where they are taking up arms in defense of embattled President Bashar al-Assad.

Photographs provided to Congress show Iran using Iran Air to ferry these soldiers between 2016 and 2017, in part when the Obama administration removed sanctions on Iran Air and promoted multi-billion dollars sales between the carrier and aircraft manufacturer Boeing, which is seeking to provide Iran Air with a fleet of new planes that many suspect will be used to carry terrorist fighters and weapons into regional hotspots.

This behavior violates international laws governing the nuclear deal and has now led lawmakers and others to accuse the Obama administration of downplaying Iran's illicit activity in order to promote the nuclear deal and ensure Tehran receives a new commercial fleet.

Multiple senior Obama administration officials, including former secretary of state John Kerry, traveled the globe to promote trade with Iranian companies, including Iran Air, at the same time Iran was found to be ferrying militants into Syria. Lawmakers and others suspect the Obama administration either hid or downplayed this information in order to preserve the nuclear deal.

"The Obama administration lifted sanctions against Iran Air as a political concession during nuclear negotiations with Iran, not because of any change in its activity," Rep. Peter Roskam (R, Ill.), one of the lawmakers calling for an investigation into Iran's use of commercial aircraft for military purposes, told the Free Beacon.

"Using social media and public flight tracking websites, any person with a computer can document Iranian military transports to Syria on commercial jets," Roskam said. "The Obama administration undoubtedly knew Iranian airliners were being used to fuel Assad's atrocities in Syria, but the administration officials who were globetrotting as Tehran's chamber of commerce trying to shore up the nuclear deal didn't care."

"Iran Air continues to support the Iran-Assad war machine to this day, and the Trump administration must hold the airline accountable and work to stop them," the lawmaker said.

Roskam and a delegation of other Republican congressmen petitioned the Trump Treasury Department last week to investigate photographic evidence showing Iran using Iran Air to ferry militants into Syria.

"Iran's use of commercial aircraft for military purposes violates international agreements as well as Iranian commitments under the JCPOA," or Joint Comprehensive Plan of Action, the lawmakers wrote, according to a letter first obtained by the Free Beacon. "We believe these photos mandate a thorough investigation of these practices and a comprehensive review of Iran's illicit use of commercial aircraft."

The lawmakers demand the Trump administration freeze all licenses that would permit the deal between Boeing and Iran Air to move forward.

Rep. Ron DeSantis (R., Fla.), a vocal opponent of the Iran deal who sits on the House Foreign Affairs Committee, told the Free Beacon that the Obama administration ignored evidence of Iran's illicit military activity in a bid to appease Tehran and forward the nuclear agreement.

"As the Obama administration was shipping palettes of cash to Iran, the mullahs were sending militants to wage jihad in Syria," DeSantis said. "The Obama administration turned a blind eye to this and other transgressions because it was so intent on delivering major sanctions relief to the world's leading state-sponsor of terrorism, the Iranian government."

The Treasury Department did not respond to multiple Free Beacon requests for comment on the matter.

The Treasury Department has vowed in the past to consider and investigate any new evidence revealing Iran's illicit use of commercial aircraft, but it remains unclear if U.S. officials are actually following through on this promise.

Administration insiders have expressed confusion over the matter, saying they are unsure where Trump officials stand on scrapping the nuclear agreement.

Multiple proponents of ending the deal were recently removed from the White House's National Security Council and it appears that those officials supporting the deal currently are now the majority voice. This includes Secretary of State Rex Tillerson and National Security Adviser H.R. McMaster.

Administration insiders say the Obama administration's aggressive efforts to promote trade with Iran and lay the groundwork for massive deals such as that formed with Boeing placed the current administration in a complicated position.

Boeing says the deal would create scores of U.S. jobs, but those opposing the deal say American workers should not be aiding Iran's illicit activity.

"The Obama administration actively politicized and downplayed intelligence about Iran to preserve the deal," said one veteran congressional adviser working on the issue. "They had State remove references to Iranian terrorism, had Justice ignore Iranian sanctions-busters and proliferated, and

even had Energy buy off Iranian deal violations. So of course they had Treasury look the other way while the Iranians were facilitating Assad's mass slaughter."

Michael Rubin, a former Pentagon adviser and expert on rogue regimes, said champions of the Iran deal had knowledge of Iran's illicit behavior, but downplayed this information to push the nuclear agreement forward.

"The Boeing deal is where corruption meets national security. One of the biggest proponents of the Iran deal was Thomas Pickering, a former ambassador whom the Obama administration brought in to assuage Congress and re-up its talking points in the media," Rubin said. "Pickering never acknowledged, however—even to Congress—that at the time he had a lucrative consulting gig with Boeing in order to enable that company to profit off any Iran deal."

Iran is seeking to purchase from Boeing a fleet much larger than its domestic needs require, another sign that points to the regime's desire to use these commercial aircraft for military purposes, Rubin said.

"What the heck did the Obama team think Iran would do with its Boeings? If they tallied up Iran's annual air travel with the capacity offered by Boeing, they'd find that Iran was purchasing planes representing triple what Iran needed for its civilian transport," Rubin said. "Frankly, the Boeing deal should have resulted in as many red flags as if Iran said it wanted to purchase high explosives and rocket engines. But, national security and reality were far down Obama and Secretary of State John Kerry's lists of priorities."

<http://freebeacon.com/national-security/obama-admin-hid-intel-iranian-militants-syria-push-nuclear-deal/>

[Return to top](#)

France 24 (Paris, France)

Toxic Connection: North Korea's Chemical Weapons Link to Syria

By Sam Ball

August 25, 2017

This week's revelation of two North Korean shipments suspected to be chemical weapons and intercepted on their way to Syria may be just the latest sign of Pyongyang's hand in the Syrian regime's chemical arsenal.

According to a confidential United Nations report, first revealed by Reuters on Tuesday, the two shipments were intercepted at an unspecified time during the past six months. The report, presented to the UN Security Council by the UN's 'Panel of Experts' on North Korea, did not detail when or where the interdictions occurred or what the shipments contained.

However, it did reveal that the shipments were destined for a Syrian government entity known as the Scientific Studies and Research Centre, which has overseen the country's chemical weapons programme since the 1970s.

Neither the North Korean nor the Syrian permanent missions to the United Nations responded to FRANCE 24's request for comment on the report's allegations.

Pyongyang's chemical stockpile

North Korea has long been known to have a sizeable stockpile of chemical weapons, but recent developments suggest that its arsenal is becoming increasingly sophisticated, and deadly.

"North Korea is believed to have chemical weapons stockpiles of around 5,000 tonnes," says Paul Walker, a former professional staff member of the Armed Services Committee in the US House of Representatives and now director of the environmental security and sustainability programme at the NGO Green Cross International.

Walker has not only taken part in on-site inspections of chemical weapons stockpiles, but also works closely with the Organisation for the Prohibition of Chemical Weapons (OPCW) and similar bodies as part of global efforts to eliminate chemical weapons arsenals.

"Five thousand tonnes is small compared to the declared stockpiles of the likes of the US and Russia, but significantly larger than most other countries, including Syria," Walker told FRANCE 24.

Much of that is made up of what Walker describes as "World War One-type weapons" such as mustard agent, phosgene and lewisite, known as "blistering agents" for the horrific chemical burns they can cause to the skin.

But it is also suspected to include significant quantities of nerve agents like soman and sarin, the latter of which the Syrian government has been accused of using at numerous points throughout the civil war, most destructively in an attack on the Damascus suburb of Ghouta in 2013 that the US government estimates killed 1,429 people, including at least 426 children.

'100 times more deadly than sarin'

But the world got a glimpse at the growing sophistication of Pyongyang's chemical weapons program earlier this year when, on February 13, the half-brother of North Korean leader Kim Jong-un was assassinated at Kuala Lumpur International Airport in Malaysia, in a move widely believed to have been ordered by the North Korean government.

Kim Jong-nam was killed by the nerve agent VX, confirming for the first time that North Korea possesses this extremely lethal chemical in its arsenal - one that could now be making its way to Syria.

"My guess is that those shipments to Syria probably contained VX and precursor chemicals for making VX," says Walker.

If so, it would mean that a chemical weapon Walker describes as "100 times more deadly than sarin" could be finding its way into one of the most complex and bloody conflicts in living memory, in which close to half a million are estimated to have died and where chemical weapons attacks on combatants and civilians are already known to have taken place.

In fact, it may already be there.

When Syria declared its chemical stockpile to the OPCW in 2013, in the wake of the international outcry that followed the Ghouta attack and facing threats of US military intervention, no nerve agents were included on the list.

However, subsequent inspections found traces of both sarin and VX in samples taken from the Scientific Studies and Research Centre, the same body for which the recently intercepted shipments were earmarked.

"I wouldn't be surprised if after further inspection, those chemicals are eventually linked back to North Korea," says Walker.

'Pattern of military cooperation'

If so, it would be just the latest in a long line of exposed military links between North Korea and Syria.

The incidents outlined in the UN report are not the first time ships containing North Korean arms have been intercepted en route to Syria, in direct contravention of UN sanctions.

"North Korea has also had some involvement in ballistic missiles and Syria is known to have produced ballistic missiles with North Korean technology in the past," says Kelsey Davenport, director for nonproliferation policy at the Arms Control Association.

"Then there's the nuclear collaboration, which led to the Israeli airstrike (at a suspected nuclear reactor site) at Deir ez-Zor in Syria in 2007," she told FRANCE 24. "Overall there's a well established and lengthy pattern of military cooperation."

That this cooperation may have already extended to supplying chemical weapons to Syria would therefore hardly come as a surprise, she says.

Bigger threat than nuclear?

Meanwhile, an international community currently fretting over North Korea's nuclear ambitions amid increasingly bellicose rhetoric may be overlooking a more imminent threat in the form of an extensive chemical arsenal -- one that in theory could be put to use at a moment's notice.

Unlike most nations with a chemical weapons stockpile, the majority of those possessed by North Korea are thought to be "deployed", meaning they are loaded into artillery shells and rockets ready to be fired, explains Walker. In North Korea's case, most of these are amassed at the demilitarized zone along the border with South Korea.

"This makes for a very capable chemical weapons offensive threat that could be used to strike Seoul in half an hour if war breaks out."

"It's a source of big frustration that it doesn't get more attention," he says. "In many ways the threat from chemical weapons is much more realistic than from nuclear weapons."

<http://www.france24.com/en/20170825-toxic-connection-north-korea-chemical-weapons-link-syria-united-nations>

[Return to top](#)

Financial Tribune (Tehran, Iran)

Americans Will Reject Bolton's Anti-JCPOA Plan

Author Not Attributed

August 31, 2017

he foreign minister said the plan proposed by a former US diplomat on how to pull the US out of the Iran nuclear deal is doomed, as such policies have already proven to be ineffective and will never be welcomed by the American society.

"I believe the American people are aware that such policies advocated by Bolton and the likes of him are a failure, so ears are shut to such proposals in the US," Mohammad Javad Zarif also told Fars News Agency on Wednesday.

Former US ambassador to the United Nations and uber-hawk John Bolton said former White House chief strategist, Steve Bannon, had asked him to draw up a plan for how to withdraw from the Iran deal in July.

But after the White House ejected Bannon in August, Bolton lost access to the administration and his plan not made it to Trump's desk, Vox news website reported.

Now he has decided to publish his plan publicly.

"Definitely, the international community will also react, even more strongly, to the Americans and the pursuit of such policies would only lead to the further isolation of the United States and will not bring anything good for them," Zarif said.

The five-page memo is basically a strategic public relations campaign to convince the world that the US has a case for pulling out of the 2015 deal.

That case hinges on one central claim: that Iran is clearly violating the deal and has thus rendered it a meaningless agreement.

But experts say this claim is not grounded in evidence and that Iran is meeting international standards in complying with the deal's requirements for inspections and monitoring.

Bolton's argument, they say, simply assumes that Iran has nefarious intentions to build nuclear weapons despite the absence of any proof.

And some analysts warn that his argument suffers from the same kind of war-hungry reasoning that led the US to invade Iraq on questionable evidence in 2003.

"There's a lot of talk of Iran's noncompliance with the deal, but there isn't a lot of evidence of Iran's noncompliance," Jeffrey Lewis, an arms control expert at Middlebury College's Monterey Institute of International Studies, said.

"That's sort of how Iraq happened, where the Bush administration said, 'Let's go find the evidence of weapons of mass destruction,' rather than asking, 'Does Iraq have weapons of mass destruction or not?'"

In 2015, the Obama administration and its allies struck the nuclear deal with Iran, which called for lifting western economic sanctions on Iran in exchange for Tehran curbing its nuclear program.

The accord helped cool rising tensions between the US and Iran, which could possibly have led to yet another US military intervention in the Middle East.

Tehran has already received tens of billions of dollars in sanctions relief in exchange for shipping out a large chunk of its enriched uranium and taking thousands of centrifuges offline.

In his memo, Bolton asserts that Iran's "outright violations" of the terms of the deal give the US license to scrap the deal and reimpose crippling economic sanctions on the country unilaterally.

But experts say there is no evidence of Iran refusing to comply with the deal.

"Washington's partners in the deal and the European Union have all clearly stated that Iran is complying with the deal, and more importantly, the US intelligence community is pointing to Iran's compliance with the agreement," said Kelsey Davenport, the director for nonproliferation policy at the Arms Control Association.

"Based on the evidence that's been presented to the intelligence community, it appears that Iran is in compliance with the rules that were laid out in the JCPOA," Air Force Gen. Paul Selva, the vice chairman of the Joint Chiefs of Staff, told Congress in July.

In the runup to the invasion of Iraq, Bolton served as the undersecretary of state for arms control and international security in the Bush administration.

Both Davenport and Lewis point out that he was a key player in pushing for the war based on cherry-picked intelligence suggesting that Iraq's dictator Saddam Hussein had weapons of mass destruction.

"Bolton was pretty central to that and he's replicating that experience," Lewis said.

<https://financialtribune.com/articles/national/71452/americans-will-reject-bolton-s-anti-jcpoa-plan>

[Return to top](#)

INDIA/PAKISTAN

The Economic Times (New Delhi, India)

US Worried Pakistan's Nuclear-Weapons Could Land Up in Terrorists' Hands: Official

Author Not Attributed

August 25, 2017

The Trump administration is worried that nuclear weapons and materials in Pakistan could land up in the hands of terror groups and the concerns are aggravated by the development of tactical weapons, a senior US official has said.

The senior Trump administration official said that during a compressive review, one of the major issues that continually came up for discussion and is very important to the US was the nuclear danger in the region.

That is a critical element of the South Asia strategy, the official told reporters during a conference call.

The Trump administration is worried that nuclear weapons and materials in Pakistan might land up in the hands of terrorist groups or individuals, the senior administration official said, on condition of anonymity.

The South Asia strategy announced by US President Donald Trump on Monday notes that the "nuclear weapons or materials could fall" into the wrong hands, the official said.

"It (South Asia policy) also prioritises the escalating tension between India and Pakistan, the two nuclear power countries, and looks for ways to de-escalate the tension between the two to avoid any potential military confrontation among them," the official said.

"We are particularly concerned by the development of tactical nuclear weapons that are designed for use in battlefield. We believe that these systems are more susceptible to terrorist theft and increase the likelihood of nuclear exchange in the region," the Trump administration official said.

The official said it was due to this that the strategy also focuses on confidence building measures between India and Pakistan and encourages them to come to the negotiating table.

The danger of nuclear weapons was also mentioned by Trump in his Afghanistan and South Asia policy speech on Monday.

"For its part, Pakistan often gives safe haven to agents of chaos, violence, and terror. The threat is worse because Pakistan and India are two nuclear-armed states whose tense relations threaten to

spiral into conflict. And that could happen," he had said in his first prime time televised address to the nation.

In an article published in 'War on the Rocks', Christopher Clary, who worked on the South Asia policy in the Office of the Secretary of Defence from 2006 to 2009, said Pakistan likely possesses more than 100 nuclear weapons today and might possess fissile material for up to 200 or 300 nuclear weapons.

"The US presence in Afghanistan is primarily about preventing terrorist groups operating there, but there is some reporting that suggests elements of the US government are wary of losing basing in Afghanistan that is useful to monitor Pakistani terrorist groups and Pakistan's nuclear weapons development efforts," Clary said.

Stephen Tankel, an American expert, said the US has two vital security interests in Pakistan -- ensuring militants in the region do not attack the US homeland and keeping militants from getting their hands on nuclear material.

"America also has a critical interest in preventing Indo-Pakistani nuclear escalation and terrorist attacks against US persons and infrastructure in the region," Tankel recently wrote for Center for a New American Security.

"Maintaining a sufficient counter-terrorism presence in Afghanistan has been a cornerstone of the broader US counter- terrorism policy. This, in turn, has required ensuring the Afghan government retains sufficient control over its territory," he said.

Pakistan is developing tactical nuclear-capable 'Nasr' ballistic missiles for battlefield use in order to deter a limited Indian military response to terrorist attacks by Pakistan-supported militants, he wrote.

"The common concern about Pakistani nuclear weapons is that they are vulnerable to internal threats. In reality, these weapons are most likely to fall into terrorists' hands if forward-deployed during a conflict with India," Tankel said.

"Even some Pakistani analysts recognise that it would be difficult for the Pakistan military to ensure the full security of these weapons once they were deployed in the field," he said.

<http://economictimes.indiatimes.com/news/defence/us-worried-pakistans-nuclear-weapons-could-land-up-in-terrorists-hands-official/articleshow/60220358.cms>

[Return to top](#)

The Street (New York, NY)

While North Korea Fires Missile, Nuclear-Armed China and India Stand Down

By Alex McMillan

August 29, 2017

Well, that's one disaster averted. For now.

While North Korea, South Korea, Japan and the United States face off over Pyongyang's nuclear-weapons program, India and China have agreed to disagree in their border dispute high in the Himalayas, with both sides claiming a diplomatic victory. India is withdrawing troops that had moved into a contested part of the Bhutan border in an area where China won a "hot war" with India in 1962.

With nationalistic leaders in charge in both nations -- which always glance askew at each other anyway -- neither India nor China wanted to be seen as backing down. That created a two-and-a-half-month impasse when soldiers from the world's most-populous nations started each other down.

The dispute high in the highest of Himalayas -- the area is not far from Mount Everest -- started on June 16. India calls the plateau where they standoff took place Doklam; China dubs it Dong Lang. Both sides sent around 300 soldiers to stand off against each other.

India called its troops into action after Chinese construction workers sought to extend a road into an area that it claims, but that India and Bhutan both say belongs to Bhutan. Bhutan, which relies on India for most things, called on its ally's support to repel the Chinese.

The situation bore certain similarities to the events that led to the Sino-Indian War in late 1962. This time around, the spat on two occasions devolved into physical conflict. A real war between nuclear-armed nations that account for 36% of the world's people and 18% of its economic output would have been disastrous.

The dispute did get physical. In June, the two sets of troops shoved up against each other's chests in an effort to barge the other side down. And there was real fighting in mid-August, albeit with fists, rather than guns.

Troops from the two sides kicked, punched and even threw rocks at each other during a brawl next to Pangong Lake, it appears from a 43-second video of the mêlée, but thankfully avoided live fire. Indian media gave the footage plenty of airtime, saying it shows the two-hour fracas that resulted from an attempt by Chinese troops to enter Indian terrain on Indian independence day on Aug. 15.

The disputed area is close to India's "chicken neck" -- its narrowest swathe of territory, at times only 12 miles wide. The neck sits at the point where Bangladesh, Bhutan and Nepal almost touch, and just south of Chinese Tibet. It links India's seven easternmost provinces, the "head," with the body of the country. India also has its own dispute with China over territory in Sikkim, where Tibet touches the north of the neck.

India says the area the Chinese construction workers entered is disputed; China sees it as its own.

China claims Indian troops then "illegally crossed the well-delimited China-India border" in Sikkim. It believes its cries of protestation "made the facts and the truth of the situation known to the international community."

Beijing says New Delhi called its dogs of war back at 2:30 p.m. on Monday, withdrawing all its equipment and personnel. India, in a brief statement, calls it an "expeditious disengagement of border personnel" from the "face-off site" that was agreed by both sides. Anonymously, Indian officials have claimed China has taken a step back, too, withdrawing the earth-movers and suspending construction of the road.

The timing works out well. Indian Prime Minister Narendra Modi and Chinese President Xi Jinping will meet in the coastal Chinese city of Xiamen during a Sept. 3-5 summit of the BRICS emerging economies. The hard men represent the strongest leader each country has seen since Chairman Mao and Indira Gandhi.

Out of this incident, China said it "attaches importance to developing good neighborly and friendly relations with India." It hopes to see "mutual respect for each other's territorial sovereignty," a foreign ministry spokesperson said in a press conference as India backed its troops down.

India says its back channels to China allowed it "to express our views and convey our concerns and interests." It wants to see boundary issues "scrupulously respected," putting online a scanned version of an apparently typed statement.

The dispute is hardly settled, but has reverted to the previous status quo. China maintains its claim.

It hopes that India "could earnestly honor the border-related historical treaty" on Sikkim and the Doklam/Dong Lang plateau. China claims that the borders were settled in the 1890 Convention on Calcutta, signed between the Qing Dynasty and the British Raj -- entities that do not exist today. To make matters even more complex, it was a private entity, the British East India Company, that first claimed Sikkim under the Union Jack.

China already faces a territorial dispute that pits it against Taiwan, the Philippines, Malaysia, Brunei and Vietnam in the South China Sea. It's unclear who exactly was in the right over the road in the Himalayas, but it certainly looks like China was using infrastructure to cement a claim on disputed soil that it insists is its sovereign territory. That's a similar strategy to the island building it has used to cement, literally, its South China Sea position.

China's position on boundaries and international treaties is highly situation-dependent. How it has dealt with separate agreements with the United Kingdom demonstrates that very clearly.

All of a sudden, in Sikkim, China is very keen to see a "historical treaty" heeded. That contrasts starkly with China's stance on Hong Kong, which it ceded to Britain before the Calcutta convention.

The Qing Dynasty handed Hong Kong island to Great Britain "in perpetuity" when it signed the Treaty of Nanking in 1842. The British then took out a 99-year lease on an extension of the enclave, thereafter called the New Territories.

Prime Minister Margaret Thatcher saw the inevitable end of the colony. Britain and China then orchestrated, through painful negotiation, the Sino-British Joint Declaration in 1984. That established the rules of transferring the territory, and how it should subsequently be governed.

China now says the Sino-British Joint Declaration is a "historical document that no longer has any realistic meaning." It has steadfastly claimed that it alone has the right to govern Hong Kong and that the British have no right to supervise how the city is run. The arrangements in the declaration are "now history and of no practical significance," it claims, and not binding on how China runs Hong Kong.

But the Treaty of Calcutta is apparently highly relevant today. When past historical treaties suit China's purposes, it expects counterparties to "earnestly honor" them, since they have great meaning. When China has got the territory it wants, those treaties are mere documents, worth only the paper they're printed on.

China doesn't even rely on a treaty in claiming the South China Sea -- it says precedent and history that saw its fishermen exploit the marine resources there is enough.

Watch what you sign, cede and receive with China, in other words. The border between right and wrong shifts with time.

<http://realmoney.thestreet.com/articles/08/29/2017/while-north-korea-fires-missile-nuclear-armed-china-and-india-stand-down>

[Return to top](#)

Daily Times (Lahore, Pakistan)

India's Rising Nuclear Trade Aspirations

By Beenish Altaf

August 29, 2017

India's membership in the four multilateral export controls regimes questions the credibility and efficacy of the global system including the non-proliferation regime

Mounting political and strategic relationships among Pakistan and India have given rise to a new pattern of heated interactions involving global powers. Analyzing India's growing quest for multilateral export control regimes, it can be noted that India has a unique history of relationships with export control cartels. India is now seeking legal membership into nuclear export control groups. It is certain that membership into such groups will give India a distinct advantage in participating in the management of global commerce in advanced technology.

The four multilateral export controls regimes, the Nuclear Suppliers Group (NSG), the Missile Technology Control Regime (MTCR), the Australia Group, and the Wassenaar Arrangement, have emerged as the oldest multilateral bodies for export controls and are one of the leading forums of the global export controls system especially in contemporary geo-politics. Although these are informal groups with a small number of member countries, they derive their importance from the nature of their membership. Most of the major suppliers of high technology or sensitive technology — usually dual in nature — are members of these regimes.

In recent years, India is undoubtedly trying to integrate itself quickly within these regimes by playing politics. However, it is quite obvious that it would face roadblocks in its integration with the existing system. A somewhat deeper analysis indicates that the old non-proliferation order and actors are slowly reconciling to India's integration with the global export controls system. India's membership in the four multilateral export controls regimes questions the credibility and efficacy of the global system including the non-proliferation regime.

India has claimed that it has a spotless non — proliferation record and that it should be included in nuclear mainstream countries by also making it part of the NSG. However, it seems India's non-proliferation record is not as clean as it would have us believe. A lot has been written about India's first nuclear test in post-nuclear supplier's group debates. That test spurred the United States and several other countries to create the Nuclear Suppliers Group to more vigilantly restrict and monitor global nuclear trade.

Since India's nuclear program largely is plutonium based, its uranium reserves are demonstrated to be low for its civil nuclear usage and military usage. The trend of nuclear deals with India — set largely by the US — has and will further overwhelm India with the uranium reserves. India will not only benefit from its civil nuclear program out of it but will also keep an extensive amount of uranium for its burgeoning nuclear weapons program. The assistance to India has made it an aspirant to become a South Asian nuclear giant. It also expects to be recognised as a world's rightful nuclear power.

India, right after getting the Missile Technology Control Regime (MTCR) membership, decided to work on enhancing its Brahmos missile ranges. Analytically, it could be assessed that India is doing this after getting the MTCR membership just within days, what would India do if its dream of getting NSG membership becomes reality. It would, for sure, lead the way for enhancing its uranium reserves for military usage. Analytically, China stonewalled India's entry into the NSG at the recent June plenary as it has an effect on it being the active member of the group but it could not stall India's membership to the MTCR as it was not a permanent member.

Nevertheless, India is undoubtedly spending more and more on developing its tremendous firepower and strike capabilities. This is alarming for the world in general and the region in particular as it could lead to a destabilising impact on South Asia. Since India is neither party to the NPT nor has it been accepted fully it safeguards its nuclear trade and there should not be any chance of including India into the hub of civil nuclear trade, especially within the multilateral export control regimes. If done so, the purpose of all the regimes to aid non-proliferation efforts would be futile.

<http://dailytimes.com.pk/opinion/30-Aug-17/indias-rising-nuclear-trade-aspirations>

[Return to top](#)

South China Morning Post (Hong Kong, China)

China learns in border row India will not buckle over security

By Ankit Panda

August 30, 2017

New Delhi succeeds in securing the status quo on the border after military standoff ends, leaving both nations eyeing each other warily, writes Ankit Panda

The months-long border standoff between China and India on the Doklam plateau, an obscure patch of disputed land near Bhutan in the Himalayas, came to a sudden close in the final days of August – days before Indian Prime Minister Narendra Modi meets Chinese President Xi Jinping at the Xiamen BRICS nations summit.

Weeks of behind-the-scenes diplomatic effort succeeded in defusing what once appeared to be a high-stakes and intractable crisis.

The Indian and Chinese foreign ministries released statements on Monday acknowledging a drawdown. While each country's statement about the details of the end to the standoff varied in emphasis, there was no apparent contradiction.

India highlighted an “understanding” between the two sides that led to the “expeditious disengagement of border personnel at the face-off site”, just 60 odd metres from the Indian Army's outpost on the Bhutanese border at Doka La.

Reports later confirmed that India had secured a withdrawal of Chinese troops – including construction crews – from the site of the standoff.

China, meanwhile, chose to emphasise a different point in its statements. Its foreign ministry spokeswoman carefully underlined that Indian troops had withdrawn from the territory at the centre of the standoff – territory that China sees as unquestionably Chinese.

What was left unaddressed in both sets of statements was the question that sparked the standoff. Indian Army troops crossed a ridge on June 16 separating the Indian state of Sikkim from what New Delhi sees as the territory of its ally, Bhutan. They crossed over to prevent the extension of an existing road by the Chinese People's Liberation Army.

During the near three-month-long standoff, India and Bhutan sought a simple outcome – the restoration of the status quo at Doklam to conditions before June 16. In short, India and Bhutan sought to prevent the extension of the existing road that had been used by China for years.

The denouement of the Doklam standoff highlighted that New Delhi succeeded in attaining this outcome – all without Bhutan having to diverge from its carefully calculated position of silence.

Bhutan does not have normal diplomatic relations with China and the two countries have several outstanding territorial disputes beyond Doklam.

China, meanwhile, claimed that it would continue patrols in the area, as it did prior to the start of the standoff, and, more ambiguously, to exercise “sovereignty” in the area. The statement from the Chinese offered Beijing a face-saving way out of the impasse.

New Delhi’s sober official reaction did not stop the chest-thumping in much of the Indian media about the Indian “victory”.

Of course, Doklam was always about more than a road on an obscure piece of disputed territory. Yes, Indian strategists feared the implications of China’s military potentially extending the road a few kilometres south, but ultimately, Doklam was about how Asia’s two large, nuclear-armed, rising powers saw each other.

In the lead-up to the standoff, India had already sharply rebuked President Xi’s signature “Belt and Road” international trade initiative. It released a sharply worded statement clarifying the conditions that must underlie infrastructure and connectivity initiatives in Asia.

New Delhi’s opposition was borne of its genuinely divergent interests, but also served as a mode of paying back Beijing for its refusal to support India’s accession as a member of the Nuclear Suppliers Group, an international group aimed at countering the export of equipment to make nuclear weapons, plus its tendency to go to bat for its ally Pakistan at the United Nations.

For China, the experience at Doklam will serve as a source of important lessons on everything ranging from New Delhi’s resolve when its national security interests are involved to India’s self-conception as a great power in Asia. The standoff was an illustration that if China sought to put India in its place, so to speak, after the public opposition to its “Belt and Road” initiative, it would have to expend greater resources and expose itself to more risk.

Once it became clear that the two ways out of the impasse at Doklam were a military conflict that neither side wanted or the solution that was eventually reached –India’s desired final goal – diplomacy prevailed.

What comes after the Doklam saga will matter greatly for the relationship between China and India. They will remain side by side, their border will remain disputed. Their relationship will maintain an uneasy balance between cooperation in some matters and intense competition in others.

The end of the standoff restores this state of affairs. What remains to be seen is if the bitter experience at Doklam leaves a lasting stain on how India and China see each other.

<https://thediplomat.com/2017/08/what-china-learned-about-india-at-doklam/>

[Return to top](#)

COMMENTARY

Bloomberg (New York, NY)

Americans Are a Little Too Relaxed About Nukes

By Faye Flam

August 30, 2017

A majority say they'd be fine with dropping a nuclear weapon on an Iranian city. What?

North Korea's advancing nuclear weapons program isn't the only news to unnerve arms-control experts this summer. A new survey has revealed that Americans are surprisingly willing to make a first nuclear strike -- and kill millions of civilians abroad.

The survey casts doubt on the power of what experts call the "nuclear taboo," said Stanford University historian David Holloway, author of "Stalin and the Bomb." The idea, or hope, behind the concept is that it's not just luck that humans haven't dropped any nuclear weapons for 70 years -- that there's a stigma that makes the use of nuclear weapons unthinkable.

But many Americans say it's quite thinkable. The taboo may be eroding, or it may never have been the protective barrier people thought it was.

The survey's designers sketched out a hypothetical conflict with Iran -- a country without nuclear weapons. Around 60 percent of those polled said that if Iran provoked the U.S. with some non-nuclear aggression, they'd approve of blowing up 2 million Iranian civilians using nuclear weapons rather than sacrificing 20,000 American lives in a ground attack.

"That just means they haven't thought about it," said Brian Toon, a professor of atmospheric science at the University of Colorado. They think nuclear weapons are just big bombs that blow up lots of people, he said, without considering the way a nuclear conflict -- even a "small" one involving some 10 percent of the U.S. arsenal -- might poison millions of men, women and children. and change the climate enough to starve hundreds of millions.

Today, it's not Iran but North Korea that's the focus of concern -- with its continued testing of nuclear missiles despite Trump's threat of "fire and fury." Serious people are starting to consider the possibility of nuclear conflict. While the North is unlikely to be capable of sending nuclear missiles all the way to the U.S., at least for now, there are plenty of ways casualties could escalate. "There are nuclear reactors all over North Korea," Toon said. So you might have Fukushima-type contamination all over the country.

Perhaps if people more clearly understood the destruction of human life that would result, the taboo would regain its power. In the early years of the Cold War, the power of nuclear weapons apparently surprised Daniel Ellsberg, a RAND Corporation analyst on loan to the Pentagon for the purpose of nuclear war planning.

"One day in the spring of 1961, soon after my 30th birthday, I was shown how our world would end," he wrote in 2009. Ellsberg, who is famous for leaking the Pentagon Papers in 1971, has spent recent decades examining the potential for nuclear catastrophe. His latest book, "The Doomsday Machine: Confessions of a Nuclear War Planner," will be released in December.

The end of the world was described in a highly classified document, Ellsberg recalled. While it didn't necessarily spell extinction of the human race, it estimated a nuclear war would kill at least 600 million people -- or as Ellsberg put it, "a hundred Holocausts."

Is there some logic to accepting 2 million deaths but not 600 million? Is there some number of holocausts that would be acceptable? Historian Holloway said that such mass killing would be considered unacceptable under the philosophical framework called just war theory – a set of criteria that political and military leaders have used to determine if a war is justifiable. Still, mass bombings during World War II made people familiar with the idea of targeting civilians. And the advent of nuclear weapons made it seem unavoidable.

To Americans, apparently, the morality of using nuclear weapons to kill civilians depends on time and place. In a paper describing this new survey, “Revisiting Hiroshima in Iran,” the authors write that most Americans approved of dropping nuclear weapons on Japan in 1945. But by 2015, most said the U.S. should not have used nuclear weapons or should have dropped them on unpopulated areas. The authors attribute this change of heart to Americans’ changing attitudes toward the Japanese.

It might be worth considering why experts have such a strong sense of the nuclear taboo -- one that goes beyond horror at sheer numbers of deaths an attack would cause.

A nuclear exchange might remain limited -- but then, it might not. Physicists chart the probability of nuclear war with what they call the Doomsday Clock, which has recently been edging toward midnight. If the U.S. launched a first strike against North Korea, experts say there’s no guarantee that China or Russia wouldn’t join in, either on purpose or by mistake. The actions of other countries are hard to predict in a state of confusion and fear. During the Cold War, several false alarms brought the U.S. and the Soviet Union within a heartbeat of launching massive attacks. Even as late as 1995, a science experiment sent off a false alarm and almost triggered an attack from Russia.

Recent calculations suggest that 50 or 60 nuclear weapons might be enough to change the climate, if they’re dropped on cities where massive fires would release sky-darkening smoke into the atmosphere. Hundreds of millions or even a billion people could starve in such a nuclear winter. “The scary thing is that this could potentially kill the majority of people on the planet,” said Colorado’s Toon. That would seem to be more than enough reason to keep up the nuclear taboo.

<https://www.bloomberg.com/view/articles/2017-08-30/americans-are-a-little-too-relaxed-about-nukes>

[Return to top](#)

PLOS (San Francisco, CA)

Biosecurity and Synthetic Biology: It is Time to Get Serious

By Eric van der Helm

August 22, 2017

Last month, the SB7.0 conference attracted around 800 synthetic biology experts from all around the world to Singapore. I was attending as part of the SB7.0 biosecurity fellowship, together with 30 other early-career synthetic biologists and biosecurity researchers. The main goal of the conference was to start a dialogue on biosecurity policies geared specifically towards synthetic biology.

As Matt Watson from the Center for Health Security points out on his blog, the likely earliest account of biological warfare, was the one describing the 1346 attack on the Black Sea port of Caffa from an obscure memoir written in Latin. A lot has changed since then, and biosecurity is now subject of the mainstream media — as exemplified by the recently published Wired article “The Pentagon ponders the threat of synthetic bioweapons.”

Defining biosafety and biosecurity

It is important to first get the scope right; terms like biosecurity and biosafety are sometimes used interchangeably, but there is a meaningful difference. In a nutshell, 'Biosafety protects people from germs – biosecurity protects germs from people,' as simplified during an UN meeting.

- Biosafety refers to the protection of humans and the facilities that deal with biological agents and waste: this has also traditionally encompassed GMO regulations.
- Biosecurity is the protection of biological agents that could be intentionally misused

Although the meanings of biosafety and biosecurity are often somewhat interchangeable in the remainder of this blog, I focus on biosecurity as this mainly involves the human component of policy making.

During the conference, Gigi Gronvall from the Center for Health Security illustrated a prime example of biosecurity from a 2010 WHO report on the Variola virus, the smallpox pathogen: "nobody anticipated that [...] advances in genome sequencing and gene synthesis would render substantial portions of [Variola virus] accessible to anyone with an internet connection and access to a DNA synthesizer. That "anyone" could even be a well - intentioned researcher, unfamiliar with smallpox and lacking an appreciation of the special rules that govern access to [Variola virus] genes."

The take home lesson? What might not look like a security issue now, may soon become a threat!

Biorisks are likely terrorism or nation-state driven

What are the most likely sources that pose a biorisk? According to Crystal Watson, the following risks demand scrutiny:

- Natural occurring strains (e.g., the recent Ebola outbreak)
- Accidental release (e.g. the 1979 accidental release of anthrax spores by the Sverdlovsk-19a military research facility in the USSR)
- Terrorism (e.g., the 2001 anthrax-spore contaminated letters in the US)
- State bioweapons (e.g., the US biological warfare program ultimately renounced by President Nixon)

From a biosecurity perspective, it is interesting to note which of these risks are most imminent. The same authors recently published a perspective in Science that describes the actors and organizations that pose a bioweapons threat. It describes the results of a Delphi study of 59 experts with backgrounds broadly ranging from biological and non-biological sciences, medicine, public health, and national security to political science, foreign policy and international affairs, economics, history, and law.

Although the results varied considerably, terrorism was rated as the most likely source of biothreats because of the "rapid technological advances in the biosciences, ease of acquiring pathogens, democratization of bioscience knowledge, information about a nonstate actors' intent, and the demonstration of the chaos surrounding the Ebola epidemic in West Africa in 2014." Another likely biorisk source would be a nation-state actor because of the "technological complexities of developing a bioweapon, the difficulty in obtaining pathogens, and ethical and/or cultural barriers to using biological weapons."

According to the expert panel, some threats are particularly likely to impact society:

- biological toxins (e.g., ricin, botulinum toxin)
- spore-forming bacteria (e.g., Bacillus anthracis, which causes anthrax)
- non-spore-forming bacteria (e.g., Yersinia pestis, which causes plague)

- viruses (e.g., Variola virus, which causes smallpox)

This list essentially covers everything that has been weaponized — only fungi, prions, and synthetic pathogens were not predicted to become weaponized in the next decade.

Now that the threats are defined: how to counteract them? One of the safeguards that has been put in place is the Australia Group, “an informal forum of countries which, through the harmonization of export controls, seeks to ensure that exports do not contribute to the development of chemical or biological weapons.” This organization seeks to develop international norms and procedures to strengthen export controls in service of chemical and biological nonproliferation aims. However, as Piers Millett from biosecu.re pointed out, these tools do not on their own adequately address our current needs for properly assessing and managing risks. For example, under the Australia agreement, you need an export license to export the Ebola virus itself or a sample of prepped Ebola RNA. But you do not need one if you just want to download the sequence of the genome. In other words, access restriction in an inadequate biosecurity failsafe.

Why resurrect the extinct horsepox virus?

Biosecurity is directly related to the challenge posed by the dual use of research: it both creates a risk while providing insights to mitigate that risk. A particularly illustrative example is the recent synthesis of the horsepox virus, which is from the same viral genus as smallpox, but is apparently extinct in nature. Last year, the lab of virologist David Evans at the University of Alberta in Canada reconstituted the horsepox virus, which is extinct. Synthesizing and cloning together almost 200 kb of DNA is not exceptionally challenging today, but it just hadn't been attempted before for this family of viruses.

But why did Evans and his team set out to synthesize the horsepox virus in the first place? There were several motivating objectives:

1. the development of a new smallpox vaccine
2. the potential use of the horsepox virus as a carrier to target tumors
3. a proof-of-concept for synthesizing extinct viruses using ‘mail-order DNA.’

Evans broadly defended his actions in a recent *Science* article: “Have I increased the risk by showing how to do this? I don't know. Maybe yes. But the reality is that the risk was always there. The world just needs to accept the fact that you can do this and now we have to figure out what is the best strategy for dealing with that.” Tom Inglesby from the Center for Health Security reasoned that the proof-of-concept argument does not justify the research as “creating new risks to show that these risks are real is the wrong path.”

How well can the horsepox synthesis study be misused? Evans notes that his group did “provide sufficient details so that someone knowledgeable could follow what we did, but not a detailed recipe.” Unfortunately, there are no international regulations that control this kind of research. And many scholars argue it is now time to start discussing this on a global level.

Paul Keim from Northern Arizona University has proposed a permit system for researchers who want to recreate an extinct virus. And Nicholas Evans from the University of Massachusetts suggests that the WHO create a sharing mechanism that obliges any member state to inform the organization when a researcher plans to synthesize viruses related to smallpox. Both options are well-intentioned. However, anyone can already order a second-hand DNA synthesizer on eBay and countless pathogenic DNA sequences are readily available, so these proposals do not contribute significantly to biosecurity. But, while these rules would increase the amount of red-tape for researchers, they would also contribute to the development of norms and cultural expectations around acceptable practice of the life sciences. The bottom line, which is not novel but very much

worth restating, is that scientists should constantly be aware of what they create as well as any associated risks.

The future of synthetic biology and biosecurity

Synthetic biology has only been recently recognized as a mature subject in the context of biological risk assessment — and the core focus has been infectious diseases. The main idea, to build resilience and a readiness to respond, was reiterated by several speakers at the SB7.0 conference. For example, Reshma Shetty, co-founder of Ginkgo Bioworks, explained that in cybersecurity, we didn't really think a lot about security issues until computers were already ubiquitous. In the case of biosecurity, we're already dependent on biology [with respect to food, health etc.] but we still have an opportunity to develop biosecurity strategies before synthetic biology is ubiquitous. There is still an opportunity to act now and put norms and practices in place because the community is still relatively small.

Another remark from Shetty was also on point: "We are getting better at engineering biology, so that also means that we can use this technology to engineer preventative or response mechanisms." For example, we used to stockpile countermeasures such as vaccines. With biotechnological advances, it is now possible to move to a rapid-response model, in which we can couple the detection of threats as they emerge via public health initiatives and then develop custom countermeasures using in part synthetic biology approaches. Shetty envisioned that foundries — with next-generation sequencing and synthesis capabilities — are going to play a key role in such rapid responses. Governments should be prepared to support and enable such foundries to rapidly manufacture vaccines for smallpox or any other communicable disease, on-demand. While it is not clear that the details of these processes and the countermeasures themselves can be made public and still maintain their effectiveness, the communication and decision-making processes should be transparent.

Elizabeth Cameron, Senior Director for Global Biological Policy and Programs at the Nuclear Threat Initiative, similarly warned that "if scientists are not taking care of biosecurity now, other people will start taking care of it, and they most likely will start preventing researchers from doing good science." A shrewd starting point for this development was noted by Matt Watson: "one reason we as a species survived the Cold War was that nuclear scientists—on both sides of the Iron Curtain—went into government and advised policymakers about the nature of the threat they faced. It's imperative for our collective security that biologists do the same."

In other words, it is time to start having these serious discussions about imminently needed biosecurity measures during events or conferences such as SB7.0.

<http://blogs.plos.org/synbio/2017/08/22/biosecurity-and-synthetic-biology-it-is-time-to-get-serious/>

[Return to top](#)

The Space Review (Alexandria, VA)

The Need for New Space-Based Missile Defense Systems

By Taylor Dinerman

August 28, 2017

The fiscal year 2018 defense budget looks like another test of whether the Republican-controlled Congress can actually get things done. A large majority of Republicans agree that, under President Obama, defense spending was cut to dangerously low levels. Congressman Trent Franks (R AZ), who serves on the House Armed Services Committee's strategic forces subcommittee, said that Obama was "adamant in trying to reduce spending on missile defense." This year there is a general agreement that the US needs to spend more, and to do a better job of defending ourselves and our allies, especially from North Korea's new missiles.

There can be no question that the Budget Control Act of 2011 has become an obstacle to the government's obligation to "provide for the common defense." Appropriating the dollars that the Defense Department can effectively use is, like everything else in Washington these days, amazingly difficult to accomplish. The House passed a National Defense Authorization Act (NDAA) that offers an extra \$2.5 billion for missile defense. The question now is, can the Senate follow suit?

One can only hope that the effort to increase the overall number of American missile defense weapons, including the homeland defense Ground Based Interceptors (GBI), the Navy's SM-3, and the Terminal High Altitude Area Defense (THAAD), will succeed. No enemy should be confident that it can easily exhaust America's supply of operational defensive missiles.

There is an equally urgent need to diversify and improve the sensors available to our global missile defense system. Led by the House Armed Services Committee, Congress is leaning towards funding a new effort to build a set of space-based sensors.

If this program gets established, it will have two basic objectives. One is to build and deploy a set of small satellites in low Earth orbit carrying very sensitive infrared heat-detecting sensors that will not only be able to detect the launch on any ballistic or boost glide missiles anywhere in the world, but will also be able to track the warheads and decoys carried by such missiles.

The second, and even more difficult, goal will be to build a set of radar satellites that will likewise detect and track any weapons fired at us or at our allies. These radar satellites will need to generate a great deal of power, so much so that normal solar arrays may not be enough. If Congress is serious about this program, it will have to fund the development of a new generation of compact nuclear power generators, as well as alternatives such as beamed power.

Better sensors and more missile defense weapons are urgently needed. Congressman Franks explained that he "deeply believes that we have ignored the threat that North Korea and Iran represent to the whole human family." He has been pushing for a space-based missile defense system for many years. If Congress can pass a budget that includes funding for space-based sensors that can better track and target incoming enemy missiles, it will be yet another step towards a secure America. In time, we may yet see the day that Ronald Reagan dreamed of when nuclear weapons will be "impotent and obsolete."

<http://www.thespacereview.com/article/3313/1>

[Return to top](#)

Helsinki Times (Helsinki, Finland)

Treaty on the Prohibition of Nuclear Weapons: Why Finland is not supporting it

By Katariina Simonen

August 28, 2017

In July 2017, the total of 122 member states to the United Nations (UN) voiced their support for the Treaty on the Prohibition of Nuclear Weapons, or the Nuclear Ban Treaty. The Treaty will be open for signatures on September 20th, 2017. It will enter into force 90 days after 50 states have ratified it.

The treaty comprehensively prohibits every type of activity related to nuclear weapons or nuclear explosive devices. This ranges from development to possession, transfer or stationing on the territory of those states that have signed the treaty.

This last prohibition is tricky, as it illegalises the nuclear deterrence on which many states, such as NATO-member states, rely on for their defence. In fact, this was the reason the Netherlands, the only NATO-member having participated in the work on the treaty, felt obliged to vote against it.

The treaty itself has its roots in the frustration of most of the member states, a significant number of civil society organizations, the Red Cross, the Red Crescent and the Academia regarding the slow pace of nuclear disarmament, which has practically stalled nowadays. Nuclear weapons are back in states' defence strategies and discourse, as latest exemplified by nuclear threats issued in the context of North Korea's missile tests. The Treaty on the Non-Proliferation of Nuclear Weapons (NPT, signed 1968), regardless of its comprehensive participation by 190 States, has not succeeded in enhancing disarmament significantly. Swedish Research Institute SIPRI's World Nuclear Forces report from 2016 indicates clearly the lack of disarmament: most nuclear states, especially the US and Russia, have significant modernisation programmes underway; Pakistan is constantly producing fissile material for nuclear weapons and the initiative regarding the Middle East Nuclear Weapons Free Zones has stalled, mainly because of Israel.

In addition, the world's attention has been excessively focused on Iran's nuclear program and North Korea's missile tests in a context in which nuclear States themselves are not disarming and possess over 15,000 nuclear weapons, of which over 4,000 are kept in immediate operational readiness for strike.

In these conditions it is no wonder that the majority of member states and other actors are frustrated. The approach chosen to advance disarmament became humanitarian: in 2013 and 2014 three major conferences were organised on the humanitarian impact of nuclear weapons caused by nuclear weapon explosions. Therein, the representatives of the Red Cross, who were the first in the field after the Hiroshima and Nagasaki nuclear bombings in 1945, have attempted to convey the message that nuclear weapons are illegal from the point-of-view of international humanitarian law. It will not be possible to prevent the immense humanitarian, ecological and societal destruction resulting from a nuclear explosion. This work has served as a background for the present Treaty on the Prohibition of Nuclear Weapons.

However, a nuclear free world is not yet realistic. The US, together with the UK and France, have issued a statement in which they decline to sign the treaty. They consider the treaty flawed as it does not take security risks into account, which are covered by the nuclear deterrent (e.g. Russia, probably China, too). They also consider that the treaty is detrimental to the NPT. Undoubtedly, other nuclear weapon states concur with these arguments.

However, the concept of deterrence is at best a suicidal concept, if one departs from the humanitarian impact of nuclear weapons. For instance, a nuclear explosion of 200 Kt at NATO's

military base in Aviano in Italy (where most of the US nuclear weapons in Europe are stationed, in addition to the Incirlick base in Turkey) would lead to a radioactive fallout that within a few days would contaminate large parts of Europe. Deterrence becomes a deadly security concept. Secondly, the NPT's non-proliferation dimension is not weakened but strengthened by states signing the Nuclear Ban Treaty. The NPT's stance on disarmament is also stalling since the nuclear weapon states do not have any intention to disarm yet.

The proponents of the comprehensive ban of nuclear weapons aim to contest the legitimacy and, in time, the legality of nuclear weapons by changing public opinion. This is not going to be easy, but it is not impossible either. Prior treaties, like those on land mines, cluster munitions and biological and chemical weapons have managed to make these formerly accepted weapons illegitimate and illegal in the eyes of the world.

In the 1960s, Finland was actively working with Sweden to promote a comprehensive ban on nuclear weapons. Finland also participated in the work on the humanitarian impact of nuclear weapons and has, in general, a long track-record of supporting the UN's disarmament goals. Today, this has been forgotten and the justifications of nuclear weapon states are blindly accepted. Some officials even went so far as to compare the future Nuclear Ban Treaty to the first treaty on the prohibition of war, the Kellogg-Briand Pact (1928), considering both treaties as failures. The Kellogg-Briand Pact is the first universal treaty still in force, setting restraints on warfare and having contributed to the adoption of the UN Charter and especially its Article 2.4, which made illegal all unilateral uses of force.

If Finland supports disarmament in earnest, should it not participate in the work which aims to make nuclear weapons illegal, instead of supporting the position of nuclear weapon states?

<http://www.helsinkitimes.fi/columns/columns/viewpoint/14989-treaty-on-the-prohibition-of-nuclear-weapons-why-is-finland-not-supporting-it.html>

[Return to top](#)

ABOUT THE USAF CUWS

The USAF Counterproliferation Center 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 Director for Nuclear and Counterproliferation (then AF/XON), now AF/A5XP) and Air War College Commandant established the initial manpower 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.

The Secretary of Defense's Task Force on Nuclear Weapons Management released a report in 2008 that 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." As a result, 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 continuing education through the careers of those Air Force personnel working in or supporting the nuclear enterprise. This mission was transferred to the Counterproliferation Center in 2012, broadening its mandate to providing education and research to not just countering WMD but also nuclear deterrence.

In February 2014, the Center's name was changed to the Center for Unconventional Weapons Studies 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.

The CUWS'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.