



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

OUTREACH JOURNAL

Issue No. 1277
18 August 2017

Feature Item

“A Short History of Biological Warfare: From Pre-History to the 21st Century”. Written by W. Seth Carus, published by the National Defense University; August 7, 2017.

http://wmdcenter.ndu.edu/Portals/68/Documents/occasional/cswmd/CSWMD_OccasionalPaper-12.pdf?ver=2017-08-07-142315-127

This short monograph reviews the history of biological warfare (BW) from prehistory to the present. It covers what we know about the practice of BW and briefly describes the programs that developed BW weapons based on the best available research. To the extent possible, it primarily draws on the work of historians who used primary sources, relying where possible on studies specifically focused on BW. By broadening our knowledge of BW, such studies have enabled us to write about the topic with more accuracy and detail than could have been done even a few years ago.

This is an overview, not a definitive history. Much about BW remains unknown, either because it is unknowable (due in some cases to the deliberate destruction of records) or because it is knowable only to some people (such as those who might have access to classified information) or because of the absence of academic research.

This survey breaks the history of BW into three periods. The first section examines prehistory to 1900—the period before scientific advances proved that microorganisms were the cause of many diseases. Despite many claims to the contrary, resort to BW was exceedingly rare during this era. Readers interested only in BW’s modern history can skip this section.

The second section looks at the years from 1900 through 1945. This period saw the emergence of state BW programs, the employment of biological weapons in both world wars, and the use of biological agents by nonstate actors, including criminals. This period witnessed the most significant resort to BW. It included the first organized state campaign to wage BW—sabotage operations organized by the German government during World War I. It also saw the most extensive use—the Japanese attacks in China. Almost all the known victims of BW were Chinese, mostly civilians, who were killed in these operations. This period also saw the initial efforts to control BW in the 1925 Geneva Protocol, which essentially prohibited the first use of BW agents.

Finally, the third section, covering the period from 1945 to the present, focuses mostly on developments during the Cold War, including descriptions of state BW programs as well as known uses of biological agents by states, terrorists, and criminals. Despite the development of highly sophisticated techniques for dissemination of biological agents by the United States and the Soviet Union during the Cold War (the two countries with the largest and most advanced BW programs ever organized), most of the known programs were small and possessed only crude dissemination capabilities. The known uses were unsophisticated as well, essentially no more advanced than what the Germans did during World War I. This era also saw the negotiation of the 1972 Biological and Toxin Weapons Convention (BWC).

This history focuses on those agents covered by the BWC, which prohibited weapons disseminating biological agents or toxins. Biological agents are replicating biological entities, such as bacteria. Toxins, poisons of biological origin, are similar to chemical warfare agents and also have been banned by the Chemical Weapons Convention. Definitional matters are discussed in more detail in appendix 2.

Biological agents are referred to by their scientific name. Following scientific practice, the name is abbreviated after the first mention. Thus, *Bacillus anthracis* (commonly, but incorrectly, called anthrax), which causes several diseases (including cutaneous anthrax, inhalational anthrax, and gastrointestinal anthrax), is hereafter called *B. anthracis*. Those seeking additional information about specific diseases should refer to specialist works that describe them in more detail.

Readers wishing more detailed information should look at the references cited in the notes. Appendix 1 also provides suggested readings.

TABLE OF CONTENTS

US NUCLEAR WEAPONS

- [Nuclear Command And Control Problems Dominate U.S. Air Force Focus, GAO Finds](#)
- [Oak Ridge Makes First Transuranic Waste Shipment](#)
- [A Look Inside U.S. Nuclear Security's Commodity Technology Systems](#)
- [When Should The President Use Nuclear Weapons?](#)

US COUNTER-WMD

- [US Agencies Join Turkish Counterparts For Training In Combating Nuclear Smuggling](#)
- [Mapped: U.S. and Allied Missile Defenses Against North Korea](#)
- [AI Can Now Detect Anthrax Which Could Help The Fight Against Bioterrorism](#)
- [Researchers Produce Smart Fabric To Neutralize Nerve Gas](#)

US ARMS CONTROL

- [Disarmament Experts Urge Europe to Help Halt 'Cold War 2.0': German Minister](#)
- [The GOP's Dangerous Plan To Build More Nukes](#)
- [US Seeks to Denounce Intermediate-Range Nuclear Forces Treaty - British Expert](#)
- [US Push for Scrapping Nuclear Treaty With Russia](#)

ASIA/PACIFIC

- [Let Japan Develop Nuclear Weapons To Lessen North Korea Threat, Former US Navy Commander Says](#)
- [North Korea's New High-Performance Missile Engines Likely Weren't Made in Russia or Ukraine](#)
- [Japan To Seek Assurance Of U.S. Defense Pledge, Including Nuclear Deterrence](#)
- [Japan, U.S. Conduct Air Drills As N. Korea Keeps Eye On 'Yankees'](#)

EUROPE/RUSSIA

- [The Monster Atomic Bomb That Was Too Big to Use](#)
- [The Danger of Russia's New ICBM](#)
- [German Foreign Minister Warns New START and INF Treaties Termination Will Affect Europe](#)
- [US Wants to Involve Russia in Arms Race](#)

MIDDLE EAST

- [Syrian Army Finds UK And Us Chemical Agents At Depots Captured From Terrorists](#)
- [Air Force Holds Missile Defense Drill Over Central Israel](#)
- [REPORT: Iran And Russia Violated UN Weapons Sanctions](#)
- [Iran Will Go To Pre-nuclear Deal Stage 'in Hours' If Sanctions Return: Rouhani](#)

INDIA/PAKISTAN

- [Pakistan Builds Nuclear Warhead Underground Storage Facility In Balochistan](#)
- [Growing Pak-China Nuke Ties: House Panel Says India Must Enhance Deterrence](#)
- [Pak-India Nuclear War - Avoided](#)
- [India's Use Of Chemical Weapons Against Kashmiris](#)

COMMENTARY

- [Nuclear Deterrence Will Fail](#)
- [Denuclearization Is Dead, Now Let's Bury It](#)
- [Toward a More Muscular Missile Defense](#)
- [US Continuing Sad Record On International Agreements, Treaties](#)

US NUCLEAR WEAPONS

Space News (Alexandria, VA)

Nuclear Command and Control Problems Dominate U.S. Air Force Focus, GAO Finds

By Mike Fabey

August 15, 2017

While the U.S Air Force is taking more steps to oversee nuclear command, control, and communications (NC3), the service must focus more on short-term problems than long-term issues, the Government Accountability Office (GAO) says in its report, "Nuclear Command, Control, and Communications: Update on Air Force Oversight Effort and Selected Acquisition Programs," released Aug. 15.

NC3 "is a large and complex system comprised of numerous land-, air-, sea-, and space-based components used to ensure connectivity between the President and nuclear forces," the GAO notes. "The current NC3 architecture consists of components that support day-to-day nuclear and conventional operations prior to a nuclear event as well as those that provide survivable, secure, and enduring communications through all nuclear threat environments."

The Pentagon is pursuing several acquisition programs to modernize elements of NC3, GAO says, while the Air Force, which is responsible for the majority of military NC3 assets, has begun establishing an oversight structure for its NC3 capabilities and programs.

"We found that the Air Force has continued to take steps to provide an Air Force-wide NC3 oversight structure for the NC3 weapon system," GAO says, "but its focus has mainly been on short-term issues to sustain the current systems as it added personnel for its new NC3 oversight structure. According to Air Force officials, the Air Force has built up its understanding of the short-term sustainment needs for the 62 component systems that currently make up the NC3 weapon system, but has not had the resources to focus on the long-term needs for NC3."

GAO says it provided earlier in-depth, classified briefings to congressional defense committee staff on its research in May and June. "The Aug. 15 report is an unclassified summary of those classified briefings, which expanded on our findings in a classified January 2017 report."

<http://spacenews.com/nuclear-command-and-control-problems-dominate-u-s-air-force-focus-gao-finds/>

[Return to top](#)

Knoxville News Sentinel (Knoxville, TN)

Oak Ridge Makes First Transuranic Waste Shipment

By Brittany Crocker

August 15, 2017

Oak Ridge's Transuranic Waste Processing Center just made its first shipment to a permanent disposal facility in five years.

Transuranic waste is a mix of materials and debris contaminated with elements that have a higher atomic mass than uranium: elements like Plutonium -- once produced in Oak Ridge's X-10 graphite reactor, or Americium -- the element that contaminated "the Atomic Man," or Tennessine -- the 117th element named for Oak Ridge National Laboratory's role in its discovery.

According to Oak Ridge Environmental Management, most of Oak Ridge's transuranic waste is from previous ORNL research and isotope production missions.

The waste is headed to the Waste Isolation Pilot Plant (WIPP), near Carlsbad, New Mexico.

WIPP stores radioactive waste more than 2,000 feet below the Earth's surface in a massive salt formation in southeastern New Mexico. The salt mine is particularly helpful in the storage of containerized waste because over time, salt tends to flow downward and pack itself around things like storage containers, forming a seal.

Much of Oak Ridge's transuranic waste was scheduled to ship in 2014. However, in late 2013, Los Alamos National Laboratory nuclear operators filled a waste drum destined for disposal at the WIPP with the wrong kind of kitty litter to absorb radioactive material in the drum, according to a Department of Energy report.

The bad litter set off a chemical reaction in the drum, causing it to pop open underground and leak radiation to the surface. The leak contaminated nearly two dozen workers and shut down the WIPP for three years.

WIPP operations resumed in January 2017.

"I'm very proud of how our workforce has responded to the unexpected challenges during the past several years" said Linda Beach, North Wind Solutions program manager at the Transuranic Waste Processing Center.

"They have been committed to our mission, and showed great innovation to identify ways to continue making progress and safely store waste despite the delay in shipments."

With operations at WIPP ramping up, Oak Ridge Environmental Management said it anticipates making multiple shipments each month

"Resuming shipments has been an important priority for our program due to the large inventory of processed waste that is stored in onsite facilities," said Jay Mullis, acting manager of the Oak Ridge Office of Environmental Management.

"These shipments will remove risk from our site and help fulfill our commitments to the state of Tennessee. This was only possible through a lot of hard work from the federal and contractor employees here and support from staff in Carlsbad."

A 2016 Department of Energy report said WIPP expects to receive 1,930 cubic meters (about the size of a filled hot-air balloon) of contaminated waste from Oak Ridge before 2050. It is unclear how much of that sum is on the road now.

Eligibility to ship transuranic waste depends on waste meeting certain requirements for safe transportation and disposal.

The weather, WIPP operations and logistics like how quickly WIPP storage containers are filled will determine which Energy Department site gets to ship how much material and when.

<http://www.knoxnews.com/story/news/2017/08/15/oak-ridge-makes-first-transuranic-waste-shipment/567985001/>

[Return to top](#)

The Next Platform (Boone, NC)

A Look Inside U.S. Nuclear Security's Commodity Technology Systems

By Ken Strandberg

August 10, 2017

In the following interview, Dr. Matt Leininger, Deputy for Advanced Technology Projects at Lawrence Livermore National Laboratory (LLNL), one of the National Nuclear Security Administration's (NNSA) Tri Labs describes how scientists at the Tri Labs—LLNL, Los Alamos National Laboratory (LANL), and Sandia National Laboratories (SNL)—carry out the work of certifying America's nuclear stockpile through computational science and focused above-ground experiments.

We spoke with Dr. Leininger about some of the workflow that Tri Labs scientists follow, how the Commodity Technology Systems clusters are used in their research, and how machine learning is helping them.

The overall goal is to demonstrate a predictive science capability with our codes and simulation environments. To achieve this, we must be able to predict not only an answer but accurate error bars. The uncertainty quantification (UQ) stage of our workflow utilizes our multi-physics codes to conduct massive parameters studies to determine where the largest uncertainties lie.

Those uncertainties are refined by then conducting experiments and large-scale (full machine) capability simulations on the hydrodynamics, materials science, chemistry, or other physical phenomena. The experiments and capability simulations produce a better understanding of the physical processes involved and lead to the development of more accurate approximate models that can be incorporated into our multi-physics codes. As this process is repeated, we reduce the uncertainties, gain a better understanding of the complex physical processes involved, and mature our codes towards the goal of predictive simulation.

That's our general workflow for a lot of our open science as well as our internal NNSA work. To support this computational science work, we procure systems under the Commodity Technology Systems (CTS) and the Advanced Technology Systems (ATS) programs.

The CTS systems are the everyday workhorses for both UQ parameter studies and medium-sized capability simulations. These systems are deployed in blocks of one or more 192-node Scalable Units (SUs), which are the cost-effective building blocks for these machines. The scientists and engineers run jobs on the CTS machines that range from a few nodes to several thousand nodes. For some work, the CTS platforms are used as stepping stones to prepare for larger scale UQ parameter studies or full machine capability simulations on our ATS machines.

The ATS are the much bigger machines, like Sierra and Trinity from the CORAL and APEX procurements. Sierra will be used for larger UQ ensembles, while Trinity is targeted for large capability jobs. They are both designed to scale out and run much, much larger single jobs than what can be run on the CTS machines. But, both the CTS and ATS machines are part of the Advanced Simulation and Computing (ASC) program in the NNSA that funds the computational science in the labs.

The CTS platforms are used for work under the NNSA ASC program, and also internal programs, such as Laboratory Directed Research and Development (LDRD), plus some additional collaborative efforts with external partners. About half of the CTS cycles go towards the ASC work while the other half goes to LDRD and other efforts. The Livermore High Performance Computing Innovation Center (HPC-IC) is one example that provides CTS cycles as part of joint research efforts by LLNL and various industry partners. Some recent case studies include modeling the power grid to

provide cost-efficient energy distribution, near real-time heart simulation for cardiotoxicity studies, and modeling of semi-trucks to provide a 17% gain in fuel economy. Our CTS and ATS platforms support all this work.

Under the first CTS purchases (CTS-1), the Tri Labs have deployed about 83 SUs so far in 16 different systems from one to 14 SU's. We started deploying about 15 months ago, and all CTS cluster are currently in production. We are starting another round of purchases that will deploy about 10 SU's across the Tri Labs as a combination of standard CTS compute and some GPU-enabled nodes.

Users are excited to be using the new machines, but it takes time to get some work moved over from older clusters and working on the new machines. Even though it's Linux, it's a new version with an updated software environment. The migration from InfiniBand or Intel True Scale to Intel OPA has been very smooth for users, because their codes all run MPI. The users are accustomed to running on both InfiniBand and Intel True Scale systems, so software-wise it's been a pretty smooth migration. As with any new technology, there are a few things, like software updates and driver bugs that we've worked with Intel on to iron out. But, for most of our users, it's been pretty transparent.

We have a broad assortment of codes used across the labs where most are home-grown, scalable applications. There are certainly a lot of workloads across different areas of science, but molecular dynamics, particle transport, laser plasma interactions, material science, chemistry, and shock hydrodynamics, are a few areas we study.

Material science is a key expertise for the labs. Usually the conditions we're interested in are where the materials are in very extreme conditions—very high temperatures, high pressures, and other conditions that stress the material to limits. We're interested in nearly all properties related to what materials are doing under those conditions, from single molecules all the way up to microscopic and macroscopic kinds of approximations.

The labs have always been big users of data analysis and visualization. We're just starting to integrate some aspects of machine learning into our workloads. There's a lot of focus right now on machine learning by several LDRD projects and other programmatic funding. Applying machine learning techniques to UQ is one area we'd like to demonstrate an impact.

An example of how we're using machine learning is in these UQ studies. When you have thousands and thousands of jobs to run, how do you determine what sort of parameter space you should cover, how much do you need to cover, and in what sort of way in order to optimize and efficiently run these jobs? That can be very difficult to do manually in terms of person-time. We're working on several projects at LLNL to understand how to make that workflow easier by running and watching a UQ job, probing it for information to do training, and then using the insight to look at the job and the uncertainty space. We've started to see the impact of machine learning for UQ, but it is also in the very early research stage.

We're always tracking what's going on with new technologies as part of our focus for CTS and ATS platforms. CTS-2 is scheduled for deployment in 2020 or 2021 with an RFP being released in late 2019 or 2020. Our key requirements for CTS are to leverage the cost-effectiveness of commodity systems, and to support the entire ASC and Tri Lab portfolio of applications from the first day of deployment. We do not want to force users to make a lot of code changes.

However, when you look at the ATS systems, you see more revolutionary processor and memory architectures. As our applications get running on those machines and scientists get experience with that architecture, we can start understanding what's the right timing for perhaps incorporating

those technologies into CTS. Then, we'll have to address changing our code to get ready for the MIC era, whether it's GPUs or Intel Xeon Phi processors.

But, for now, CTS is really meant for people who are migrating from what they've been running. That usually means running MPI-based codes on high-performant multi-core nodes.

<https://www.nextplatform.com/2017/08/10/look-inside-u-s-nuclear-securitys-commodity-technology-systems/>

[Return to top](#)

War on the Rocks (Washington, DC)

When Should the President Use Nuclear Weapons?

By Rebecca Hersman

August 14, 2017

In the United States, we do not just elect a president. We elect a commander-in-chief, and the Constitution grants that person tremendous power to protect and defend the nation. In doing so, the founding fathers entrusted an awesome responsibility to our electorate. No burden on the American president is greater than the authority to use nuclear weapons in defense of the nation. The U.S. nuclear arsenal, as well as the command and control system that surrounds and supports it, is designed to protect the United States and its allies from the most severe and catastrophic threats that are unresolvable through any other measure.

For this reason, the president is granted extraordinary authorities regarding the use of these weapons. But these authorities are not boundless, nor should they be. These authorities depend on context and are constrained by law and policy. Only the president can authorize the use of nuclear weapons, and a rigorous process and protocol exist to ensure that he or she can do so appropriately. These well-practiced procedures and mechanisms are designed to ensure that the president has all necessary information and the best advice from legal experts, military commanders, and civilian leaders, when these extraordinary circumstances arise.

The confidence that the president can and will act under such circumstances is no less important to nuclear deterrence than the weapons themselves. Weapons that cannot or will not be used reliably and responsibly cannot deter. At the same time, there must be confidence among all who follow in the chain of command that the order to launch such a weapon is legal and legitimate. At the end of the day, the authority, but most importantly the responsibility and accountability, for the use of U.S. nuclear weapons rests solely with the president. It is a burden the president must carry, not one to slough off to "the generals."

First and foremost, nuclear policy, doctrine, and procedures are designed to ensure that these weapons will not be used without the full, expressed, and carefully considered authorization and accountability of the president. It is, in fact, a constraining policy, supported by a vast network of personnel, procedures, facilities, equipment, and communications. These powers are not designed to embolden a president to use nuclear weapons, but rather to ensure that these weapons can be used when necessary and appropriate.

The system is also designed to ensure that these weapons can be used under the direst and most time-constrained circumstances imaginable — when the United States or its allies are under imminent attack and our way of life would be threatened absent immediate action. Normally, this is considered plausible only in response to a nuclear attack, although throughout the Cold War the United States considered the prospect of a nuclear response to an overwhelming conventional

assault on our NATO allies. This option was solely defensive and a last resort, as it remains today. If such urgency and severity do not exist, the legitimacy of employing nuclear weapons could be called into serious question.

Under Article II of the Constitution, the president is the commander in chief of the nation's armed forces, which today includes both conventional and nuclear forces. Even the 1973 War Powers Resolution, which represents an attempt by Congress to constrain the president in terms of the use of force, fully recognized that extraordinary circumstances requiring rapid military response could exist, including circumstances that might lead to a nuclear conflict. In such instances, the law permits the president to act quickly and notify Congress after the fact. The legal authority to use the nation's nuclear arsenal is treated no differently than the use of the vast conventional capabilities at the president's disposal, and the role of Congress in authorizing or approving such action is the same as with any conventional military action — no more and no less.

Decisions to use nuclear weapons are not above or immune from the law. The use of America's military might, including its nuclear weapons, has always been governed by the U.S. Constitution and shaped by the laws of armed conflict. The active consideration of factors such as proportionality and the mitigation of civilian casualties are reflected in law and remain critical in considering the use of nuclear weapons, just as they would govern the use of force in conventional conflict. It is difficult to see how the pre-emptive first-use of a nuclear weapon against targets for which plausible conventional options exist — in a crisis that unfolds over weeks and months, as opposed to minute and hours — and against an adversary of vastly inferior capability would meet many of the tests of necessity and legitimacy and therefore garner support from those charged with providing the president with best military and legal advice.

Can a president order the use of nuclear weapons against the advice and counsel of those charged with providing it? Yes. Would such an order be followed? Almost certainly. But a president who overrules such advice and chooses to unleash such an attack would be forced to reckon with Congress, the American people, and even the world the day after. And those senior officers who transmit such an order down through the chain of command would not be immune from scrutiny.

To put it mildly, context matters.

In the current context, the president, members of Congress, and U.S. citizens must consider the following questions before using nuclear weapons:

- Is the crisis at hand a matter of such urgency that using time for debate, consultation, negotiation, and diplomacy places vital U.S. interests at unacceptable risk?
- Is the magnitude of the crisis so severe that the risks cannot be addressed through conventional military capabilities, and the United States can only protect its interests or citizens by using the most powerful weapons the world has ever known?
- Is the crisis so urgent and extraordinary that the use of a nuclear weapon could be considered reasonably proportional and the target appropriate and essential for the nation's self-defense?

The answers to such questions are principally matters of judgment, but they can also become matters of legality and legitimacy if the fundamental principles that shape our laws, policies, and plans are ignored. Failure to appropriately consider these factors and ensure a legal basis for action could raise questions about the lawfulness of an order, placing at serious jeopardy not only the crisis at hand but also the broader system of nuclear command and control that has deterred our enemies and protected Americans and our allies for more than 70 years. If the answer to these questions is clearly no, then the nation's security is best served by focusing on the range of non-

nuclear options in the president's toolkit. Employing the most destructive weapons on the planet should be reserved for the extraordinary circumstances that would warrant their use.

<https://warontherocks.com/2017/08/when-should-the-president-use-nuclear-weapons/>

[Return to top](#)

US COUNTER-WMD

Homeland Preparedness News (Washington, DC)

US Agencies Join Turkish Counterparts for Training in Combating Nuclear Smuggling

By Chris Galford

August 15, 2017

Representatives of the National Nuclear Security Administration (NNSA) and the Federal Bureau of Investigation (FBI) worked with the Turkish National Police last month to provide radiation detection systems and training.

Their goal was to enhance capabilities to detect smuggled nuclear and radiological materials. As part of that, agents went to the Turkish International Academy Against Drugs and Organized Crime and provided both hands-on exercises and classroom lectures.

"The recently completed training with the Turkish National Police is an important step toward expanding our relationship with a key partner in a strategically significant region of the world," David Huizenga, acting deputy administrator for Defense Nuclear Nonproliferation, said. "We look forward to continuing to work with the Turkish government to prevent nuclear and radiological smuggling."

The NNSA said the project has been a longstanding priority, as it seeks to enhance the radiological and nuclear detection capabilities of Turkey—a U.S. and NATO ally.

<https://homelandprepnews.com/stories/23739-us-agencies-join-turkish-counterparts-training-combating-nuclear-smuggling/>

[Return to top](#)

Foreign Policy (Washington, DC)

Mapped: U.S. and Allied Missile Defenses Against North Korea

By Paul McLeary & C.K. Hickey

August 11, 2017

This is why America has put so much effort into radars and missile interceptors.

Faced with North Korean threats to launch medium-range ballistic missiles over Japanese airspace and toward Guam in coming days, Japan is scrambling to move four Patriot missile defense batteries to its western shores, defense officials in Tokyo announced Friday.

The Patriot PAC-3 surface-to-air interceptors wouldn't be able to intercept the North Korean missiles — they would be well outside of the system's range — but could target any pieces of the rockets that might fall over western and southern Japan if the launches failed, officials said.

The move highlights just how seriously American allies in East Asia are taking the war of words between President Donald Trump and the North Korean regime, and the real possibility that Pyongyang might actually let the missiles fly. On Friday, Trump tweeted that "Military solutions are now fully in place, locked and loaded, should North Korea act unwisely. Hopefully Kim Jong Un will find another path!"

Defense Secretary Jim Mattis, asked about the issue while traveling in Washington state on Thursday, told reporters, "do I have military options? Of course I do. That's my responsibility, to have those. And we work very closely with allies to ensure that this is not unilateral either."

The U.S.-made Patriot batteries aren't the only pieces of high-tech American military gear in Japan that will have its ears perked up. The U.S. Army also operates two TPY-2 radar facilities used for monitoring North Korean missile tests at the Japanese Air Self-Defense Force bases at Kyogamisaki and Shariki in northern Japan. The U.S. bases another TPY-2 at Andersen Air base in Guam.

The Japanese don't have any other land-based missile defense systems, but have been looking into purchasing the THAAD missile interceptor, which the United States deployed to South Korea earlier this year. Another option is Aegis Ashore, a naval tracking and missile defense system that has been converted to a land defense battery. It is currently operational in Romania, with another opening in Poland in 2018. Several Japanese warships also have the Aegis system.

There are also two large American naval bases in Japan — Saseba and Yokosuka — that harbor over 20 U.S. Navy ships from the U.S. Seventh Fleet. Most of the cruisers and destroyers are equipped with Aegis, but they would need to be in position in the Sea of Japan in order to track and hit the missiles in their ascent phase. Most of the ships are currently on operations in other parts of the Pacific Ocean — some thousands of miles away — and it is unclear if any are currently in position to intercept a missile.

The USS Ronald Reagan, an aircraft carrier, is also based at Yokosuka. The flattop pulled into port just days ago after a three-month deployment at sea. Naval officials says the ship can be put back out to sea within days if the need arises.

If the missiles make it past Japan and approach Guam, the THAAD system on the island would be able to pick them up and target them in their descent phase over the ocean.

<http://foreignpolicy.com/2017/08/11/mapped-u-s-and-allied-missile-defenses-against-north-korea/>

[Return to top](#)

The Verge (New York, NY)

AI Can Now Detect Anthrax Which Could Help the Fight Against Bioterrorism

By Rachel Becker

August 7, 2017

Scientists trained AI to recognize anthrax spores

In an effort to combat bioterrorism, scientists in South Korea have trained artificial intelligence to speedily spot anthrax. The new technique is not 100 percent accurate yet, but it's orders of

magnitude faster than our current testing methods. And it could revolutionize how we screen mysterious white powders for the deadly bioweapon.

Researchers at the Korea Advanced Institute of Science and Technology combined a detailed imaging technique called holographic microscopy with artificial intelligence. The algorithm they created can analyze images of bacterial spores to identify whether they're anthrax in less than a second. It's accurate about 96 percent of the time, according to a paper published last week in the journal *Science Advances*.

Anthrax is an infection caused by the bacteria *Bacillus anthracis*, which lives in soil. (Both the infection and the bacteria are often referred to as anthrax.) People can accidentally get anthrax infections when they handle the skin or meat of infected animals. But anthrax can also be a dangerous bioweapon: in 2001, anthrax spores sent in the mail infected 22 people and killed five of them.

Once the spores enter the body, they germinate and multiply, causing a flu-like illness that poisons the blood. At least 85 percent of people infected by inhaling the spores die if left untreated, sometimes within just one to two days after symptoms appear. (Anthrax infections of the skin, by contrast, tend to be less fatal.) For people especially at risk of contracting anthrax, like lab workers or people who work with animal hair, there's a vaccine. For the rest of us, there are antibiotics — but these work best when they're started as soon as possible after exposure.

IT'S IMPORTANT TO DETECT ANTHRAX FAST

So it's important to detect anthrax fast. Right now, one of the most common methods is to analyze the genetic material of the spores or, once someone is infected, of the bacteria found in infected tissue. But that typically requires giving the spores a little time to multiply in order to yield enough genetic material to analyze. "It's still going to take the better part of a day with the most rapid approaches to get a result," says bacteriologist George Stewart at the University of Missouri, who has also developed an anthrax detector and was not involved in this study.

In search of a quicker screening technique, the study's lead author, physicist YongKeun Park, teamed up with South Korea's Agency for Defense Development. The goal is to be prepared in case North Korea is developing anthrax as a bioweapon, he says.

Park turned to an imaging technique called holographic microscopy: unlike conventional microscopes, which can only capture the intensity of the light scattering off an object, a holographic microscope can also capture the direction that light is traveling. Since the structure and makeup of a cell can change how light bounces off of it, the researchers suspected that the holographic microscope might capture key, but subtle, differences between spores produced by anthrax and those produced by closely related, but less toxic species.

THE AI COULD ID THE ANTHRAX SPORES WITHIN SECONDS

Park and his team then trained a deep learning algorithm to spot these key differences in more than 400 individual spores from five different species of bacteria. One species was *Bacillus anthracis*, which causes anthrax, and four were closely related doppelgängers. The researchers didn't tell the neural network exactly how to spot the different species — the AI figured that out on its own. After some training, it could distinguish the anthrax spores from the non-anthrax doppelgänger species about 96 percent of the time.

The technique isn't perfect, and as a tool intended to detect bioweapons, it has to be. "The drawback is that the accuracy is lower than conventional methods," Park says. There are also multiple strains of each of the bacteria species analyzed — but the machine was trained on only one strain per

species. Subtle differences between the strains might be able to throw off the algorithm, Stewart says. Still, the new technique is so rapid that it could come in handy. "It doesn't require culturing organisms, it doesn't require extracting DNA, it doesn't require much of anything other than being able to visualize the spores themselves," Stewart says.

"IT COULD ENHANCE OUR PREPARATION FOR THIS KIND OF BIOLOGICAL THREAT."

Next, Park wants to feed the neural network more spore images, in order to boost accuracy. In the meantime, the method could be used as a pre-screening tool to rapidly determine whether a white powder that people have been exposed to is anthrax, and if they should start antibiotics. A slower, more accurate method could then confirm the results.

"This paper will not change everything," Park says, but it's one step toward a method that can quickly detect anthrax. "It could enhance our preparation for this kind of biological threat."

<https://www.theverge.com/2017/8/7/16110562/anthrax-artificial-intelligence-deep-learning-neural-network-bioweapon>

[Return to top](#)

Phys.org (Isle of Man, UK)

Researchers Produce Smart Fabric to Neutralize Nerve Gas

Author Not Attributed

August 16, 2017

From the lab of City College of New York chemical engineer and Fulbright Scholar Teresa J. Bandosz comes a groundbreaking development with the potential to thwart chemical warfare agents: smart textiles with the ability to rapidly detect and neutralize nerve gas.

The fabric consists of a cotton support modified with Cu-BTC MOF/oxidized graphitic carbon nitride composites. The latter were developed in the lab previously and tested as nerve agent detoxification media and colorimetric detectors.

Combining Cu-BTC and g-C₃N₄-ox resulted in a nanocomposite (MOFgCNOx) of heterogeneous porosity and chemistry. Upon the deposition of MOFgCNOx onto cotton textiles, a stable fabric with supreme photocatalytic detoxification ability towards the nerve gas surrogate, dimethyl chlorophosphate, was obtained.

The detoxification process was accompanied by a visible and gradual color change, which Bandosz said can be used for the selective detection of chemical warfare agents and for monitoring their penetration inside a protective layer.

"These smart textiles adsorbed almost 7g of CWA surrogate/its detoxification products per gram of Cu. The superior performance was linked to the high dispersion of the MOF crystals on the fibers, and a specific texture promoting the availability of the active copper centers," said Bandosz, who is seeking funding for additional research.

<https://phys.org/news/2017-08-smart-fabric-neutralize-nerve-gas.html>

[Return to top](#)

US ARMS CONTROL

US News & World Report (New York, NY)

Disarmament Experts Urge Europe to Help Halt 'Cold War 2.0': German Minister

By Andrea Shalal

August 16, 2017

Disarmament experts have urged Europe to be vocal in helping to halt what they regard as a new Cold War in which global powers have embarked on a new conventional and nuclear arms race, Germany's foreign minister said on Wednesday.

Sigmar Gabriel was briefing reporters after hosting what he called a "very troubling" meeting of a commission known as "Deep Cuts", a panel created in 2013 to discuss arms control issues. It includes experts from the United States, Russia and Germany.

"They told us we are now repeating the worst mistakes of the Cold War and are in the middle of a Cold War 2.0," Gabriel said.

"They called on us in Europe to raise our voices and express our interests vis-a-vis Moscow and Washington, but also within NATO," Gabriel said.

He added it was particularly important now to focus on halting the nuclear arms race, given developments on the Korean Peninsula, where fears of a military clash between North Korea and the United States flared up last week.

U.S. President Donald Trump said in February the United States had "fallen behind on nuclear weapon capacity," and is pushing ahead with plans to spend more than \$1 trillion to modernise the existing nuclear arsenal.

Washington has also accused Russia of violating the 1987 Intermediate-Range Nuclear Forces (INF) treaty, which banned nuclear and conventional ground-launched ballistic and cruise missiles with a range of 500 to 5,500 km (300-3,400 miles).

Gabriel said it was critical for the United States and Russia to resume a dialogue on disarmament instead of slipping further into mutual recriminations and a new arms race spiral.

"Germany has an important voice within NATO and the European Union, and ... it must be used to call for disarmament and arms control," he said, noting that earlier disarmament efforts had come during tense points in ties between the two superpowers.

Gabriel, a Social Democrat (SPD), also blasted Chancellor Angela Merkel's conservatives for supporting Trump's call for Germany to essentially double its military budget, adding that spending existing funds more efficiently was more important.

The SPD is seeking to differentiate itself from Merkel's party, its senior coalition partner, ahead of Sept. 24 national elections, and has rejected a NATO target that calls for members to spend 2 percent of economic output on the military.

<https://www.usnews.com/news/world/articles/2017-08-16/disarmament-experts-urge-europe-to-help-halt-cold-war-20-german-minister>

[Return to top](#)

Politico (Washington, DC)

The GOP's Dangerous Plan to Build More Nukes

By Tom Collina and Rose Blanchard

August 11, 2017

Russia's nuclear aggression is a problem. But trashing a Reagan-era arms control agreement isn't the answer.

The U.S. Congress is on the verge of authorizing new nuclear weapons, trashing a major Reagan-era arms control agreement and putting us on the road to a new arms race with Russia. This is a huge mistake that would put U.S. and global security at risk, and proves the old saying: Those who ignore history are doomed to repeat it.

The number of nuclear weapons in the world has declined significantly since the end of the Cold War, and we continue, slowly, to progress toward disarmament. As Prime Minister Shinzo Abe said on Sunday, the 72nd anniversary of the U.S. bombing of Hiroshima, Japan would “firmly advance the movement toward a world without nuclear weapons.” Today, there are about 15,000 weapons left. Still far too many, but at least we are heading in the right direction.

And yet many in the Republican-controlled Congress now seem to have forgotten what got us this far: nuclear arms reduction agreements with Russia, negotiated mainly by Republican presidents. President Ronald Reagan signed the Intermediate-Range Nuclear Forces Treaty in 1987, and President George H.W. Bush signed the START Treaty in 1991. Presidents Bill Clinton, George W. Bush and Barack Obama continued the process, most recently with the 2010 New START Treaty bringing U.S. and Russian arsenals down to levels not seen since the 1950s.

These agreements provide the “rules of the road” so arsenals can be reduced in a safe, stable and predictable way. No one wants surprises when it comes to nukes. They set equal limits on weapons, and allow for inspections so both sides can trust, and verify, the process.

Now, all of this is at risk. Republicans in both the House and Senate are promoting legislation to authorize a new nuclear-capable ground-launched cruise missile that would, if tested, violate the INF Treaty. The House language goes so far as to set a time limit for U.S. withdrawal from INF and, if Russia does not comply, to prevent extension of New START in 2021. Linking INF to New START—which still clearly serves U.S. security interests—reveals the true intentions of those behind this legislation: destroy the bipartisan arms control process.

Make no mistake, the major blame for this mess lies with Moscow, which both the Obama and Trump administrations have found to be in violation of INF by deploying a small number of prohibited ground-launched cruise missiles in Russia. President Vladimir Putin could solve this whole thing tomorrow by dismantling these missiles and getting back into compliance. He should do so.

But the smart play here is to figure out how to get Russia back on the reservation, not provoke it to formally withdraw and start producing weapons in large numbers. And if the INF Treaty fails, we certainly don't want the blame to fall on the United States.

The first thing to realize is that this is primarily a political problem, not a military threat. As Air Force Gen. Paul Selva, vice chairman of the Joint Chiefs of Staff, told the Senate in July, “we're not restricted from fielding ballistic missiles or cruise missile systems that could be launched from ships or airplanes under the Intermediate Nuclear Forces Treaty, it is specific to land-based missiles.” So, any potential military gap could be filled by weapons that are not covered by INF.

"Given the location of the specific missile and the deployment, [the Russians] don't gain any advantage in Europe," Selva said.

Second, the Trump administration itself is opposed to the House language, saying it "unhelpfully ties the Administration to a specific missile system, which would limit potential military response options."

Third, even if the United States were to build a new ground-launched cruise missile, it would be next to impossible to get NATO to agree to deploy it. It would be a nuclear bridge to nowhere.

There are better ways to nudge Russia back into the fold, such as addressing its underlying concerns. Russia has always felt it got the short end of the stick with INF. China, which is not bound by INF, has hundreds of intermediate-range missiles that can reach Russia but not the United States. Russia is also worried that U.S. missile interceptor facilities being built in Romania and Poland, right on its western border, could be used—you guessed it—to fire ground-launched cruise missiles. There is a deal to be had here, if both sides are motivated.

Given the abysmal state of US-Russian relations, such a deal would take some time. Meanwhile, the United States should maintain diplomatic pressure and if needed could increase sanctions or beef up conventional military forces in or around NATO.

But Congress' tit-for-tat response to Russia's INF violation is counterproductive. This is not a military threat, but overreacting to it might make it so. The INF Treaty is the foundation of all subsequent arms reduction agreements, like New START. Let's leave the INF brick in the wall, not throw it through Russia's window.

<http://www.politico.com/agenda/story/2017/08/11/the-gops-dangerous-plan-to-build-more-nukes-000498>

[Return to top](#)

Russian Peacekeeper (Moscow, Russia)

US Seeks to Denounce Intermediate-Range Nuclear Forces Treaty - British Expert

Author Not Attributed

August 11, 2017

Politicians in Washington for a long time have accused Moscow of the Intermediate-Range Nuclear Forces (INF) Treaty. The lack of concrete evidence does not prevent the "hawks" from demanding from the White House the deployment of US precision-guided munition in Europe. Moreover, the "hotheads" in the Congress are urging the Pentagon to provide to the European allies the technologies for the production of intermediate-range and shorter-range missiles.

At the same time, military experts do not exclude that the US, accusing Russia of violating the INF Treaty, is simply looking for a justified pretext for unilateral withdrawal from the agreement.

"The Washington's logic is extremely clear: the document seriously limits the US military potential, and, consequently, the possibility of forceful pressure on unwanted regimes. Strategists in the White House have already learned how to invent the reasons for agreements's denunciation. After all, in 2001 the Americans withdrew from the ABM Treaty, arguing this step by the need to protect Europe from Iranian missiles", Kon Kohlin, British military analyst, says.

Russian colleagues also agree with him.

Russian political scientist Pavel Zolotarev claims that Washington is advantageous to deploy banned missiles in the Asia-Pacific and the Middle East in order to strengthen military power.

"US aircraft carriers can be attacked by Chinese intermediate-range and shorter-range missiles. It is very likely that Washington intends to place banned land-based missiles on Japanese islands. And the deployment of missiles in the Middle East will deter Iran", expert says.

He also doubts that Russia will violate the provisions of the INF Treaty or intend to denounce it.

<http://peacekeeper.ru/en/?module=news&action=view&id=31032>

[Return to top](#)

Financial Tribune (Tehran, Iran)

US Push for Scrapping Nuclear Treaty With Russia

Author Not Attributed

August 8, 2017

US media reported that Congress is preparing several bills, the provisions of which would require the Pentagon to violate the 1987 Intermediate-Range Nuclear Forces Treaty between the United States and Russia.

According to Politico, the US Senate will soon debate a provision in its version of the defense policy bill, which would set aside \$65 million and also require the military to reintroduce a missile with a range of between 500 and 5,500 kilometers, Sputnik reported. The bill in the House of Representatives will point out that while the new missiles would be conventional, they, along with nuclear missiles, would still be considered banned under the nuclear disarmament agreement.

According to analyst Ilya Kharlamov, the agreement marked the first real disarmament step by the two powers and contributed a lot to global stability and security.

<https://financialtribune.com/articles/international/69921/us-push-for-scrapping-nuclear-treaty-with-russia>

[Return to top](#)

ASIA-PACIFIC

South China Morning Post (Hong Kong, China)

Let Japan Develop Nuclear Weapons to Lessen North Korea Threat, Former US Navy Commander Says

By Robert Delaney

August 16, 2017

The suggestion of a nuclear-armed Japan would prompt China to restrain Pyongyang, said John Bird, a former US Navy commander in the Pacific

The US should agree on an expansion of nuclear weapons capabilities in the Pacific to Japan to curtail the threat posed by North Korea's newly developed nuclear weapons capability, as such a

scenario would prompt China to restrain its neighbour and traditional ally, said a former commander of the US Navy in the Pacific.

Recognising that Pyongyang will not give up its nuclear capability, the suggestion of a nuclear-armed Japan as a balancing force might also force China to back away from its demand that the US and Seoul dismantle a missile defence shield deployed by the US Navy in South Korea, retired vice admiral John M. Bird said in a presentation titled “North Korean Lessons for Japan”.

“Many thoughtful people have said we should introduce tactical nukes into the Western Pacific, making signals that Japan no longer considers the US nuclear umbrella adequate and is going their own way,” said Bird, who added that pre-emptive strikes on North Korea might be warranted under some conditions.

“Those sorts of things will pique China’s interest. Being that they’re upset about a THAAD, they’d be very upset and not like that option,” Bird added, referring to the acronym for the Terminal High Altitude Area Defence missile system. “And if they thought it was realistic, they – the PRC – might be willing to really weigh in with the North Koreans. That is only kind of diplomacy that’s going to make a difference.”

Bird and fellow panellist, the former assistant secretary of state Stephen Rademaker, addressed the new geopolitical reality that North Korea has boosted its leverage against the US and the country’s other regional foes, South Korea and Japan. Pyongyang has also asserted more independence from Beijing, which voted in favour of a new United Nations Security Council resolution earlier this month, which halts exports of coal, iron ore and other key commodities from North Korea.

North Korea’s “position is that denuclearisation is out of the question. They’ve written into their constitution that they are a nuclear-armed state”, Rademaker said. “We either have to persuade them to back off that position or we enter into a negotiation about limiting their nuclear capabilities where we’re changing our objectives ... to one of limiting and constraining the size and scope of their nuclear force.”

The UN resolution sparked an escalation in militaristic rhetoric between the US and North Korea, which culminated in a threat by Pyongyang to fire missiles into waters near the US Pacific territory of Guam.

Tensions have eased for the time being since North Korea announced that it is putting the plan to fire intermediate-range missiles towards Guam on hold.

Still, upcoming joint US-South Korea military exercises scheduled for next week, an annual event for nearly 40 years, could re-ignite the war of words. North Korea’s government regularly cites the exercises as evidence that the US and its allies in the region intend to subdue Pyongyang militarily. China and Russia have also called for a halt to the US-South Korea war games, which include live-fire drills.

Calls for a nuclear-armed Japan have grown in recent years in spite of the country’s pacifist constitution, partly as a result of failed efforts to resolve tensions around North Korea’s threats and nuclear ambitions.

Last year, the government of Shinzo Abe stated that there is nothing in the nation’s Constitution that explicitly forbids Japan from possessing or using nuclear weapons. Abe had stated previously that he is keen for Japan to play a more proactive role that recognises its economic power in international peacekeeping operations and in other security hotspots.

Article 9 of Japan’s post-Second World War constitution, which took effect in 1947, renounces war and prohibits Japan from maintaining the ability to wage war, according to a 2015 report by the US Library of Congress.

“However, as the United States changed its policy of demilitarising Japan, the United States asked her to share the burden of maintaining the security of Japan and, for the sake of international peacekeeping, Japan gradually increased its defence capability and developed a somewhat more technical interpretation of article 9. Article 9 does not prohibit Japan from maintaining her defence capability,” the report said.

Addressing China’s opposition to THAAD, Bird said the missile defence system doesn’t go far enough to counter the new reality of a nuclear-capable North Korea.

“We have not done enough with missile defence, and I do believe the Israelis are a good example of the level of effort we need to put into it,” Bird said. “We need to spend more effort and energy in [intelligence, surveillance and reconnaissance], hoping to identify any time North Koreans were to set up a missile. We should use our cyber capability and grow it as rapidly as we can in an effort to disrupt their command and control and grid system,” he said.

The US should also not rule out a pre-emptive attack “if we get fairly accurate information that they’re erecting a missile that may have a weapon on it”, the former Navy commander said.

The panel discussion with Bird and Hademaker was organised by the Jewish Institute for National Security of America.

<http://www.scmp.com/news/china/diplomacy-defence/article/2106952/let-japan-develop-nuclear-weapons-lesser-north-korea>

[Return to top](#)

The Diplomat (Tokyo, Japan)

North Korea's New High-Performance Missile Engines Likely Weren't Made in Russia or Ukraine

By Ankit Panda

August 16, 2017

However, U.S. intelligence has a good idea of the kind of engine North Korea is using in its new long-range missiles.

The first stage of North Korea’s new intercontinental-range ballistic missile (ICBM), the Hwasong-14 (KN20), and intermediate range ballistic missile (IRBM), the Hwasong-12 (KN17), both use a variant of a Soviet-origin engine.

Specifically, both missiles, based on their observed flight tests, use a single-chambered variant of the Soviet-origin RD-250 family of liquid-propellant engines with 48 tons of thrust, according to current U.S. intelligence assessments. The engines make use of high-energy, storable hypergolic liquid propellants.

U.S. government sources with knowledge of the latest intelligence on North Korea’s ballistic missile and nuclear programs confirmed the assessment to The Diplomat, which supports part of an open-source finding released this week by Michael Elleman of the International Institute for Strategic Studies.

Elleman published a report outlining the RD-250-variant finding on Monday, in which he calculated a 48 ton thrust engine in both tests off publicly released imagery and video footage of North Korea’s recent launches. He additionally assessed that engines in both the new ICBM and IRBM belonged to the RD-250 family.

North Korea first tested this liquid propulsion engine on March 18 this year; the engine was dubbed the “March 18 revolution” by Kim Jong-un. North Korean state media included an ominous warning that the “whole world will soon witness what eventful significance the great victory won today carries.” Weeks later, the first flight test attempts of the Hwasong-12 began out of Sinpo, culminating in the first successful flight-test of that system in May 2017.

While U.S. intelligence has assessed the design origins of the engine as belonging to the Soviet-origin RD-250 family, sources who spoke to The Diplomat said there is no confident U.S. assessment of the specific provenance of the engines in North Korea’s inventory today.

Notably, in contradiction with Elleman’s conclusions about the origins of these engines, which were covered in the New York Times earlier this week and in the Washington Post in July, the U.S. intelligence community does not currently assess that North Korea procured engines from the former Soviet Union. Neither Ukrainian nor Russian entities are currently assessed to have sold or transferred engines from the RD-250 family to North Korea.

To the contrary, The Diplomat has independently confirmed an assessment first reported by Reuters that parts of the U.S. intelligence community assess that North Korea likely has the capability to manufacture a liquid propulsion engine like the “March 18 revolution” indigenously.

While U.S. intelligence assesses that North Korea has the indigenous capability to manufacture engines like these, it has not assessed either way if it is already doing so or doing so independently. One source told The Diplomat that North Korea, if it did develop and manufacture this RD-250-variant engine indigenously, likely “codeveloped” the system with Iran.

Some evidence of Iranian involvement in North Korean ballistic missile engine development was apparent in 2016. In January that year, the U.S. Treasury Department sanctioned “11 individuals and entities” for their involvement in broader ballistic missile procurement for Iran.

The Treasury Department also noted in that announcement that “[w]ithin the past several years, Iranian missile technicians from SHIG (Shahid Hemmat Industrial Group) traveled to North Korea to work on an 80-ton rocket booster being developed by the North Korean government.”

In September 2016, North Korea carried out a static test of an engine that it claimed precisely exhibited an 80 ton force thrust. That engine has yet to be used in a North Korean ballistic missile, but was likely the engine built with Iranian assistance the January 2016 U.S. Treasury release referred to.

Whatever the origins of these new RD-250-variant liquid propulsion engines at the heart of the Hwasong-12 and the first stage of the Hwasong-14, according to sources who spoke to The Diplomat, there is currently no serious belief in the U.S. intelligence community that North Korea imported RD-250 units from either Ukraine or Russia.

<http://thediplomat.com/2017/08/north-koreas-new-high-performance-missile-engines-likely-werent-made-in-russia-or-ukraine/>

[Return to top](#)

Reuters (New York, NY)

Japan to Seek Assurance of U.S. Defense Pledge, Including Nuclear Deterrence

By Tim Kelly

August 14, 2017

Japan's defense chief and foreign minister will meet their U.S. counterparts on Thursday to reaffirm Washington's commitment to defending Japan, including the use of its nuclear deterrent, as threats from North Korea intensify.

Japan's Minister of Defence, Itsunori Onodera, and Minister of Foreign Affairs, Taro Kono, travel to the U.S. capital this week for "two-plus-two" meetings with Defense Secretary Jim Mattis and Secretary of State Rex Tillerson, the Japanese government announced on Tuesday.

The meetings come with tensions high in East Asia with North Korea threatening to fire missiles into the waters close to the U.S. Pacific territory of Guam. The missiles would have to fly over Japan to reach their target worrying Tokyo that warheads or missile debris could fall on its territory.

U.S. President Donald Trump has warned of "fire and fury" if North Korea threatens the United States, and said the U.S. military is "locked and loaded".

"The strategic environment is becoming harsher and we need to discuss how we will respond to that," a Japanese foreign ministry official said in a briefing in Tokyo. "We will look for the U.S. to reaffirm its defense commitment, including the nuclear deterrent," he added.

Under Japan's alliance treaty with the United States, Washington has pledged to defend Japan. It has put Japan under its nuclear umbrella, meaning it could respond to any attack on Japan with atomic weapons.

A renewed commitment by Washington to that promise would reassure Tokyo as it looks to bolster its defenses against possible North Korean military action.

<https://www.reuters.com/article/us-japan-usa-defence-idUSKCN1AV046>

[Return to top](#)

The Asahi Shimbun (Tokyo, Japan)

Japan, U.S. Conduct Air Drills as N. Korea Keeps Eye on 'Yankees'

Author Not Attributed

August 17, 2017

Japanese jets conducted air maneuvers with U.S. bombers southwest of the Korean Peninsula on Wednesday as North Korea considered whether to fire missiles towards the U.S.-administered territory of Guam.

Reclusive North Korea has made no secret of its plan to develop a missile capable of firing a nuclear warhead at the United States to counter what it perceives as constant U.S. threats of invasion.

It has ignored warnings from the West and from its lone major ally, China, to halt its nuclear and missile tests which it conducts in defiance of U.N. Security Council resolutions.

The exercise in the East China Sea involved two U.S. Air Force B-1B Lancer bombers flying from Andersen Air Force Base on the Pacific island of Guam and two Japanese F-15 jet fighters, Japan's Air Self-Defense Force said in a news release.

"These training flights with Japan demonstrate the solidarity and resolve we share with our allies to preserve peace and security in the Indo-Asia-Pacific," the U.S. Air Force said in an announcement.

The U.S. aircraft, which were designed to carry nuclear bombs and later switched to conventional payloads, have flown several sorties in East Asia over recent weeks. In addition to air drills with Japanese fighters, the bombers have also exercised with South Korean aircraft.

North Korea regards the U.S. exercises with South Korea and Japan as preparations to invade it.

The exercises also upset China, which says they do nothing to ease tension.

On Wednesday, a senior Chinese military officer reiterated China's position on the need to maintain peace and stability to the United States' top general, chairman of the U.S. Joint Chiefs of Staff Joseph Dunford, China's Defense Ministry said.

Song Puxuan, commander of China's Northern Theater Command, stressed to Dunford that the North Korean nuclear issue must be resolved politically through talks, the ministry added, without saying where the two met.

The command is based in China's northeastern city of Shenyang and has responsibility for a swath of northern China, including the border with North Korea.

North Korean leader Kim Jong Un has delayed a decision on firing missiles towards Guam and U.S. officials have since taken a gentler tone, but tension in the region nonetheless remains high.

The North Korean threats had prompted U.S. President Donald Trump to say the U.S. military was "locked and loaded" if North Korea acted unwisely. Those words in turn prompted a warning from China for both sides to tone down the rhetoric.

North Korea has often threatened to attack the United States and its bases in the region and it is likely to be infuriated by the current maneuvers and annual U.S.-Japanese drills next week.

In his first public appearance in about two weeks, Kim on Monday inspected the command of North Korea's army, examining the plan to fire four missiles aimed at landing near Guam, the official KCNA news agency reported.

"He said that if the Yankees persist in their extremely dangerous reckless actions on the Korean Peninsula and in its vicinity, testing the self-restraint of the DPRK, the latter will make an important decision as it already declared," KCNA said.

DPRK stands for the Democratic People's Republic of Korea, North Korea's official name.

Wednesday's air exercise took place close to Japanese-controlled islets in the East China Sea, which are also claimed by China. The uninhabited territory is known as Senkaku in Japan and Diaoyu in China.

While the United States has declined to take sides in the dispute over the tiny islands, it nonetheless has said it would defend them from attack under its security alliance with Japan.

Chinese Foreign Minister Wang Yi, in a telephone conversation with Sigmar Gabriel, Germany's minister for foreign affairs, said tension on the Korean Peninsula was showing some signs of easing but had not passed.

The parties involved should "make a correct judgment and wise choice by taking a responsible attitude toward history and people", Wang said, according to a statement on his ministry's website.

<http://www.asahi.com/ajw/articles/AJ201708170015.html>

[Return to top](#)

EUROPE/RUSSIA

BBC News (London, UK)

The Atomic Bomb That Was Too Big to Use

By Stephen Dowling

August 16, 2017

In 1961, the Soviet Union tested a nuclear bomb so powerful that it would have been too big to use in war. And it had far-reaching effects of a very different kind.

On the morning of 30 October 1961, a Soviet Tu-95 bomber took off from Olenya airfield in the Kola Peninsula in the far north of Russia.

The Tu-95 was a specially modified version of a type that had come into service a few years earlier; a huge, swept-wing, four-engined monster tasked with carrying Russia's arsenal of nuclear bombs.

The last decade had seen enormous strides in Soviet nuclear research. World War Two had placed the US and USSR in the same camp, but the post-war period had seen relations chill and then freeze. And the Soviets, presented with a rivalry against the world's only nuclear superpower, had only one option – to catch up. Fast.

On 29 August 1949, the Soviets had tested their first nuclear device – known as 'Joe-1' in the West – on the remote steppes on what is now Kazakhstan, using intelligence gleaned from infiltrating the US's atomic bomb programme. In the intervening years, their test programme had surged in leaps and starts, detonating more than 80 devices; in 1958 alone, the Soviet tested 36 nuclear bombs.

But nothing the Soviet Union had tested would compare to this.

The Tu-95 carried an enormous bomb underneath it, a device too large to fit inside the aircraft's internal bomb-bay, where such munitions would usually be carried. The bomb was 8m long (26ft), had a diameter of nearly 2.6m (7ft) and weighed more than 27 tonnes. It was, physically, very similar in shape to the 'Little Boy' and 'Fat Man' bombs which had devastated the Japanese cities of Hiroshima and Nagasaki a decade-and-a-half earlier. The bomb had become known by a myriad of neutral technical designations – Project 27000, Product Code 202, RDS-220, and Kuzinka Mat (Kuzka's Mother). Now it is better known as Tsar Bomba – the 'Tsar's bomb'.

Tsar Bomba was no ordinary nuclear bomb. It was the result of a feverish attempt by the USSR's scientists to create the most powerful nuclear weapon yet, spurred on by Premier Nikita Khrushchev's desire to make the world tremble at the might of Soviet technology. It was more than a metal monstrosity too big to fit inside even the largest aircraft – it was a city destroyer, a weapon of last resort.

The Tupolev, painted bright white in order to lessen the effects of the bomb's flash, arrived at its target point. Novya Zemlya, a sparsely populated archipelago in the Barents Sea, above the frozen northern fringes of the USSR. The Tupolev's pilot, Major Andrei Durnovtsev, brought the aircraft to Mityushikha Bay, a Soviet testing range, at a height of about 34,000ft (10km). A smaller, modified Tu-16 bomber flew beside, ready to film the ensuing blast and monitor air samples as it flew from the blast zone.

In order to give the two planes a chance to survive – and this was calculated as no more than a 50% chance – Tsar Bomba was deployed by a giant parachute weighing nearly a tonne. The bomb would slowly drift down to a predetermined height – 13,000ft (3,940m) – and then detonate. By then, the

two bombers would be nearly 50km (30 miles) away. It should be far enough away for them to survive.

Tsar Bomba detonated at 11:32, Moscow time. In a flash, the bomb created a fireball five miles wide. The fireball pulsed upwards from the force of its own shockwave. The flash could be seen from 1,000km (630 miles) away.

The bomb's mushroom cloud soared to 64km (40 miles) high, with its cap spreading outwards until it stretched nearly 100km (63 miles) from end to end. It must have been, from a very far distance perhaps, an awe-inspiring sight.

On Novaya Zemlya, the effects were catastrophic. In the village of Severny, some 55km (34 miles) from Ground Zero, all houses were completely destroyed (this is the equivalent to Gatwick airport being destroyed by a bomb that had fallen on Central London). In Soviet districts hundreds of miles from the blast zone, damage of all kinds – houses collapsing, roofs falling in, damage to doors, windows shattering – were reported. Radio communications were disrupted for more than an hour.

Durovtsev's Tupolev was lucky to survive; the blast wave from Tsar Bomba caused the giant bomber to plummet more than 1,000m (3,300ft) before the pilot could regain control.

One Soviet cameraman who witnessed the detonation said:

"The clouds beneath the aircraft and in the distance were lit up by the powerful flash. The sea of light spread under the hatch and even clouds began to glow and became transparent. At that moment, our aircraft emerged from between two cloud layers and down below in the gap a huge bright orange ball was emerging. The ball was powerful and arrogant like Jupiter. Slowly and silently it crept upwards... Having broken through the thick layer of clouds it kept growing. It seemed to suck the whole Earth into it. The spectacle was fantastic, unreal, supernatural."

Tsar Bomba unleashed almost unbelievable energy – now widely agreed to be in the order of 57 megatons, or 57 million tons of TNT. That is more than 1,500 times that of the Hiroshima and Nagasaki bombs combined, and 10 times more powerful than all the munitions expended during World War Two. Sensors registered the bomb's blast wave orbiting the Earth not once, not twice, but three times.

Because the fireball had not made contact with the Earth, there was a surprisingly low amount of radiation

Such a blast could not be kept secret. The US had a spyplane only tens of kilometres from the blast. It carried a special optical device called a bhangmeter useful for calculating the yield of far-off nuclear explosions. Data from this aircraft – codenamed Speedlight – was used by the Foreign Weapons Evaluation Panel to calculate this mystery test's yield.

International condemnation soon followed, not only from the US and Britain, but from some of the USSR's Scandinavian neighbours such as Sweden. The only silver lining in this mushroom cloud was that because the fireball had not made contact with the Earth, there was a surprisingly low amount of radiation.

It could have been very different. But for a change in its design to rein in some of the power it could unleash, Tsar Bomba was supposed to have been twice as powerful.

One of the architects of this formidable device was a Soviet physicist called Andrei Sakharov – a man who would later become world famous for his attempts to rid the world of the very weapons he had helped create. He was a veteran of the Soviet atomic bomb programme from the very beginning, and had been part of the team that had built some of the USSR's earliest atom bombs.

Sakharov began work on a layered fission-fusion-fission device, a bomb that would create further energy from the nuclear processes in its core. This involved wrapping deuterium – a stable isotope of hydrogen – with a layer of unenriched uranium. The uranium would capture neutrons from the igniting deuterium and would itself start to react. Sakharov called it the sloika, or layered cake. This breakthrough allowed the USSR to build its first hydrogen bomb, a device much more powerful than the atomic bombs of only a few years before.

Sakharov had been told by Khrushchev to come up with a bomb that was more powerful than anything else tested so far.

The Soviet Union needed to show that it could pull ahead of the US in the nuclear arms race, according to Philip Coyle, the former head of US nuclear weapons testing under President Bill Clinton, who spent 30 years helping design and test atomic weapons. “The US had been very far ahead because of the work it had done to prepare the bombs for Hiroshima and Nagasaki. And then it did a large number of tests in the atmosphere before the Russians even did one.

“We were ahead and the Soviets were trying to do something to tell the world that they were to be reckoned with. Tsar Bomba was primarily designed to cause the world to sit up and take notice of the Soviet Union as an equal,” says Coyle.

The original design – a three layered bomb, with uranium layers separating each stage – would have had a yield of 100 megatons – 3,000 times the size of the Hiroshima and Nagasaki bombs. The Soviets had already tested large devices in the atmosphere, equivalent to several megatons, but this would have been far, far bigger. Some scientists began to believe it was too big.

With such immense power, there would be no guarantee that the giant bomb wouldn’t swamp the north of the USSR with a vast cloud of radioactive fallout.

That was of particular concern to Sakharov, says Frank von Hippel, a physicist and head of Public and International Affairs at Princeton University.

“He was really apprehensive about the amount of radioactivity it would create,” he says, “and the genetic effects that could have on future generations

“It was the beginning of his journey from being a bomb designer to becoming a dissident.”

Before it was ready to be tested, the uranium layers that would have helped the bomb achieve its enormous yield were replaced with layers of lead, which lessened the intensity of the nuclear reaction.

The Soviets had built a weapon so powerful that they were unwilling to even test it at its full capacity. And that was only one of the problems with this devastating device.

The Tu-95 bombers built to carry the Soviet Union’s nuclear weapons were designed to carry much lighter weapons. The Tsar Bomba was so big that it couldn’t be placed on a missile, and so heavy that the planes designed to carry it wouldn’t have been able to take them all the way to their targets with enough fuel. And, if the bomb was as powerful as intended, the aircraft would have been on a one-way mission anyway.

Even where nuclear weapons are concerned, there can be such a thing as too powerful, says Coyle, who is now a leading member of the Center for Arms Control and Non-Proliferation, a think tank based in Washington DC. “It’s hard to find a use for it unless you want to knock down very large cities,” he says. “It simply would be too big to use.”

Von Hippel agrees. “These things [large free-falling nuclear bombs] were designed that if you wanted to be able to destroy the target even if you were a mile off, it could be done. Things moved in a different direction – increasing missile accuracy and multiple warheads.”

Tsar Bomba had other effects. Such was the concern over the test – which was 20% of the size of every atmospheric test combined before it, von Hippel says – that it hastened the end of atmospheric testing in 1963. Von Hippel says that Sakharov was particularly worried by the amount of radioactive carbon 14 that was being emitted into the atmosphere – an isotope with a particularly long half-life. “This has been partly mitigated by all the fossil fuel carbon in the atmosphere which has diluted it,” he says.

Sakharov worried that a bomb bigger than the one tested would not be repelled by its own blastwave – like Tsar Bomba had been – and would cause global fallout, spreading toxic dirt across the planet.

Sakharov became an ardent supporter of the 1963 Partial Test Ban, and an outspoken critic of nuclear proliferation and, in the late 1960s, anti-missile defences that he feared would spur another nuclear arms race. He became increasingly ostracised by the state, a dissident against oppression who would in 1975 be awarded the Nobel Peace Prize, and referred to as “the conscience of mankind”, says von Hippel.

Tsar Bomba, it seems, may have had fallout of a very different kind.

<http://www.bbc.com/future/story/20170816-the-monster-atomic-bomb-that-was-too-big-to-use>

[Return to top](#)

Scout Warrior (Minnetonka, MN)

The Danger of Russia's New ICBM

By Dave Majumdar

August 3, 2017

More details are emerging about Russia’s new RS-28 Sarmat intercontinental ballistic missile.

According to Russian media, the weapon is being developed to replace the massive but ageing 210-ton R-36M2 Veovoda (SS-18 Satan) missile which has a throw weight of roughly 8.8-tons.

However, most Western experts believe that the weapon is more likely a replacement for the smaller 106-ton UR-100N —also known as the SS-19 Stiletto. In fact, there are conflicting reports about the size of the RS-28, which has been given the NATO designation SS-X-30 Satan 2.

According to state-run RIA Novosti, the Sarmat weighs slightly less than 110-tons and has a throw weight of about 5-tons. It is being specifically designed to defeat any potential American missile defense system that might be developed to counter Russia’s strategic nuclear deterrent. It is also being designed to withstand a first strike—being able to absorb seven nuclear warheads compared to the two hits it takes to destroy an American Minuteman III silo.

“The launch silos of the new missiles will be physically protected as much as possible - to completely destroy one launcher, it will take at least seven nuclear strikes of high accuracy,” the RIA report states.

The missile—if the RIA report is correct—will carry the same number of warheads—or more—as the much larger SS-18 and far more than the six warheads on the SS-19. However, that being said, there have been conflicting reports as to how large the RS-28 is. While some reports suggest that the weapon will be roughly 110-tons, others have suggested that the new missile will be larger than even the SS-18, which is the largest ICBM ever built.

“The range of Sarmat will exceed 11 thousand kilometers, the missile will be able to carry 10 to 15 warheads of up to 750 kilotons each,” the RIA report reads.

“The warheads will fly to their targets at hypersonic speeds under individual guidance programs. It will not be easy to intercept the multiple independent reentry vehicles: depending on the situation, they will be able to maneuver like winged or hypersonic missiles.”

American experts believe that the RS-28 is more likely to be an SS-19 replacement than an SS-18 replacement. The weapon, in their view, is most likely closer to the 110-ton range.

“The concept of the Sarmat as an SS-18 (Voevoda) follow-on has always been mostly PR. The Russians have long been fairly proud about the Voevoda as the heaviest ICBM in the world, which NATO code-named Satan,” Olga Oliker, director of the Russia and Eurasia program at the Center for Strategic and International Studies (CSIS) told The National Interest.

“The Voevoda is going away, but if you’re proud of something, you don’t just give it up, you build something even better. Hence the sales job on the Sarmat as the Voevoda’s replacement. That was reflected in all the stories promising a ten-ton throw-weight (the Sarmat’s is 8.8 tons). In fact, however, the Sarmat looks more like the SS-19, which is also going away. Both the Sarmat and SS-19 weigh about 100 tons (as opposed to the Voevoda’s 200 tons) and specialists have speculated that the throw-weight on the Sarmat would also be similar to the SS-19s 4.4 tons. This story certainly takes us closer to that, though we’ll have to wait and see what actually gets deployed.”

Michael Kofman, a research scientist specializing in Russian military affairs at the Center for Naval Analyses, agreed with Oliker’s assessment.

“Sarmat is really more the successor of the SS-19 Stilleto rather than the SS-18,” Kofman told The National Interest.

“There is conflicting information on the size, tonnage and throw-weight of this missile, but generally it seems to be much smaller than the SS-18 Mod 5 and slightly larger than the SS-19. If you check the payload for the SS-19 you will see that it was 4.35-tons.”

While the RS-28’s reported throw weight of 5-tons is reasonable, there is a disconnect between that figure and the number of warheads and decoys carried onboard the new missile.

“Assuming that this missile is larger than the SS-19 by some amount, and with technology better than what was available in 1970s, it seems quite reasonable that the throw weight is in the 5-ton range, but it does not explain other claims about warheads and decoys,” Kofman said.

“If RIA is right—and it probably is not right—how do you fit a payload of 10 warheads and tons of decoys into 5-tons?”

The RIA report does seem to indicate that the RS-28 is closer in size and capability to the SS-19.

“The only thing this helps substantiate is that Russia’s next heavy missile is much closer to the size of the SS-19 than the SS-18, but there are large questions outstanding about conflicting claims about throw-weight, warheads and penetration aids,” Kofman said.

“They are mutually inconsistent.”

Ultimately, the RS-28 will likely have fewer warheads and more decoys and other systems to increase its survivability.

“The further along we get it becomes clearer that this is a replacement for the SS-19 with more warheads and penetration aids,” Kofman said.

"I think current trends in Russian thinking will place a premium on penetration aids, and as such the missile may compromise on number of warheads. RIA's payload figures are not at all unreasonable, but equally unreliable."

The consensus in Washington is that the new weapon is indeed a SS-19 replacement. Though The National Interest was not able to contact him in time for this story, Russian nuclear weapons expert Pavel Podvig has long suggested that the RS-28 is a SS-19 replacement. It seems his hypothesis was likely correct.

<http://scout.com/military/warrior/Article/The-Danger-of-Russias-New-ICBM-105756267>

[Return to top](#)

TASS (Moscow, Russia)

German Foreign Minister Warns New START and INF Treaties Termination Will Affect Europe

Author Not Attributed

August 16, 2017

According to Sigmar Gabriel, European countries should become active participants in the disarmament discussion.

The termination of the Treaties on missile armament cuts and liquidation will affect Europe's security, German Foreign Minister Sigmar Gabriel said on Wednesday.

Germany's top diplomat made this statement after a meeting with experts of the Commission on Challenges to Deep Nuclear Weapons Cuts from Russia, the United States and Germany.

"The possible termination of the Intermediate-Range Nuclear Forces (INF) Treaty and the non-prolongation of the New START Treaty [the Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms] are what will eventually threaten Europe, in the first place," Gabriel said.

The German foreign minister also said he shared the experts' opinion that "the worst Cold War mistakes are repeated" and the world is at the stage of "Cold War 2.0."

According to him, European countries should become active participants in the disarmament discussion.

"Germany should speak more actively with the United States, with Russia about this within the NATO framework," the foreign minister said.

At the same time, Social Democrat Gabriel again lashed at the Conservatives in the German government who advocated a sharp increase in defense spending.

"In this regard, it is more important to double the efficiency of expenditures rather than their volume," he said.

"I expect that the political leadership in [the Christian Democratic/Christian Social] Union won't yield to the militarist logic [of US President Donald Trump] and this is what exactly is taking place now," the German foreign minister said, noting that such policy could become a problem for Berlin.

<http://tass.com/world/960653>

[Return to top](#)

Russian Peacekeeper (Moscow, Russia)

US Wants to Involve Russia in Arms Race

Author Not Attributed

August 16, 2017

The US government seeks to involve Russia into a new arms race, Konstantin Sivkov, Russian military analyst said. According to him, this is precisely what explains their desire to denounce the INF Treaty. At the same time, American diplomats are acting quite gracefully: they intend to withdraw from the agreement but simultaneously accuse Moscow of violating previously reached agreements.

"The possible denial of the INF Treaty is Washington's clumsy attempt to draw Kremlin back into a costly arms race. Strategists in the White House do not consider the option of a direct military conflict with Moscow, but Russia's economic exhaustion seems to them a tempting goal", the analyst stressed.

According to him, the hysteria initiated by conservative politicians in the United States over the fact that Russia allegedly violates the provisions of the INF Treaty is explained very simply. The White House, convinced of the weak effectiveness of sanctions imposed on Moscow, intends to increase pressure on the Kremlin. However, Washington does not dare to act by military methods, and, therefore, there is only one thing – to try to destabilize the economic situation in Russia.

At the same time, the expert emphasizes that Moscow will not let itself be dragged into this adventure and is able to offer Washington an asymmetric answer.

<http://peacekeeper.ru/en/?module=news&action=view&id=31063>

[Return to top](#)

MIDDLE EAST

TASS (Moscow, Russia)

Syrian Army Finds UK and US Chemical Agents at Depots Captured From Terrorists

Author Not Attributed

August 16, 2017

The chemical agents were found at terrorists' depots both in Aleppo and in liberated districts in the eastern suburb of Damascus, according to the Syrian deputy foreign minister

Chemical agents found at arms depots abandoned by militants suggest they were delivered to terrorists in Syria from the United States and the United Kingdom, Syrian Deputy Foreign Minister Faisal Mekdad said at a press conference in Damascus on Wednesday.

"All the special means that have been found include hand grenades and rocket projectiles for grenade launchers, which are supplied with CS and CN irritant agents [they are shown in transparencies]. The discovered chemical munitions shown in the transparency were produced by

Federal Laboratories on the US territory. And the chemical agents were produced by Cherming Defence UK and NonLethal Technologies (the USA)," Mekdad said.

According to the Syrian deputy foreign minister, the chemical agents were found at terrorists' depots both in Aleppo and in liberated districts in the eastern suburb of Damascus.

As Mekdad said, in compliance with article 5 of the convention on the prohibition of chemical weapons, the use of irritant agents is allowed only for fighting riots. They are prohibited for use as warfare means.

"Therefore, it can be said with confidence that the United States and the United Kingdom, and also their allies in the region, are rendering all possible support to terrorist organizations active in Syria, thus violating the convention on the prohibition of chemical weapons. They are supplying terrorists not only with conventional arms but also with banned chemical agents," Mekdad said.

<http://tass.com/defense/960607>

[Return to top](#)

The Times of Israel (Jerusalem, Israel)

Air Force Holds Missile Defense Drill Over Central Israel

By Judah Ari Gross

August 15, 2017

Military warns residents that explosions may be heard during routine exercise of aerial defense systems

The Israeli Air Force conducted a test of its aerial defense systems on Tuesday evening, firing multiple interceptor missiles into the air over central Israel, the army said.

The military would not elaborate on the types of air defense systems being fired in the exercise, but warned residents there would be several launches and they could expect to hear explosions.

The army stressed that the exercise was not connected to any specific threats, but was instead planned in advance as part of the military's yearly training calendar.

With hundreds of thousands of rockets and missiles pointed at Israel from Gaza, Lebanon, Syria and Iran, Israel maintains one of the world's most advanced multi-tiered air defense system, designed to intercept incoming short-, medium- and long-range missiles.

The lowest layer of Israel's multi-tiered missile defense system is the Iron Dome, capable of shooting down short-range rockets, small unmanned aerial vehicles and some mortar shells like those that have been fired at Israel from the Gaza Strip or from southern Lebanon.

The middle tier is the David's Sling, also known as the Magic Wand, which was declared operational in April. It is designed to shoot down incoming missiles with ranges of 40-300 kilometers (25-190 miles), meaning it could be used against Hamas's longer-range rockets, but would more likely be deployed against missiles fired by Hezbollah or Syria, such as the Iranian Fateh 110 or its Syrian equivalent, the M600.

At the top are the Arrow 2 and Arrow 3 systems, which are intended to engage long-range ballistic missiles. The Arrow was put in use for the first time on March 17, when it downed an incoming Syrian anti-aircraft missile.

Israel also operates the long-range Patriot missile system, with which the air force has shot down multiple unmanned aerial vehicles, most recently on April 27, as well as a Syrian Air Force Sukhoi Su-24 in 2014.

But even with the full complement of missile defense systems, defense officials warn that it is not a hermetic seal and some rockets will inevitably slip past the array.

<http://www.timesofisrael.com/air-force-holds-missile-defense-drill-over-central-israel/>

[Return to top](#)

The Jerusalem Post (Jerusalem, Israel)

Report: Iran and Russia Violated UN Weapons Sanctions

By Benjamin Weinthal

August 15, 2017

German media and state intelligence agencies revealed how Russia and Iran bypassed the Joint Comprehensive Plan of Action nuclear accord.

The Islamic Republic of Iran and Russia used a smuggling route to transport offensive weapons, allegedly in violation of UN Resolution 2231, Germany's Welt am Sonntag newspaper reported on Sunday.

The broadsheet paper cited "Western intelligence services" saying Iran delivered "offensive weapons systems" to Russia via a military air base in Syria.

"In June, two airplanes from Iran flew directly to the Khmeimim Air Base [southeast of Latakia] – the most important Russian military base in Syria – in order to bring the military equipment for transport to Russia," the paper said.

According to Welt am Sonntag, the heavy military goods were loaded onto trucks and taken to the Syrian port of Tartus. The Russian ship Sparta III then delivered the weapons a few days later to Russia's main Black Sea port of Novorossiysk.

The paper said the weapons were sent to Russia for "service maintenance."

It is unclear what types of weapons the Iranian regime sent to Russia. The Iran-Russia transport route was termed "a new smuggling route."

The exclusive report showed satellite images of an Iranian Boeing airplane at Khmeimim. The US airplane giant Boeing seeks to sell \$3 billion in airplanes to an Iranian airline. The revelations of Iran's allegedly illicit use of a Boeing airplane could jeopardize the deal that faces fierce opposition in the US Congress. Last year, Reps.

Jeb Hensarling of Texas and Peter Roskam of Illinois wrote in a letter to Boeing: "American companies should not be complicit in weaponizing the Iranian regime." The European airplane company Airbus is holding negotiations to sell 48 helicopters to Tehran.

Russia was part of the P5+1 group of world powers that signed the nuclear deal with Iran in July 2015.

The accord imposed restrictions on Iran's nuclear program in exchange for significant sanctions relief.

United Nations Security Council Resolution 2231 was passed that month as part of the nuclear deal's architecture to restrict Iran's missile and arms-related activities.

The Jerusalem Post reported last month on Iran's illicit nuclear and missile weapons procurement activities in Germany during 2016.

According to the state of Hamburg's intelligence agency: "there is no evidence of a complete aboutface in Iran's atomic policies in 2016" [after it signed the nuclear deal]. Iran sought missile carrier technology necessary for its rocket program."

An intelligence report from the southwestern state of Baden-Württemberg stated, "Regardless of the number of national and international sanctions and embargoes, countries like Iran, Pakistan and North Korea are making efforts to optimize corresponding technology."

According to the Baden-Württemberg report, Iran sought "products and scientific knowhow for the field of developing weapons of mass destruction as well as missile technology." The 181-page document cites Iran's illicit cyberware, espionage, terrorism and weapons of mass destruction procurement activities 49 times.

A telling example of Iran's sanctions evasion strategy involved the assistance of a front company. The intelligence agency wrote that a Chinese import-export company contacted a firm in the southwestern German state that sells "complex metal producing machines."

The Baden-Württemberg report said the technology would aid Iran's development of ballistic missiles.

Germany's Federal Office for Economic Affairs and Export Control issued an end-use receipt for the Chinese purchase. Intelligence officials notified the manufacturer that the merchandise was slated to be illegally diverted to Iran. "This case shows that so-called indirect- deliveries across third countries is still Iran's procurement strategy," wrote the intelligence officials. Sophisticated engineering and technological companies are situated in Baden-Württemberg and it has long been a target for illicit Iranian procurement efforts.

A third state intelligence report from June said that in the 2016, "German companies located in Rhineland-Palatinate were contacted for illegal procurement attempts by [Pakistan, North Korea and Iran]. The procurement attempts involved goods that were subject to authorization and approval on account of legal export restrictions and UN embargoes. These goods, for example, could be used for a state's nuclear and missile programs."

The Trump administration will decide in October whether the Iran nuclear deal should again be certified for continuation. US Ambassador to the United Nations Nikki Haley is slated to travel to Vienna this month to meet with officials from the International Atomic Energy Agency – the UN nuclear watchdog organization – to discuss Iran's compliance with the 2015 nuclear pact.

<http://www.jpost.com/Arab-Israeli-Conflict/Report-Iran-and-Russia-violate-UN-weapons-sanctions-502475>

[Return to top](#)

Tehran Times (Tehran, Iran)

Iran Will Go to Pre-Nuclear Deal Stage 'In Hours' if Sanctions Return: Rouhani

Author Not Attributed

August 15, 2017

President Hassan Rouhani warned on Tuesday that Iran will quit nuclear agreement “in hours” and return to the previous stage if sanctions are re-imposed on the country.

“They [Trump’s administration] must know that the defeated experience of sanctions dragged their former governments to the negotiating table and if they are willing to return to those experiences, Iran will definitely return to a situation which is more advanced than the time of negotiations in a short period of time, in hours,” Rouhani explained.

According to the July 2015 nuclear accord, officially called the Joint Comprehensive Plan of Action (JCPOA), Iran put limits on its nuclear activities in exchange for termination of economic and financial sanctions.

“BARJAM [the Persian acronym for the nuclear deal] shows superiority of peace and diplomacy over war and unilateralism and the Islamic Republic of Iran prefers to remain in the deal, however, it [BARJAM] is not and will not be the only option for the country,” Rouhani said in a speech to the parliament while defending his nominees for ministerial posts in his new administration.

He added, “Iran knows BARJAM neither as a threat against the countries nor submission to the powers, but a win-win and balanced agreement which has opened the path of cooperation and trust-building with the world.”

Unlike the U.S., especially under Donald Trump, which breaches its promises and violate international deals such as the Paris climate agreement, Iran has always been and will remain committed to international agreements, Rouhani asserted.

Elsewhere, Rouhani said that his administration will prioritize expansion of cooperation with regional countries in terms of foreign policy.

Iran, the European Union, Germany and the five permanent members of the UN Security Council - the United States, Britain, France, China and Russia - finalized the text of the nuclear agreement on July 14, 2015. The deal went into effect on January 16, 2016.

Last month, the two houses of the U.S. Congress ratified non-nuclear sanctions against Iran. The sanctions were mainly targeted at Iran’s missile capability.

The U.S. Treasury Department also imposed sanctions on six Iran-based satellite companies on July 28 after Iran launched Simorgh (Phoenix) satellite carrier rocket into space a day earlier.

<http://www.tehrantimes.com/news/415973/Iran-will-go-to-pre-nuclear-deal-stage-in-hours-if-sanctions>

[Return to top](#)

INDIA/PAKISTAN

The Economic Times (New Delhi, India)

Pakistan Builds Nuclear Warhead Underground Storage Facility in Balochistan: Report

Author Not Attributed

August 10, 2017

Pakistan has built a "hardened, secure, underground" complex in a remote mountainous region in the restive Balochistan province that could serve as a storage site for nuclear warheads, an American thinktank said today.

The Institute for Science and International Security, a nonprofit and non-governmental institution, said its observation is based on satellite imagery and investigation.

It said in a report that the underground complex in the southwestern province "could serve as a ballistic missile and nuclear warhead storage site".

The purpose of the complex is not yet available publicly.

But, the report authored by David Albright, Sarah Burkhard, Allison Lach and Frank Pabian, said it could serve as a storage site for strategic reserves and hence a means of protecting a counterforce nuclear strike capability.

Given that Pakistan's preferred delivery vehicle for nuclear weapons is missiles with warheads and given the physical characteristics of the site, this site is an ideal, probable storage site for parts of Pakistan's nuclear arsenal, the report noted.

"Although the site is located in the province of Balochistan, which has endured many local insurgencies, Pakistan is likely more focused on having a secure area in a remote mountainous area in the middle of the country, as far as possible from its international borders, including India," it said.

According to the report, the complex has three distinct entrances and a separate support area and the entrances are large and can accommodate even the largest possible vehicles.

As of 2012, the security was relatively modest, with some possible signature suppression (eg no obvious perimeter security). "Nonetheless, the site did include at least one possible anti-aircraft position with a guard post at that time," the report said.

"In contrast, 2014 DigitalGlobe images show considerably more physical security in the form of added fencing and checkpoints and several new possible anti-aircraft positions. This analysis resulted from a 2014 request from a journalist who provided the coordinates of the ballistic missile base and the mountain site. The person requested that they remain anonymous," it said.

<http://economictimes.indiatimes.com/news/defence/pakistan-builds-nuclear-warhead-underground-storage-facility-in-balochistan-report/articleshow/60009655.cms>

[Return to top](#)

Deccan Herald (Bangalore, India)

Growing Pak-China Nuke Ties: House Panel Says India Must Enhance Deterrence

By Anirban Bahumik

August 12, 2017

India must augment its nuclear deterrence to meet any challenge from Pakistan, a parliamentary panel has recommended after taking note of the growing Beijing-Islamabad cooperation in missile and atomic weapon programmes.

Concerned over Pakistan's "expanding" arsenal of atomic weapons and its "deliberately ambiguous doctrine" of using such weapons, the Parliamentary Standing Committee on External Affairs "strongly" recommended that India must "aggregate its nuclear capability and enhance its deterrence capabilities".

The committee, which is headed by Congress MP Shashi Tharoor, studied India-Pakistan relations and submitted its report to the Lok Sabha on Friday.

It noted that India's "no-first-use" nuclear doctrine was "well-articulated and specific". But, the panel observed, Pakistan has "deliberately pursued an opaque and ambiguous" nuclear doctrine, refusing to abjure "first-use" of nuclear weapons.

The Ministry of External Affairs told the panel that China's support to nuclear programme of Pakistan dated back to 1960s and had now reportedly extended to areas like nuclear fuel mining and exploration, supply of nuclear warhead designs, enriched fuel, transfer of dual use technology and materials for the development of nuclear weapons, delivery systems for nuclear weapons and training of the scientific personnel. "China has reportedly helped Pakistan build and operate plutonium based reactors in Khushab (in Punjab province of Pakistan). The Khushab reactors will enable Pakistan to produce weapon grade plutonium," the MEA informed the committee.

The parliamentary panel also learnt from the MEA that China would reportedly supply enriched fuel for Pakistan's Chasma I, II, III and IV and the proposed Karachi II and III reactors for their lifetime. Beijing had also purportedly committed to bear "a large portion of all costs" required for not only the operational reactors of Pakistan, but also the ones, which are still under construction, the MEA informed the panel.

Pakistan, like India, is neither a signatory of to the Nuclear Non-Proliferation Treaty, nor a member of Nuclear Suppliers Group, but China is.

The NSG guidelines prohibit its members to engage in civil nuclear commerce with Pakistan or any other non-NPT country. Only India, despite being a non-NPT country, got a waiver from the NSG in 2008. Beijing, however, argues that its nuclear cooperation with Islamabad is based on an agreement the two nations signed before China joined the NSG in 2004.

As the text of the 1986 civil nuclear cooperation agreement between China and Pakistan was not made public, it is difficult for the international community from validating Chinese and Pakistani representations.

New Delhi has been concerned over Islamabad's pursuit for developing low-yield and short-range tactical nuclear weapons designed for use against opposing troops on the battlefield. It has also been alarmed by Islamabad's move to deploy such weapons as a deterrent against "surgical strikes" or incursion by India into Pakistan or territory under illegal occupation of Pakistan. As the tactical nuclear weapons are more portable and mobile, both India and United States have been worried over the possibility of such weaponry falling into the hands of terrorists in Pakistan.

The Parliamentary Standing Committee on External Affairs stated that it was “in agreement with the government's assessment of the Pakistani nuclear threat and the possibility of inadvertent tactical nuclear weapons use, which would have serious implications not only on the region, but across the globe”.

The MEA also told the parliamentary panel that Pakistan's “precarious security situation” raised doubts about the “security of the nuclear power plants” in the neighbouring country.

A Q Khan, the founder of nuclear program of Pakistan, was in 2003 found to have traded know-how and technology with Iran, Libya and North Korea. Islamabad, however, swept under the carpet the proliferation network run by Khan. “Pakistan claims to have taken some steps to safeguard its assets and technology. However, there are reports that the A Q Khan network has never been fully dismantled and may still be active,” the report of the parliamentary panel quoted MEA officials saying.

“For the dialogue process (between India and Pakistan) to restart, Pakistan must abide by its 2004 commitment of not allowing its territory for use of terrorism against India,” noted the parliamentary panel. It also noted that Pakistan must realize that India's “goodwill and generosity” could not be taken for granted.

“The Government must evolve the modalities and framework for engagement on the basis of the Simla Agreement of 1972 and the Lahore Declaration of 1999 and proceed in an incremental manner,” observed the parliamentary panel. “Peace on the Line of Control, elimination of cross-border terrorism and genuine investigation and punishing the perpetrators of Mumbai and Pathankot attacks could be the probable centre point of the agenda (of India-Pakistan engagement).”

<http://www.deccanherald.com/content/627609/growing-pak-china-nuke-ties.html>

[Return to top](#)

Dawn (Karachi, Pakistan)

Pak-India Nuclear War — Avoided

By Pervez Hoodbhoy

August 12, 2017

Pakistan and India celebrate their 70th anniversaries next week. Shall they be around for their 100th one too? It depends on how long their luck holds out, and if they can stop their mad rush to increase the chances of disaster.

What's new? Two weeks ago, a terrifying report published in the Indian Express should have scared sensible people into asking hard questions. But no one paid much attention to it — jaded publics on both sides would rather tune in to the hottest political intrigue or celebrity gossip than waste time on something that didn't actually happen.

Here's what was reported: on June 24, 1999, at the height of the Kargil war, an Indian Air Force Jaguar flying close to the Line of Control locked its targeting laser onto a possible base set up by Pakistani infiltrators. The second Jaguar flying close behind was supposed to bomb this chosen target. In fact, the Indian pilot had unknowingly crossed a few miles into Pakistani territory and in his cross hairs was a forward base of the Pakistan Army at Gulteri.

The Indian pilot's mistake could have activated Pakistan's war plans and triggered its nuclear assets.

An Indian air commodore, who was airborne at the same time, recognised that the first pilot had erred. It being a violation of combat rules to fly over the Pakistani side, he denied permission to fire. The bomb was subsequently retargeted to a point on the Indian side of the LoC.

The reported incident does not appear fabricated. First, it was revealed 18 years after the event and so there is no immediate gain. Second, the source was knowledgeable — he is retired Air Marshal Vinod Patney, who was then the head of India's Western Command and directly responsible for air operations in the Kargil war. Third, it does not favour either country, and, in fact, points to a mistake on the Indian side.

Imagine for a moment that permission had been granted. The course of history would have totally changed because, unknown to the Indian pilots, at that very moment prime minister Nawaz Sharif and COAS Gen Pervez Musharraf were addressing troops amassed at Gulteri base. The laser-guided bomb, if released, would have eliminated Pakistan's top leadership.

And then what? Would GHQ have waited for an explanation or accepted an apology for this horrible mistake? Or would Pakistan's war plans have been triggered and nukes operationalised? This would take only a matter of minutes or hours.

Seeing Pakistani nuclear weapons being prepared, what would the Indians have done? Would the IAF have targeted Pakistan's airbases and missile sites? Action and reaction. Fear fuelling misjudgement until nuclear blasts and fireballs destroy cities in both countries. Millions killed and more injured.

South Asia got hugely lucky that day. But as India rushes to put nuclear weapons on submarines — and Pakistan tries to follow suit — a whole new set of dangers has arisen. The chance of a missile being wrongly launched is greater for submarines than for aircraft or other land-based systems.

Here's why. Submarines try to hide and adversaries try to find them. All submarine forces face this problem of antisubmarine warfare but, in the India-Pakistan case, an undersea competition is highly destabilising because Pakistan's fleet is fairly vulnerable. Its three Agosta-90B type diesel electric submarines (eight Chinese ones are on order) are fairly noisy and trackable. Of the three, only one is actually likely to be on patrol at a given moment because the others would be refuelling or under repair. The submarine on patrol may in time be armed with nuclear-tipped cruise missiles.

While Indian capability to locate and destroy a diesel-powered submarine is unknown, this will improve with time. India already claims to have tracked the ocean trajectory of a Chinese nuclear submarine that recently docked in Karachi. Pakistan's nervousness will drive it to build more nuclear-armed submarines, maybe even nuclear-propelled ones. Safety margins will shrink further.

To give an example: up to this point, Pakistan and India both claim that for safety reasons their nuclear warheads are kept in disassembled form with key parts kept at different physical locations. This builds in a time delay, making unauthorised use or an accident less likely. In a crisis the National Command Authority (or its Indian equivalent) would give the order to assemble a weapon. But with a submarine, all missiles must be fully ready for use before the ship leaves port.

There's an added danger — communicating with a submarine prowling the ocean's depth is hard since radio waves cannot travel long distances through saltwater. Typically, a deeply submerged vessel can only receive simple coded messages, not audio or video. Still worse: there can be only one-way communication — from vessel to base is impossible unless it surfaces and risks detection. Since a technical fault or enemy action can disrupt communications, the submarine commander has to be given the codes and authority to arm and launch nuclear missiles without seeking permission.

So here is a hypothetical question: suppose a Pakistani submarine is, or believes it is, under attack from some surface ship, another submarine, or aircraft. Given the impossibility of communicating

with ground-based authorities, would the commander launch — or not launch — the submarine's nuclear missiles? Of course, the attacker cannot know whether a normal sub is in its cross hairs or, instead, a nuclear-armed one.

This is not completely fictitious. During the Cuban Missile Crisis, a Soviet submarine found itself surrounded by American ships that began using underwater explosive depth charges to force it to surface. The Soviet submarine could not call Moscow for instructions without rising to the surface. The American ships did not know the Soviet submarine was armed with nuclear torpedoes.

Finding itself under attack, and believing that war had broken out, the submarine captain wanted to launch a nuclear torpedo to drive away the American ships by targeting a nearby American aircraft carrier. Other members of his crew did not agree. Eventually, the submarine decided to surface. Had the submarine captain had his way, a nuclear war could have started.

Will South Asia always stay lucky, as in Kargil? Don't count on it.

<https://www.dawn.com/news/1351091/pak-india-nuclear-war-avoided>

[Return to top](#)

The Express Tribune (Karachi, Pakistan)

India's Use Of Chemical Weapons Against Kashmiris

By Shaista Tabassum

August 5, 2017

In early July, Pakistan's ministry of foreign affairs spokesman Nafees Zakaria claimed that Indian security forces were using deadly chemical weapons to kill Kashmiris and destroy their properties in Indian-Occupied Kashmir (IOK). The accusation was based on the charred bodies of Kashmiri youth found in the debris of five houses destroyed by Indian forces at Bahmnoo and Kakapora in Pulwama. The bodies were extensively burnt and beyond visual recognition. Such a severe level of burning could only be possible when some chemicals were used by the occupation forces to destroy the houses. More similar attacks had been committed by the Indian Army at different places.

It is noteworthy that this is the second time Pakistan has brought up this issue. Earlier in June 1999, the International Herald Tribune quoted Pakistan's government broaching the issue that India was using chemical shells against Kashmiris. This allegation was vigorously denied by India, which called it "totally absurd". Interesting to note that in 1989, in reply to a note verbale of the UN Secretary General on the subject of chemical weapons, India declared that it did not possess chemical weapons.

Pakistan and India are signatories to the Chemical Weapon Convention (CWC), signed by 192 states and coming into force in 1997. The convention comprehensively prohibits the use, development, production, stockpiling and transfer of chemical weapons. Any chemical used for warfare is considered a chemical weapon by the convention. The CWC prohibits the use of chemical weapons not only in international armed conflicts but also non-international armed conflicts in all circumstances. The use of chemical weapons in a widespread and systematic attack against a civilian population is a crime against humanity. If done with intent to destroy, in whole or in part, a national, ethnic, racial or religious group, it is genocide which itself is an international crime.

Islamabad has a policy decision to subscribe to treaties banning Chemical and Biological Weapons (CBWs). It has been steadfast in its commitments not to develop, stockpile or use these weapons, and Pakistan has never been found in violation of its obligations and has been successful in

avoiding censure and opprobrium of the monitoring agencies. Pakistan's CWC Implementation Ordinance (2000) states, "Prohibition on development, etc, of chemical weapons (1) No person shall (a) develop, produce, otherwise acquire, stockpile or retain a chemical weapon, or transfer, directly or indirectly, a chemical weapon to anyone; (b) use a chemical weapon; (c) engage in any military preparations to use a chemical weapon; (d) assist, encourage or induce, in any way, any other person to engage in any activity prohibited under the convention; or (e) use a riot control agent as a method of warfare." At the 1986 session of the conference on disarmament, Pakistan declared that it "neither possesses chemical weapons nor desires to acquire them." In 1987, during a debate in the first committee of the UN General Assembly, Islamabad stated it was committed to a global ban on chemical weapons.

Despite comprehensive international treaties banning CBWs there has been documented use of these weapons in recent times. Similar to the reports on IOK, a noteworthy example is the use of chemicals by Israel against Palestinians. The 71-page report 'Rain of Fire: Israel's Unlawful Use of White Phosphorus in Gaza' by Human Rights Watch, states that Israel forces frequently air-burst white phosphorus in 155mm artillery shells in and near populated areas. Each air-burst shell spreads 116 burning white phosphorus wedges in a radius extending up to 125m from the blast point. White phosphorus ignites and burns on contact with oxygen, and continues burning at up to 816 degrees Celsius until nothing is left or the oxygen supply is cut. When white phosphorus comes into contact with skin it creates intense and persistent burns. When used properly in open areas, white phosphorus munitions are not illegal because militaries use it primarily to obscure their operations on the ground by creating thick smoke. It can also be used as an incendiary weapon. But using it over populated neighbourhoods, killing and wounding civilians and damaging civilian structures like a school, market, warehouse and hospital is illegal.

The CBWs are easy to manufacture and deliver, and cause maximum casualties to the opposite side. No high technology is required. Thus those states like India and Israel who has acute security concerns go for these easy to manufacture weapons. For example, white phosphorus has limited use and is legal but has devastating effects.

Over the years, numerous leading human rights groups like Amnesty International have been highly critical of India's policy in Kashmir. But despite many requests, Delhi has not allowed a number of international human rights organisations, including the Human Rights Mission, to visit IOK, although a top UN official has said that they continue receiving reports of Indian forces using excessive force against the civilian population under its administration. Denial of access to the area actually means that serious violations are going on. However, the deteriorating situation in IOK has now made it crucial to establish an independent, impartial and international mission to assess the situation.

<https://tribune.com.pk/story/1474143/indias-use-chemical-weapons-kashmiris/>

[Return to top](#)

COMMENTARY

The Nation (Washington, DC)

Nuclear Deterrence Will Fail

By Ward Wilson

August 11, 2017

This week President Donald Trump got angry. With his arms folded across his chest, his eyes darting around the room, you can feel the emotion behind his words: “North Korea best not make any more threats to the United States. They will be met with fire and fury like the world has never seen.” The president’s remarks were clear evidence of a danger that must be addressed.

Not the danger of this particular crisis—there is little we can do about that. For now, US law puts no impediments—no checks or balances—on the president’s ability to launch a nuclear war. Instead, what the president’s words highlighted was the inevitable failure, over the long run, of nuclear deterrence.

For decades, US security policy has relied on a theory, an idea about how human beings are likely to behave. And we, as a nation, have agreed to run risks based on this idea that the threat of mass destruction can prevent attacks. Nuclear deterrence seems sensible enough. Who, after all, would be crazy enough to start a nuclear war? And, for the most part, our presidents seemed to confirm that nuclear weapons were secure in American hands.

As former UN secretary general Ban Ki-moon is fond of saying, there are no right hands for nuclear weapons. The problem is the need for perfection. A single slip-up could lead to catastrophe. The instruments of deterrence are inherently fallible. I’m not talking about the computers that control our arsenal and its early-warning systems, though Eric Schlosser’s *Command and Control* does an admirable job of explaining the risks inherent in keeping thousands of nuclear weapons on hair-trigger alert. But the machines are not the main problem—we are.

Nuclear deterrence is not a computer that purrs quietly in a corner on its own. Human beings are intimately involved at every step. As the president is so vividly demonstrating, people lose their tempers, overreact, and get overwhelmed by emotion. People can lose their sanity—raving and acting at random.

Nuclear advocates have said for decades that nuclear weapons can’t be gotten rid of, because they “can’t be disinvented.” This is undeniably true, but also entirely specious. No technology is ever disinvented. Who disinvented the PalmPilot? Who disinvented black and white TV? Who disinvented the Hiller VZ-1—a flying platform designed to lift a single soldier 10 to 20 feet up into the air? These technologies weren’t “disinvented,” they were abandoned, either because better technology came along (as with PalmPilots and black and white TVs), or because people simply realized the original technologies weren’t all that useful (like the Hiller VZ-1—why would you put a soldier in a position where the person’s both especially noticeable and entirely vulnerable?) Nuclear weapons fall into the second category. They’re just not very good for anything, except slaughtering civilians en masse.

Of course we can get rid of nuclear weapons—if they’re stupid technology. Imagine you bought a new kind of stove that (you heard later) blew up on a regular basis and, it turned out, couldn’t even boil water. Why would anyone keep technology that is both dangerous and virtually useless?

Eliminating nuclear weapons used to be considered pie-in-the-sky utopianism. But since 2008, when four cold war hawks of considerable standing—Secretary of State George Shultz, Secretary of

Defense William Perry, Secretary of State Henry Kissinger, and Senator Sam Nunn—came out in favor of eliminating nuclear weapons, the debate has shifted.

Nuclear-weapons advocates imagine all sorts of exaggerated powers for nuclear weapons: They protect us, cement our alliances, even uphold the world order that sustains our prosperity. In their obsessed minds, nuclear weapons are essential. But their beliefs are based on misperception and wishful thinking, not reality.

People point to the fact that nuclear weapons haven't been used in 70 years as proof that they are awesome, portentous weapons, too powerful to use. And the fact of their disuse is suggestive; it suggests they are lousy weapons. It's possible no one has used nuclear weapons for 70 years not because there is a kind of holy dread and wonder that surrounds them but because no one has been able to find a situation in which the weapons would actually be useful.

If you want to judge the question of whether nuclear weapons are essential or not, a far more telling piece of evidence comes from when George H.W. Bush retired almost all of the tactical nuclear weapons in the US arsenal. What was telling was not what was said, but rather what wasn't said. No one demanded their nuclear weapons back. No military officers went to Congress, sat at the witness table, and demanded the return of their tactical nuclear weapons. No one pounded the table, shouting, "Those weapons are essential for the safety and security of this great nation!" Their silence speaks volumes about how military professionals judge the military utility of nuclear weapons.

We need to dispel the nuclear believers' dark fever dream of awe and power, and insist on hard, cold reality: Nuclear weapons are risky, blundering weapons whose only real use—deterrence—will lead to catastrophe.

Trump's threat signals the end of the delusion that nuclear deterrence can be safe. If even stable, mature democracies can elect leaders who can't be trusted with nuclear weapons, then there is no way to justify keeping them.

<https://www.thenation.com/article/nuclear-deterrence-will-fail/>

[Return to top](#)

The Diplomat (Tokyo, Japan)

Denuclearization Is Dead, Now Let's Bury It

By Michael Haas

August 15, 2017

The US does have a credible military option for dealing with North Korea. It's called nuclear deterrence.

Make no mistake: after more than two decades of tedious maneuvering that have led many of our best experts to surrender to a false sense of eternal recurrence and essential stability, the nuclear crisis on the Korean peninsula is now hurtling towards an actual showdown. A year or two from now, the DPRK will be either an established (if not formally accepted) nuclear power with a small but largely undisputed intercontinental capability, an active conflict zone, or conceivably – and with no unnecessary drama intended – an irradiated wasteland, the likes of which the world has never seen before. In its quest for the ultimate guarantee of regime survival, the DPRK government has on balance proven itself more determined, more tenacious, and far more resourceful than the United

States and its allies. It now stands ready to claim its prize – the ability to deter the United States not just by proxy, but by holding hostage a substantial portion of the American populace itself.

Against this backdrop, the denuclearization of North Korea by any means short of a massive military campaign has become an exceedingly unlikely outcome. What does the United States have to offer the DPRK regime in return for giving up the only security assurance that it is likely to trust in a world that it sees, with some justification, as uncompromisingly hostile to the North Korean “experiment”? Why would Kim Jong-Un let the hated “imperialists” and “pirates” snatch victory from the jaws of their abject failure to impose their will through years upon years of fruitless coercive diplomacy? Would the proud nationalists in the White House accede to such a humiliating outcome, if the roles were reversed?

Jumping Through Closed Windows: Sure You Can, But It’s Going to Hurt

Irrespective of the simple and increasingly uncontroversial fact that North Korea has come out on top in its quest for an operationally viable, long-range nuclear capability, the Trump administration continues to adhere to the dangerous fiction of denuclearization and appears to be slowly inching towards military action. It does so at a time when the world at large could scarcely be more skeptical of Washington’s ability to set forth anything resembling coherent strategy, and when the recourse to force on the peninsula is more likely to go catastrophically wrong than at any other time in the past twenty-odd years. While a majority of the U.S. population continues to oppose immediate military action, nearly half of Republican respondents supported it in one recent poll. And even though the administration’s preferred mode of locomotion on its potential path to war has thus far been characteristically inelegant and uncoordinated, the rhetoric is getting more trenchant by the day.

While some on the right continue to harbor feverish fantasies of intervention and – perhaps – decisive war on the United States’ terms, the reality is quite different. Whatever windows may have existed for halfway-sensible military action on the peninsula have closed long ago; a fact that the likes of SECDEF James N. Mattis and National Security Adviser H. R. McMaster are well aware of. North Korea has been a nuclear power since at least 2009, has expanded its arsenal to up to 30 weapons, and is likely to make significant strides in the size of its stockpile in the next few years. To paraphrase Dick Cheney, if the risks of action against the DPRK far outweighed the risks of inaction during the tenure of the interventionist Clinton administration, how much larger do they loom today? If not only the Bush administration, but also the Israeli government, with its even richer tradition of military prevention, decided that the risks of decisive action against Iran far outweighed the risks of settling for an imperfect diplomatic process, will we seriously have to debate the merits of unleashing the “the fire and fury, and frankly power” of the U.S. against an actual, rather than a potential, nuclear state? Or, to put it in terms that the incumbent in the White House may appreciate: Another helping of actual American carnage, anyone? (Not you, John Bolton.)

Deterrence and You Should Get Back Together

The concept and practice of nuclear deterrence have long been under attack from several vectors. On the one hand, a well-meaning group of nations believes it is about time we left reality behind and is dead set to rid the world of nukes by committing its magical thinking to paper, in a stunt that does Frank B. Kellogg and Aristide Briand proud. (If you have some spare time this coming autumn, the rest of the world may need your help in picking up the pieces of a non-proliferation regime that kind of worked.)

On the other hand, since the mid-1990s, a group of somewhat sophisticated theorists and rather less sophisticated practitioners has been vigorously straining its credibility muscles to impugn the validity of deterrence as a means of countering “irrational” or “unreasonable” actors in the international system. As the most recent resurfacing of the debate about a “preventive” war against the DPRK would seem to illustrate, they have at least partially succeeded in doing so, with fairly long-lasting consequences. For this particular generation of (largely) American thinkers, national survival was not expected to be a sufficient motive for Shia clerics and Stalinist relics to refrain from attacking the United States and its allies with weapons of mass destruction. The United States famously acted on a version this theory in during 2002-2003, achieving successes so spectacular that they continue to tie down a significant portion of the U.S. armed forces to this day.

As a latter-day exponent of the strategic studies tradition by inclination and training, I would strongly propose a different view: namely, that the U.S. and DPRK governments can and – if the temperamentally- challenged on both sides manage to hold their fire just a little longer – will settle into a steady pattern of mutual deterrence that will closely resemble U.S. nuclear relationships with freshly nuclearized adversaries in the past. If anything, this particular relationship will be even more lopsidedly in the United States’ favor, and thus probably stable enough, even if your preference is for some “maximum” version of deterrence.

Before they can do so, however, the two governments must pass through a period of maximum danger, as was the case vis-à-vis the Soviet Union and, less famously, vis-à-vis China. To get through this phase without escalating to major war, it is incumbent upon the Trump administration to dispel with the potentially devastating option of pursuing denuclearization at any cost and instead settle for an initially uncomfortable alternative that will soon begin to feel distinctly familiar. There is no need to pretend that this latter option, which would finally put an end to the United States’ denuclearization fantasies, would amount to a happy outcome all around. The DPRK will remain an extremely burdensome actor to deal with. The potential for a deterrence failure can be managed, but never ruled out. And North Koreans will continue to endure the most stifling oppression for as long as the regime is able to hold on without opening itself up to the outside world. All of this was true of the Soviet Union and the PRC as well, and yet the serious analysts who retrospectively argue that forcible denuclearization should have been attempted appear to be few and far between.

For the U.S. to find itself in an escalating military confrontation with the DPRK – be it by design, or through an accumulation of the kind of miscalculations the Trump White House seems to have an unshakable predilection for – is now a more plausible scenario than at any time in the recent past. The most likely, and simultaneously the very worst, reasons to enter into such a confrontation flow from the dubious assumption that a regime that cares about very little besides its own survival must inevitably be denuclearized, because it is somehow beyond deterrence. Before it further muses about getting all fiery and furious on North Korea, the Trump administration would do well to ask itself this one simple question: What do you need the world’s most powerful nuclear deterrent for, if you are too jittery to let your submariners, missileers and pilots get on with the job of not waging a nuclear war any time soon?

<http://thediplomat.com/2017/08/denuclearization-is-dead-now-lets-bury-it/>

[Return to top](#)

The Heritage Foundation (Washington, DC)

Toward a More Muscular Missile Defense

By Edwin Feulner

August 15, 2017

There is no excuse for an inadequate anti-missile shield.

An air of fatalism surrounds much of the coverage of the escalating tensions between North Korea and the United States. If Pyongyang launched a missile at us or at one of our allies, the feeling goes, we could do nothing but brace ourselves for catastrophic damage and loss of life.

Which makes this a good time to ask: What's the state of our missile defense?

The good news, we have a system in place. We could shoot down an incoming missile. The bad news? The system isn't as capable as it could or should be. Fortunately, we can do something about that.

First, though, let's look at what North Korea has, and what kind of missile defense we have right now.

North Korea boasts a very active nuclear-weapons program. The country has faced decades of sanctions, and the communist leaders in Pyongyang have inflicted an enormous economic toll on its population. Yet North Korea has continued to develop long-range ballistic missiles for a long time.

Its goal, as missile-defense expert Michaela Dodge reminds us in a new paper, is apparently to threaten the U.S. homeland. It is already capable of threatening U.S. allies in South Korea and Japan, as well as American forces stationed in those countries. Such a situation is clearly untenable.

"It is increasingly obvious," Ms. Dodge writes, "that the Kim Jong-Un regime will not voluntarily give up its nuclear weapons program, which leaves the United States with an option to either be vulnerable to the whims of an unpredictable totalitarian dictatorship or find ways to defend its way of life as well as its allies."

That defense rests in large measure on a Ground-Based Midcourse Defense (GMD) system, which remains the only missile-defense system we have capable of shooting down long-range ballistic missiles headed for the U.S. homeland.

The U.S. GMD system is the only one we have capable of intercepting an intercontinental ballistic missile in the mid-course phase of its flight. The United States currently deploys four interceptors in California and 32 in Alaska. If all goes according to plan, those 36 will increase to 44 by the end of this year.

We also have systems capable of shooting down shorter-range missiles, as well as our sea-based Aegis system. Aegis can target short- and intermediate-range ballistic missiles. But with the threat of longer-range destruction from Pyongyang and elsewhere growing, it's time to focus on how we can increase the amount of protection we have.

Increasing the number of interceptors in our GMD system certainly leads the list. As Ms. Dodge notes, 44 should be a minimum number. But the current budgetary plan doesn't allow for us to maintain those 44 into the 2020s. We obviously need to allocate the necessary funds for that — and sooner rather than later.

But that's not enough. We also should invest in space-based interceptors (which are far better equipped to shoot down missiles in their initial "boost" phase, when they are moving more slowly) and in future missile-defense technologies. Some of these technologies were scaled back under

President Obama, but the current situation with North Korea strongly suggests it's time to change that.

Of course, North Korea isn't the only threat out there. Its saber-rattling rhetoric often draws the most attention, but Iran also has a large arsenal of ballistic missiles, and its nuclear program is quite active. And Russia and China have plenty of ballistic missiles on hand. The need for a more robust U.S. missile defense becomes more pressing all the time.

We've come a long way from the days of Mutually Assured Destruction. The Anti-Ballistic Missile Treaty tied our hands for three decades. We've beefed up our missile defenses quite a bit since then, but much more needs to be done.

There are plenty of places in the federal budget where we can cut. But security isn't one of them. It's time to make our missile-defense system more muscular.

<http://www.heritage.org/missile-defense/commentary/toward-more-muscular-missile-defense>

[Return to top](#)

Asia Times (Bangkok, Thailand)

US Continuing Sad Record on International Agreements, Treaties

By Christina Lin

August 7, 2017

These days it seems Washington is busy tearing up and abrogating international agreements and treaties. On July 21, Foreign Policy reported that President Donald Trump had tasked his White House staff to seek ways to declare Iran to be in non-compliance with the 2015 United Nations nuclear agreement and provide a US exit from the deal.

There is also talk of another regime change operation, something Iran has already experienced, in 1953 when the US Central Intelligence Agency backed a coup to overthrow the democratically elected Mohammad Mossadegh and replace him with a Western-friendly dictator.

Now, the US Congress is moving to force the Pentagon to violate a nuclear-arms treaty with Russia in order to score another domestic political point against Trump.

The Intermediate-Range Nuclear Forces Treaty, which US president Ronald Reagan negotiated with Soviet leader Mikhail Gorbachev in 1987, banned the development of medium-range missiles. However, key defense bills in both the US House of Representatives and the Senate would require the military to begin developing land-based missiles banned by the INF Treaty, likely provoking Russia into a dangerous nuclear arms race that the treaty was originally designed to avoid.

Legal experts criticize the legislation as congressional overreach, since the Senate can only ratify treaties, while the House has no role whatsoever, and the president alone can negotiate or abrogate treaties. Mallory Stewart, former deputy assistant secretary of state in the Bureau of Arms Control, Verification and Compliance, warned that the defense bill "exceeds the power of Congress" and "is ignoring a division of power that has been recognized since the beginning of our constitution".

This congressional overreach, built on the recent bipartisan bill imposing new sanctions on Russia, is also overreaching to Europe and causing a trans-Atlantic rift. Already the European Union is protesting against the extraterritoriality of US sanctions in coercing other countries to obey US domestic law, and German Minister for Economics and Energy Brigitte Zypries has called for the EU

to retaliate against “illegal” moves against Russia that also sanction German and other EU companies.

As David Goldman has observed in *Asia Times*, Congress in abusing sanctions as a weapon to score cheap domestic political points against Trump only serves to undermine US leadership and credibility on the international stage. Unfortunately, the inability of the Beltway establishment for self-reflection is leading Washington down a path of making “America last”.

Double standard on ‘foreign meddling’

While the Washington elites often flout domestic and international law as they see fit, in turn they apply a double standard and moralize for others to comply. This prompted *The Economist* in 2014 to publish the article “Why the sheriff should follow the law” admonishing the US for its hypocrisy.

Indeed, while Congress and President Trump’s detractors are indignant about Russia allegedly meddling in last year’s US election, they are also busy planning to overthrow governments in Iran, North Korea and Venezuela, while currently bombing Afghanistan, Iraq, Syria, Libya, Yemen, Sudan and Somalia. One ponders whether the Beltway pundits consider regime change via invasion and violent toppling of foreign governments a form of foreign meddling and a violation of state sovereignty enshrined in international law.

Perhaps not, and it seems the sheriff is above the law. Not only was the 2003 invasion of Iraq illegal and helped give rise to the ISIS scourge of today, many consider current US support for Saudi Arabia’s near- genocidal campaign on Yemen complicity in war crimes. Moreover, that some Congress members found it necessary to pen legislation (Stop Arming Terrorists Act) to stop the US government from supporting al-Qaeda-laced Syrian rebels (which some have dubbed “moderate head-choppers”), is a national disgrace.

Speaking on FORA.tv in 2007, General Wesley Clark – former NATO supreme Allied commander Europe and onetime presidential candidate – complained that Washington had suffered a foreign-policy “coup” by a group of militant regime-change enthusiasts and liberal interventionists who abuse US military power to invade countries and start wars.

When first informed of an original 1991 plan to topple seven countries in five to 10 years (Iraq, Syria, Lebanon, Libya, Somalia, Sudan and Iran), General Clark recalled his disbelief and questioned, “you mean the purpose of the military is to start wars and change governments, it’s not sort of to deter conflicts ... we’re gonna invade countries?” He went on to condemn this group of US foreign-policy hijackers who “wanted us to destabilize the Middle East, turn it upside down, make it under our control”, and declared that it was time for a national dialogue and debate by the American public on the dangerous trajectory of US foreign policy.

Reset in America

This may be wise counsel. After decades of “democracy by bombing” and “regime-change operations”, the endless 16-year war in Afghanistan may be a good example of current US policy failures, and here perhaps a picture is worth a thousand words.

Before US/Saudi meddling in Afghanistan via the Mujahideen (who later became al-Qaeda) in the 1980s, Afghan women enjoyed a great degree of freedom, attended universities, and studied to be teachers and doctors. Indeed, a 2001 US State Department report from the Bureau of Democracy, Human Rights and Labor explained how women were given the vote in the 1920s, granted equality in the Afghan constitution in the 1960s, and by the early 1990s formed 70% of schoolteachers, 50% of government workers and, in Kabul, 40% of doctors.

After the US sponsored the Islamist insurgency to destabilize the government and force the Soviets out, and the subsequent Taliban takeover in the early 1990s, this is the face of US democracy and its “promotion” of human and women’s rights in the Greater Middle East.

Not only are the people worse off, but US security is also worse off because of terrorists filling the vacuum of failed states created by US destruction of target countries, whether Afghanistan, Libya, Iraq or Syria.

Perhaps it is time for a reset. Not with Russia, but within America itself, and to have a national dialogue regarding illegal and endless wars that continue to bypass the will of the people.

<http://www.atimes.com/us-continuing-sad-record-international-agreements-treaties/>

[Return to top](#)

ABOUT THE USAF CUWS

The USAF Counter proliferation 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 Counter proliferation (then AF/XON), now AF/A5XP) and Air War College Commandant established the initial manpower and responsibilities of the Center. This included integrating Counter proliferation awareness into the curriculum and ongoing research at the Air University; establishing an information repository to promote research on Counter proliferation and nonproliferation issues; and directing research on the various topics associated with Counter proliferation 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 Counter proliferation 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 Counter proliferation - counterforce, active defense, passive defense, and consequence management.